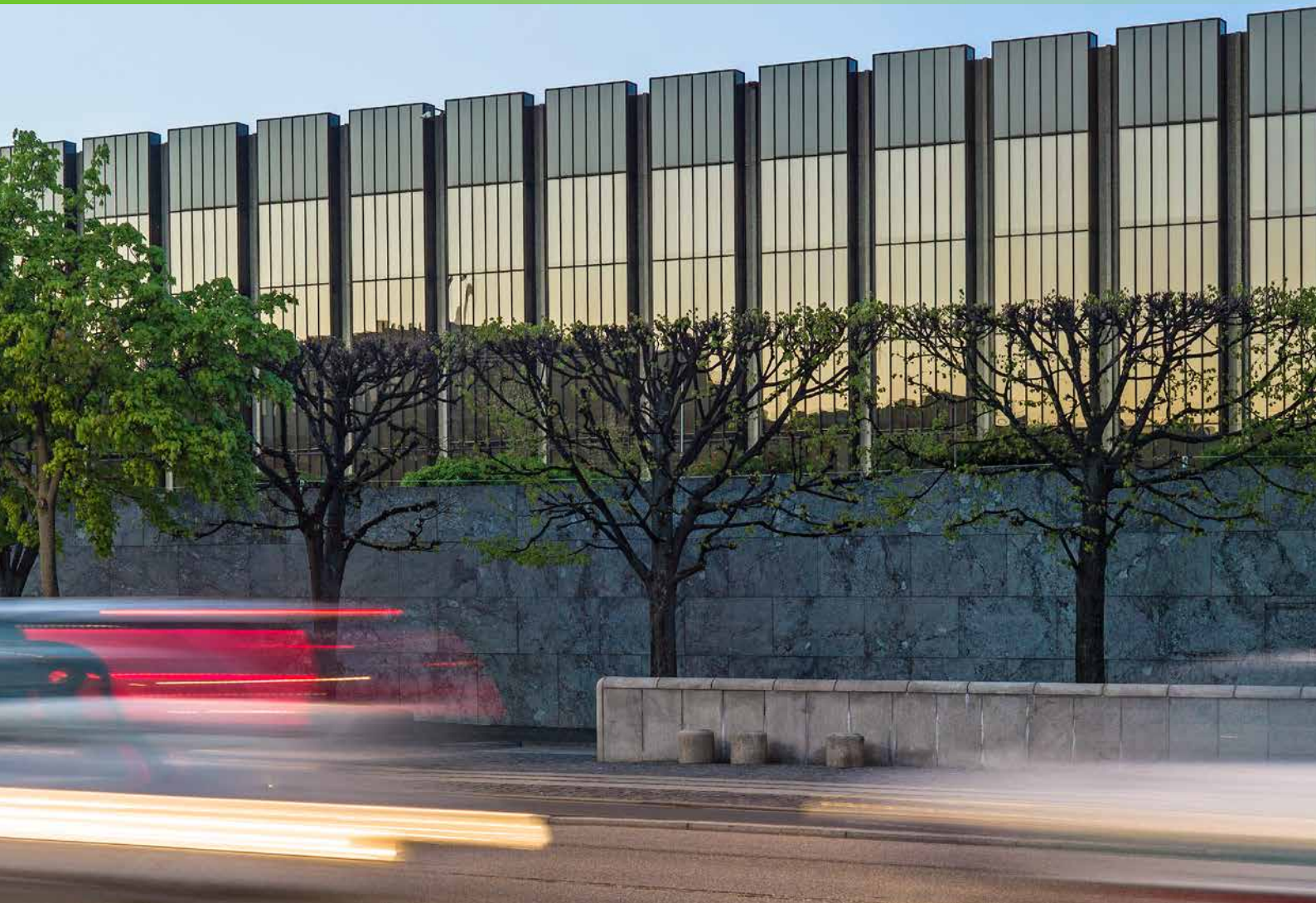


DANMARKS
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MONETARY REVIEW
3RD QUARTER

2016



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Asbjørn Klein, Financial Stability, and Simon Juul Hviid, Tina Saaby Hvolbøl, Paul Lassenius Kramp and Erik Haller Pedersen, Economics and Monetary Policy

The housing market has been growing over the last three or four years after the strong downturn in the wake of the housing bubble in the mid-2000s. At the national level, house price developments overall appear sustainable, but developments in particularly the Copenhagen housing market give cause for concern. Fluctuations in house prices – and hence the risk of house price bubbles – can be reduced by efficient housing taxation. But the nominal freeze on property value taxes and, to a lesser extent, the cap on the increase in land tax have eliminated the stabilising effect of housing taxation. It is important that housing taxes regain their position as economic stabilisers by ensuring that taxes reflect the value of house prices.

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The article analyses two key aspects of labour market flexibility: geographical job mobility and wage flexibility. Although Danish employees show a relatively high willingness to change jobs, the level of geographical job mobility is only moderate by international standards. Employees who are insured against unemployment exhibit a lower degree of geographical job mobility than those with no such insurance. In Denmark, downward wage flexibility is relatively more pronounced than in other countries. This is true of both nominal wages, i.e. wages in monetary terms, and real wages. Wage flexibility is particularly high in export-oriented industries. Normally, there is some degree of stickiness in the downward adjustment of real wages at the beginning of an economic downturn, but downward wage flexibility increases during the downturn.

67 WHAT IS DRIVING THE WEAK WORLD TRADE?

Deanie Marie Haugaard Jensen, Casper Winther Nguyen Jørgensen and Anders Farver Kronborg, Economics and Monetary Policy

The last 50 years have been characterised by accelerating growth in international trade in goods and services. This has resulted in considerable welfare gains. The increase in trade intensity has flattened since the financial crisis in 2008 and the subsequent economic slowdown. Recent years' weak growth in world trade can be attributed to

several factors. Hence, there are indications of a slowdown in several of the trends which previously contributed to boosting international trade. Cases in point are the deepening of global value chains and lifting of trade barriers. Other potential factors which could be dampening growth in global trade – also in future years – are both cyclical and structural shifts in aggregate demand as well as the geographical composition of growth. International trade has a positive effect on growth and prosperity. Especially small, open economies like Denmark stand to benefit from trading with other countries. The reason is that international trade gives access to larger markets, intensifies competition and offers opportunities for specialisation and knowledge sharing. In addition, free trade may result in welfare gains via higher purchasing power. For a small, open economy like Denmark it is thus crucial to have economic policy supporting free trade through international cooperation and other channels.

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CURRENT TRENDS IN THE FAROESE ECONOMY

After several years of economic growth, driven by e.g. high prices for farmed salmon and good catches of mackerel and herring, the boom is gathering strength in 2016. The Economic Council for the Faroe Islands expects that growth in the next couple of years will be driven by both domestic and foreign demand, especially very large investments in the public sector and in publicly owned companies. The Faroese Ministry of Finance assesses output to be above the capacity of the economy. There is thus a risk that the economy will overheat, particularly in the construction sector. At the same time, there is a structural government budget deficit. Against this background Danmarks Nationalbank finds that fiscal policy should be tightened and long-term sustainability should be ensured. Moreover, central and local government budgets should be coordinated better so as to ensure coherent management of public finances.

CURRENT ECONOMIC AND MONETARY TRENDS

SUMMARY

After high volatility around the time of the UK referendum on EU membership in June, the financial markets were calm over the summer. The Danish krone was stable throughout this period, and no intervention took place in July and August. The international organisations expect the decision to leave the EU to have a dampening effect on the UK economy, while the impact on the growth outlook for the rest of the world will be modest. In the longer term, developments in the UK in particular will depend on the agreement to be negotiated with the rest of the EU. Continued growth in global prosperity is best ensured by not putting new obstacles in the way of international trade, cf. the article "What is driving the weak world trade?" in this Monetary Review.

In the advanced economies, the labour markets are still improving, while output is rising at a more moderate pace. Growth is being driven by a robust increase in private consumption, supported by higher employment, low oil prices and very low interest rates. In the emerging market economies, growth in economic activity has slowed down a little.

The UK decision to leave the EU has slightly reduced expected growth in Denmark's export markets. But strong stimuli in the form of low interest rates and rising disposable income are still boosting demand in the Danish economy. Against that background, growth in the real gross domestic product, GDP, is expected be 0.9 per cent this year, rising to 1.5 per cent next year and 1.8 per cent in 2018. That is virtually unchanged compared with the June projection.

This upswing is most visible in the labour market, and employment is expected to rise by a further 50,000 from the 2nd quarter of 2016 to the 4th quarter of 2018. There are indications of mounting pressures in the labour market, and there is a risk that the upswing will come to an early halt due to shortage of labour. Against that background, the currently accommodative fiscal policy should gradually be tightened in the coming years in order to ensure stable economic growth.

In late August, the Danish government presented its proposal for a 2025 plan aimed at strengthening the Danish economy. The focus is on increasing the supply of labour and boosting productivity growth. The structural government budget balance is not expected to reach equilibrium until 2024, whereas the target has been 2020 so far. Consequently, the economy will not be in equilibrium until long after it has reached a cyclically neutral level and the output gap has closed.

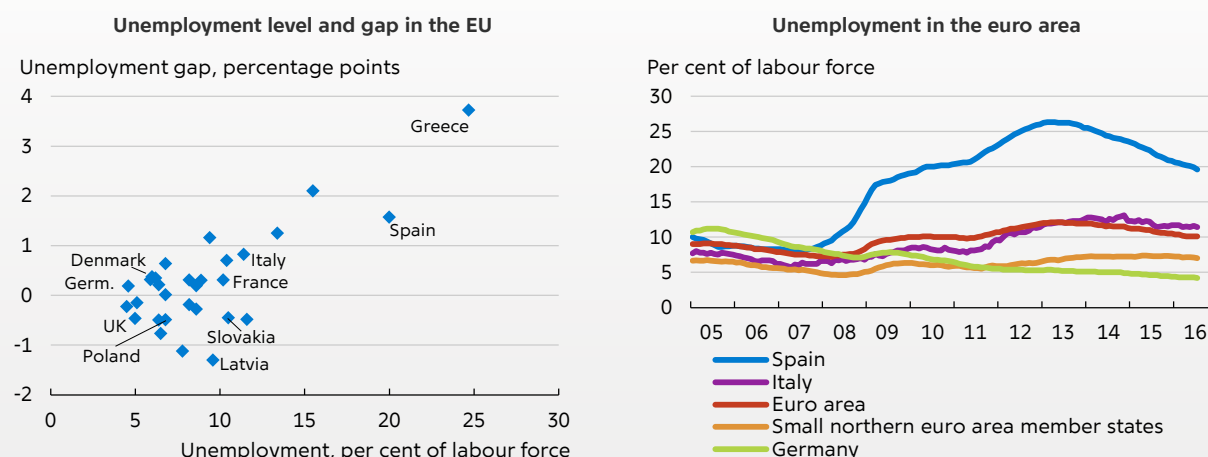
THE INTERNATIONAL ECONOMY AND THE FINANCIAL MARKETS

SOLID LABOUR MARKET GROWTH IN THE ADVANCED ECONOMIES

The upswing in the advanced economies continues. This is most evident in the labour markets, where employment continued to rise into the 2nd quarter. In the euro area, the unemployment rate was 10.1 per cent in July. That is two 2 percent-

Unemployment is declining in the euro area – but there are still large differences across member states

Chart 1



Note: Left-hand chart: The European Commission's forecast for 2016 from May 2016 is shown. Right-hand chart: Small northern euro area member states are Austria, Finland and the Netherlands. A simple average of unemployment in these three member states is shown.

Source: European Commission and Macrobond.

age points lower than at the peak in the spring of 2013.

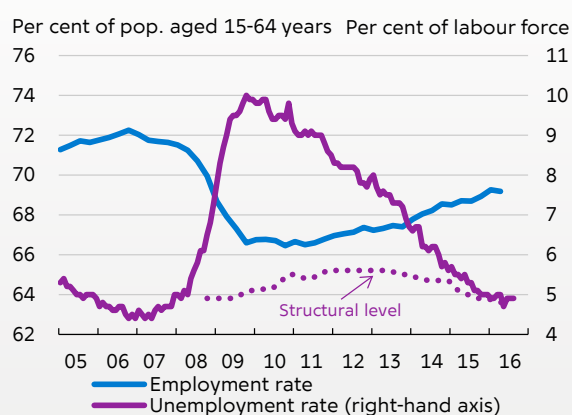
According to the European Commission, the fall in unemployment means that in many EU member states the unemployment gap – the difference between actual and structural unemployment – has almost closed, and in many Eastern European member states it is negative, cf. Chart 1 (left). But due to both cyclical and structural factors, unemployment varies considerably across the euro area. It is still substantially higher in the southern than in the northern member states, cf. Chart 1 (right). Spain is among the euro area member states with the sharpest declines in unemployment, but at 19.6 per cent in July the country has the second highest level in the euro area. In this context it should be noted that average unemployment has been just over 7 percentage points higher in Spain than in the euro area overall since 1980. In Germany, the rate of unemployment is 4.2 per cent.

In the USA, growth in employment has contributed to an unemployment rate of 4.9 per cent in August, cf. Chart 2. This indicates that the US labour market is close to full capacity. The Federal Reserve's Federal Open Market Committee, FOMC, assesses structural unemployment in the USA to be 4.8 per cent. In other words, the unemployment gap has almost closed. However,

the level of structural unemployment has regularly been adjusted downwards over the last three years. Since mid-2015, the decline in unemployment has slowed as the rise in employment has been countered by an increase in the labour force.

Unemployment in the USA is close to its structural level

Chart 2



Note: The FOMC did not begin to publish its members' estimates of structural unemployment until 2009. The structural level is the middle value in the interval for the FOMC's estimates until and including March 2015. After that it is the median.

Source: FOMC, Macrobond and OECD.

Both in the euro area and in the USA, GDP is showing a weak trend relative to the labour market. A comparison of the current and previous upswings shows that the euro area employment rate has risen more rapidly, while GDP per 15-64-year-old has grown at virtually the same pace, cf. Box 1.

The euro area economy grew by 0.3 per cent in the 2nd quarter, cf. Chart 3 (left). This is just below the average quarterly growth rate during

the upswing. Among the large euro area member states, Spain saw the strongest growth, at 0.8 per cent, while the German economy grew by 0.4 per cent. GDP was unchanged in both France and Italy. US GDP grew by 0.3 per cent, which means that growth accelerated slightly after two weak quarters, cf. Chart 3 (right). The Purchasing Managers' Index, PMI, which provides a good indication of where the economy is heading, points to growth

A perspective on the euro area upswing

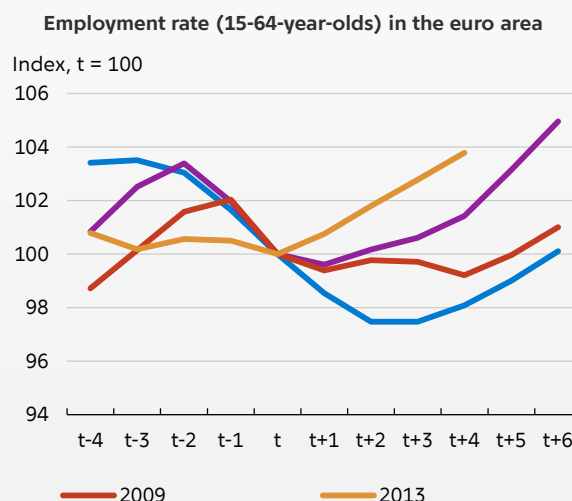
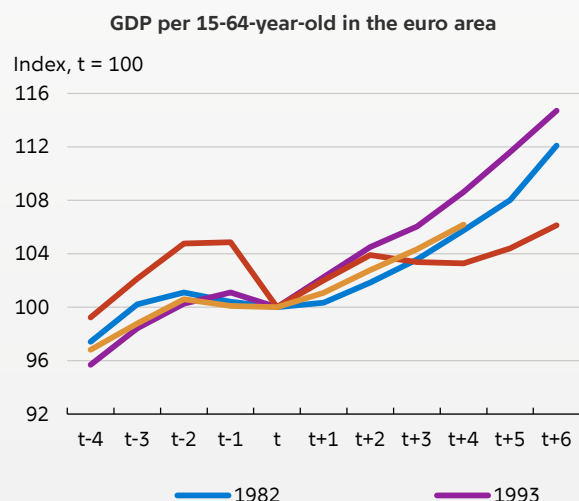
Box 1

Continues on next page

In the euro area, growth in GDP per 15-64-year-old has been more or less the same during the current upswing as in previous upswings, cf. the chart below (left). But the employment rate – employment as a share of the population aged 15-64 years – has risen much faster, cf. the chart below (right). And furthermore, the employment rate has risen from

approximately 60 to 70 per cent over the last 30 years, one reason being that the participation rate of women has increased significantly. The improvement in the labour market has gone hand in hand with low productivity growth, as also seen in many other advanced economies. This is a major reason why GDP has not grown at a faster-than-normal pace.

Growth in the euro area is in line with that seen during previous upswings, but the employment rate is rising more strongly

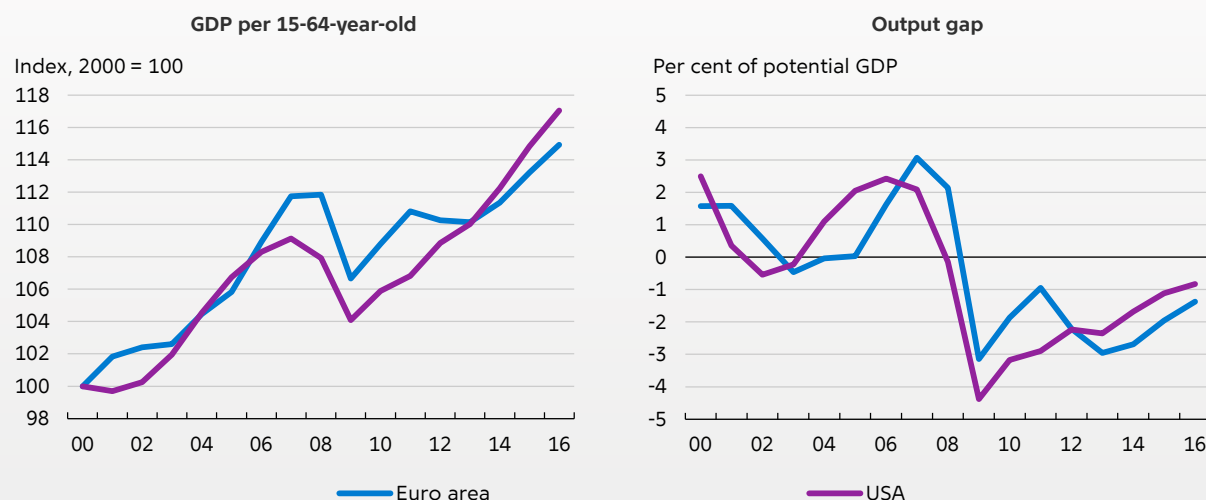


Note: Development in GDP per 15-64-year-old and the employment rate in the euro area from four years before until six years after the four most recent recessions. Data for 2016 and 2017 is based on the European Commission's forecast from May 2016. The recession year, t, is defined as the bottom of the economic cycle based on the Centre for Economic Policy Research's, CEPR's, identification of economic cycles for the euro area.

Source: European Commission and own calculations.

From the millennium rollover until the financial crisis, GDP per 15-64-year-old rose a little faster in the euro area than in the USA, but since then the pattern has reversed, cf. the chart below (left). This is because the upswing has been steadier in the USA, where growth in real GDP per 15-64-year-old has been between approximately 1 and 2.5 per cent every year since the financial crisis. In contrast, the euro area was hit by another setback in connection with the debt crisis and saw negative GDP growth in 2012 and 2013. But in the last three years, the growth rates have once again approached each other.

The recovery has contributed to narrowing the output gap – the difference between actual and potential output – in both the euro area and the USA, cf. the chart below (right). This indicates that the two economies are approaching normal capacity utilisation. However, the gap is still a little wider in the euro area than in the USA according to an average of the international organisations' estimates. Since potential output is estimated on the basis of developments in the capital stock, labour and productivity, the calculations take into account that population growth is higher in the USA than in the euro area.

More subdued growth in the euro area than in the USA since the financial crisis

Note: Left-hand chart: GDP in 2016 is based on the European Commission's forecast from May 2016. Right-hand chart: The output gap has been calculated as an average of the estimates from the European Commission, the International Monetary Fund, IMF, and the OECD.

Source: European Commission, IMF, OECD and own calculations.

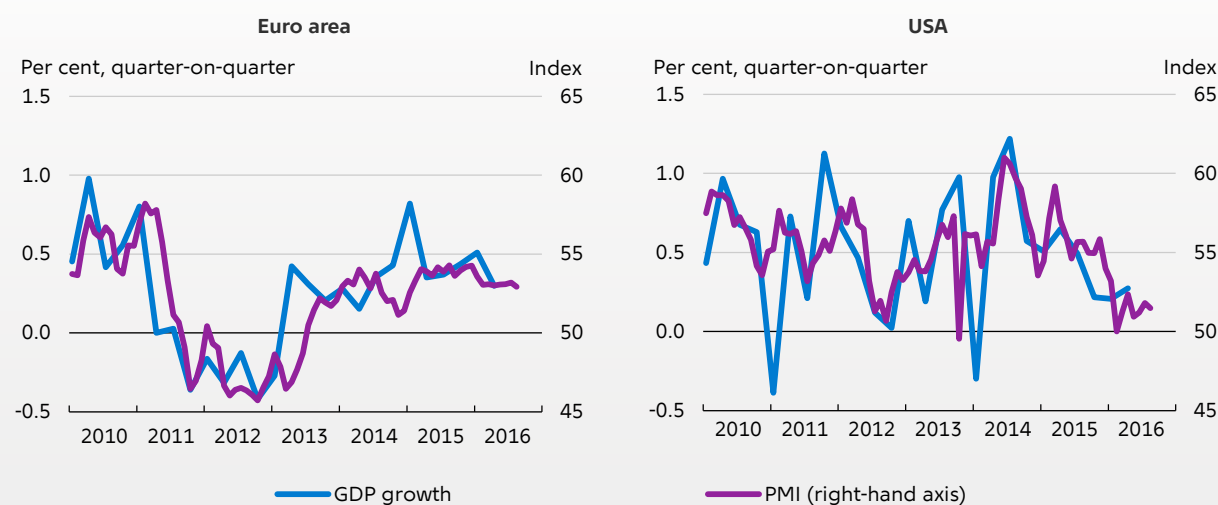
in the euro area and the USA remaining modest in the 3rd quarter.

Both the euro area and the USA are seeing solid growth in domestic demand, especially private consumption, cf. Chart 4 (left and right). This

should be viewed in the light of higher real disposable income as a result of rising employment, low interest rates and low consumer price inflation. In the euro area, investment growth has also increased. It is being supported by the accommo-

PMI indicator points to continued moderate growth in the 3rd quarter in the euro area and the USA

Chart 3

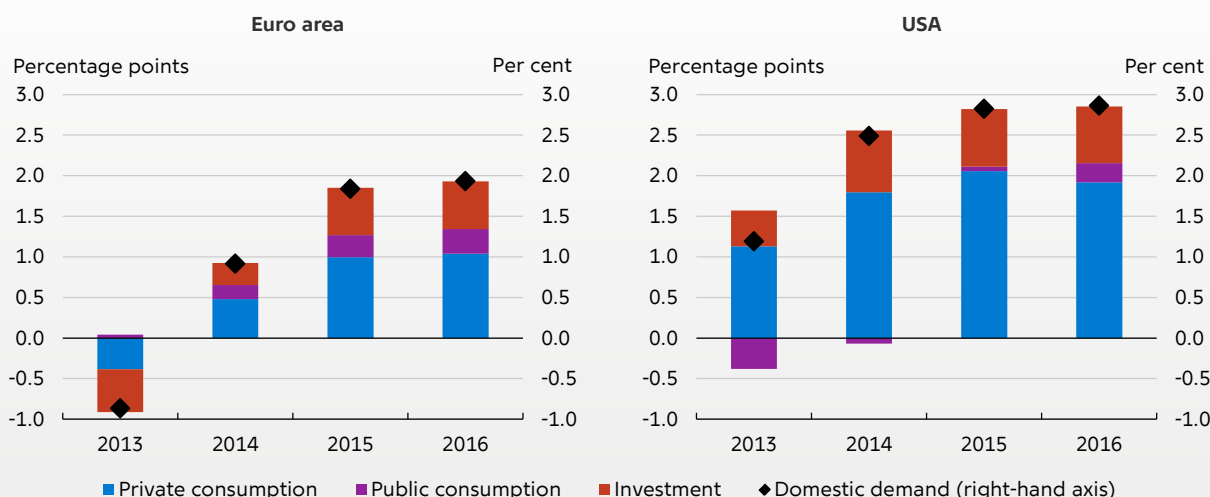


Note: Composite output PMI for the service and industrial sectors. A value above (below) 50 indicates positive (negative) growth.

Source: Macrobond.

Growth in the euro area and the USA is driven by solid domestic demand

Chart 4



Note: Growth contributions to domestic demand, exclusive of inventory investment.
Source: European Commission and own calculations.

datave monetary policy of the European Central Bank, ECB, which has contributed to very low interest rates and to easing of the banks' credit standards. In the USA, on the other hand, investment growth has declined in the last couple of years. This is mainly because investment in energy production has fallen in response to the declining oil prices. But residential investment has risen substantially over the same period. In the euro area, fiscal policy – measured by the change in the primary structural balance – also has a slightly stimulating effect on economic activity, while the effect is more or less neutral in the USA.

Exports made a marginally positive contribution to US growth in the 2nd quarter after having had a downward impact over the last year. This

reflects that the dollar ceased to strengthen at the beginning of 2016. From mid-2014 until the end of 2015, it strengthened by approximately 20 per cent vis-à-vis a trade-weighted basket of currencies. In the euro area, growth in exports has slowed down a little over the last year. This is partly attributable to a 7 per cent strengthening of the effective exchange rate of the euro from April 2015 to July 2016.

In recent months, the UK economy has been affected by the fact that the people of Britain in a referendum on 23 June voted in favour of "Brexit", i.e. to leave the EU. This outcome led to high volatility in the financial markets in the weeks after the referendum, not least in the UK, cf. Box 2. The international organisations, the Bank of England

The economic situation in the UK after the referendum on EU membership

Box 2
Continues on next page

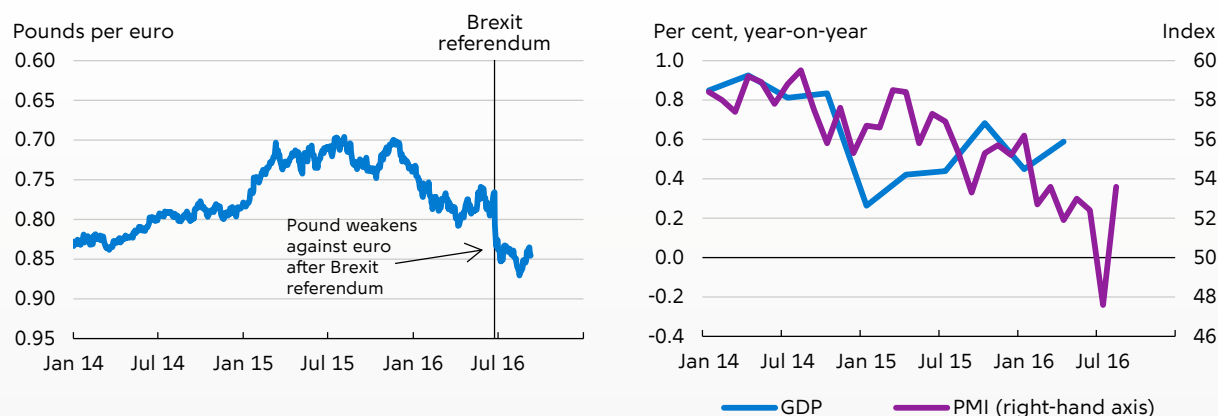
On 23 June, the UK held a referendum on whether to remain in the EU or to leave. A majority voted in favour of leaving the EU, i.e. "Brexit". This led to strong fluctuations in the financial markets in the weeks after the referendum, not least in the UK. The pound weakened by 5 per cent against the euro the day after the referendum, and in mid-September it was approximately 10 per cent weaker than before, cf. the chart below (left). The weakening reflected expectations that the UK economy would take a more subdued path after the Brexit referendum. Yields on UK government bonds also fell considerably. On 27 June, 10-year government bonds

traded at yields below 1 per cent for the first time ever, and in mid-September the yield was 0.9 per cent. Equity prices fell, but unlike the exchange rate and yields they have risen again, although not when measured in foreign currency, however. Equity prices also fell in the international stock markets, but the markets calmed down during July.

National accounts data for this quarter will not be available until the end of October. Key figures and indicators published after the referendum point to lower growth in the UK economy in the short term. The PMI dived in July, but rose again in August, cf. the chart below (right).

The UK economy is affected by the Brexit referendum

Box 2
Continued



Source: Macrobond.

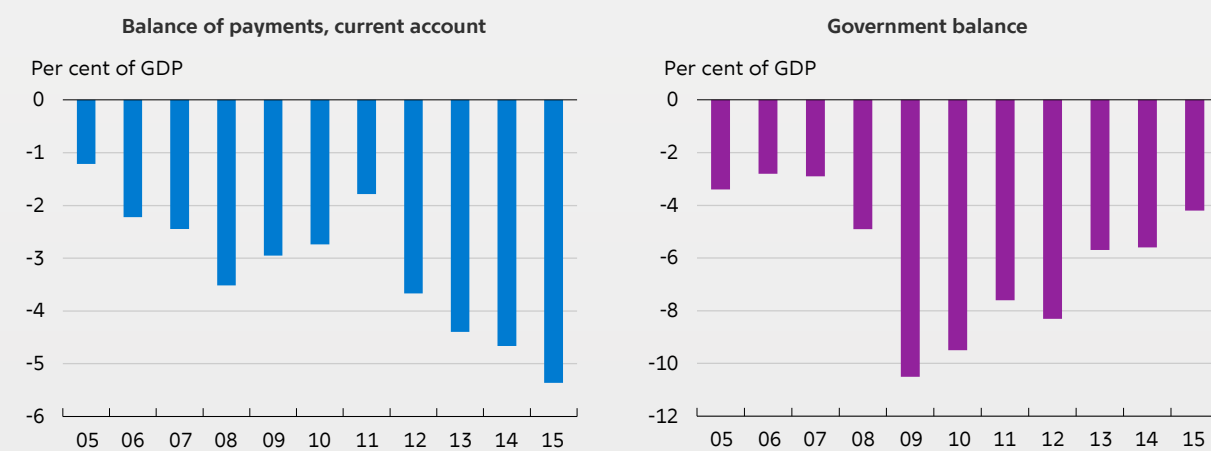
The Bank of England also expects economic activity to slow down. So in early August it announced a package of monetary policy easing measures to counter the dampening of the economy: the bank rate was reduced by 25 basis points to 0.25 per cent, a Term Funding Scheme was introduced with a view to improving the transmission of the interest rate cut, the government bond purchase programme was increased by 60 billion pounds to 435 billion pounds (a total of 23 per cent of GDP) and a programme was introduced for purchasing corporate bonds for up to 10 billion pounds. Immediately after the announcement the pound weakened slightly, indicating that the announcements were a little more extensive than expected.

Studies by, inter alia, the OECD and HM Treasury indicate that there will also be severe economic consequences for the UK in the long term. How severe they will be will depend on the new trade agreement to be negotiated with the rest of the EU, among other factors. As a main rule, structural growth in the UK will be higher, the fewer obstacles to trade and labour mobility the agreement contains, cf. the article "What drives the weak world trade?" in this Monetary Review. Before negotiations on the UK's exit from the EU

can begin, the UK must activate Article 50 of the EU Treaty on voluntary withdrawal from the Union. Unless otherwise agreed, the country will leave the EU within two years of the activation date.

The UK has had current account deficits since 1984, and the deficit has increased considerably in recent years, to more than 5 per cent of GDP in 2015, cf. the chart below (left). This means that the UK is dependent on a continued inflow of capital to finance investment in real capital and the government budget deficit, cf. the chart below (right). The weakening of the pound should also be seen in this context. A substantial part of the capital inflow is in the form of foreign direct investment, FDI, of which the UK is one of the largest recipients in the EU. The Bank of England expects the current account deficit to be reduced in the coming years, one reason being that the weakening of the pound is expected to improve the trade balance. However, this requires a strong impact from the exchange rate on import and export volumes (high elasticity). It is also expected that the UK's net foreign liabilities (foreign debt) will decrease as the country has larger assets than liabilities in foreign exchange. This could also improve net investment income from abroad.

A double deficit in the UK



Source: Macrobond.

and other observers all expect growth to subside in the near term.

The Japanese economy grew by 0.2 per cent in the 2nd quarter, indicating continuation of recent years' subdued growth. As a result, the Japanese government in late July presented a large growth package comprising, inter alia, increased infrastructure investments.

In the emerging market economies, growth in economic activity has slowed down a little. China's economic growth has declined in recent years, and the gradual transition to lower growth rates that are closer to those of the other emerging market economies continues. This should be viewed in the light of an ongoing transformation of the Chinese economy, whereby growth is driven more by private consumption than investment and exports, compared with previously. The Chinese authorities support the economy via fiscal stimuli and accommodative monetary policy, which helps to reduce the burden of servicing the high private sector debt. Among the other emerging market economies, Russia and Brazil have been severely affected by the fall in commodity prices, but now there are small signs of recovery in both countries. One of the reasons is that the price of oil has risen since the turn of the year.

In Sweden, growth has slowed down a little over the last few quarters. Underlying factors include falling exports and lower investment growth. The low level of interest rates has contributed to a strong rise in house prices for several years. Sveriges Riksbank has warned that a potential scenario with plummeting house prices and high indebtedness could lead to a lengthy recession.

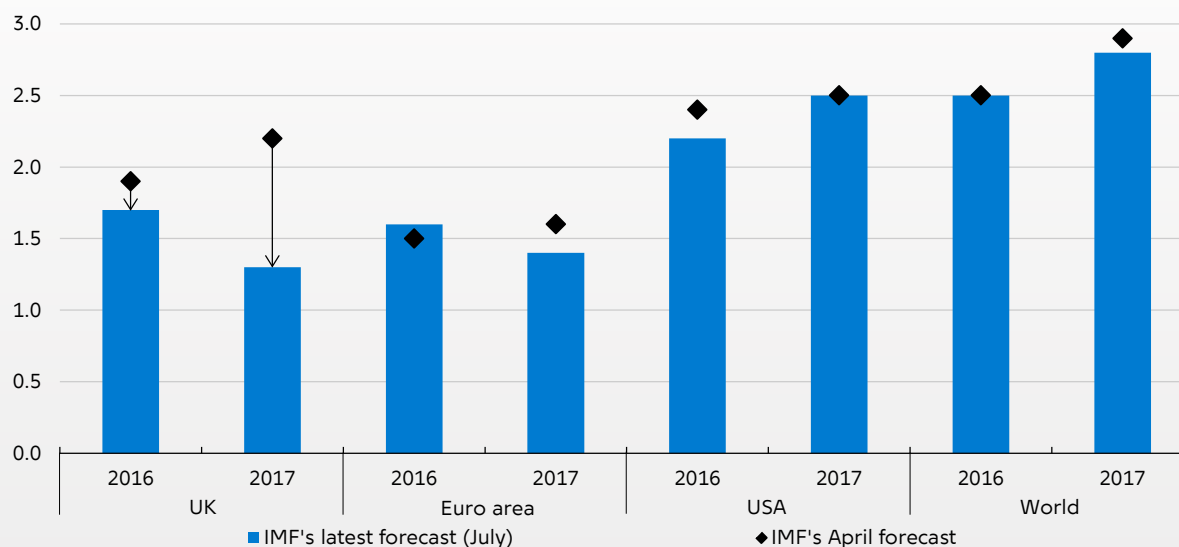
In Norway, the economy has been affected by the fall in oil prices in recent years, which has substantially reduced investments in energy production. Particularly the regions involved in oil production have felt the slowdown in growth. However, the Norwegian economy is being buoyed up by low interest rates and accommodative fiscal policy. The effective exchange rate of the Norwegian krone has weakened by approximately 20 per cent since early 2013. This has pushed up annual consumer price inflation, which was 5 per cent in July.

In its most recent forecast, from July, the International Monetary Fund, IMF, assesses the global cyclical outlook to be by and large unchanged despite the UK referendum on EU membership, cf. Chart 5. This means that growth in the global economy is still expected to increase a little in 2017, one reason being that economic activity is

The global economic outlook is by and large unchanged despite the Brexit referendum

Chart 5

Real growth in GDP, per cent year-on-year



Note: Upward or downward adjustment relative to the IMF's forecast from April 2016.

Source: IMF, *World Economic Outlook Update*, July 2016.

expected to rise in the USA. But Brexit is expected to have a dampening effect on the UK economy, so the growth forecast for the UK has been adjusted substantially downwards. Euro area growth is also expected to be a little more subdued as a result of increased uncertainty, among other factors. The IMF emphasises that downward risks have increased due to considerable economic, political and institutional uncertainty linked to the position of the UK and the future exit negotiations with the rest of the EU.

HIGHER REAL WAGES AND LOW INFLATION IN THE EURO AREA AND THE USA

Although employment has risen, nominal wage growth in the euro area and the USA has been moderate in recent years, cf. Chart 6 (left). However, this should be viewed in the light of low consumer price inflation, which means that real wages have risen more strongly than in the years leading up to the financial crisis, cf. Chart 6 (right). The prolonged period of weak price developments may have led employees to adjust inflation expectations, and hence demands for nominal wage increases, downwards.

There may also be other reasons why increases in nominal wages have been moderate. Firstly, there have been spare labour resources until now,

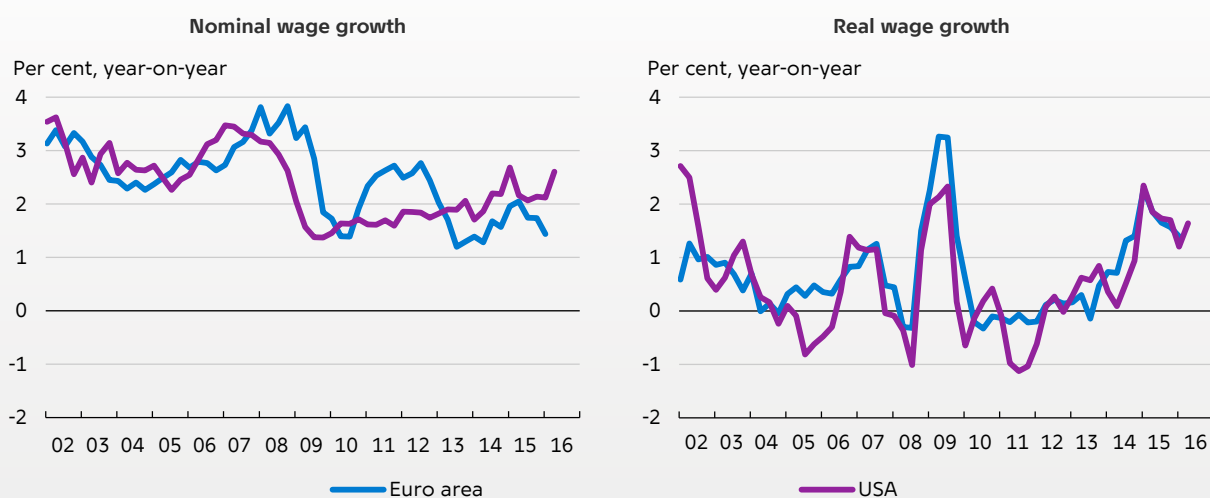
although the unemployment gap has narrowed considerably in many countries. For example, there have been people working part time who would like full-time employment, or people who have been outside the labour market in the crisis years but now see an opportunity to return. Secondly, growth in productivity has been subdued, and viewed in isolation this has reduced firms' earnings growth and their possibilities of offering higher wages. Moreover, according to the Federal Reserve wages are already high because many firms could not or would not reduce the wage level during the financial crisis. This means that they have subsequently been able to attract labour without increasing wages.

Euro area consumer prices rose by 0.2 per cent year-on-year in August, so that the rate of increase was positive for the third month in a row, cf. Chart 7. In recent months, the negative contribution from energy prices has been reduced (base effects). Core inflation, measured by the annual increase in the consumer price index excluding energy, food, alcohol and tobacco, has been just under 1 per cent over the last year.

In the USA, inflation rose at the end of 2015, measured by the Personal Consumption Expenditures index, PCE, which is the Federal Reserve's preferred measure of inflation, and since the turn

**Nominal wage growth is subdued
– but real wages are rising solidly in both the euro area and the USA**

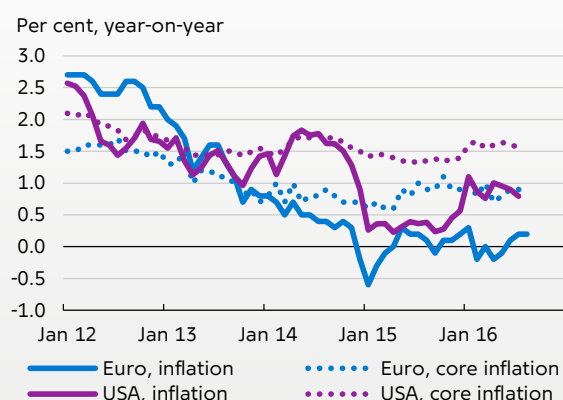
Chart 6



Note: Private sector wage growth. Right-hand chart: The Personal Consumption Expenditures, PCE, deflator has been applied for the USA and the EU Harmonised Index of Consumer Prices, HICP, for the euro area.
Source: Macrobond and own calculations.

Price pressures are low in both the euro area and the USA

Chart 7



Note: HICP inflation for the euro area, PCE inflation for the USA.
Source: Macrobond.

of the year, PCE has been approximately 1 per cent. Core inflation has been just over 1.5 per cent.

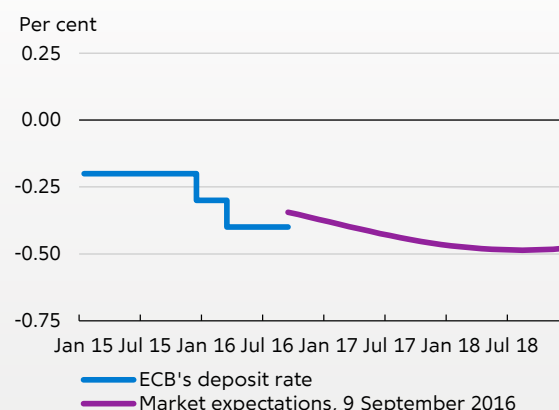
INTEREST RATES ARE EXPECTED TO REMAIN LOW FOR A LONG TIME, BOTH IN THE EURO AREA AND IN THE USA

The ECB kept its monetary policy unchanged at the interest rate meeting on 8 September. The day after the UK referendum on EU membership, market participants adjusted their expectations of future increases in monetary policy interest rates in the euro area. Presumably this reflected expectations of a weaker growth outlook. Implied market expectations in mid-September indicate that the first interest rate increase is not expected until after 2018, cf. Chart 8.

In the USA, the FOMC chose to keep its monetary policy interest rate unchanged at the July meeting. At the June meeting, the FOMC adjusted its expectations of interest rate developments downwards. The majority of FOMC members still believed that a total interest rate increase of 0.5 percentage point in 2016 would be appropriate, but expectations of the level of interest rates at the end of 2017 and 2018 were lowered considerably, cf. Chart 9 (left). This means that the members are still adjusting their expectations downwards as regards the level of monetary policy interest rates, cf. Chart 9 (right), which has historically been substantially higher in boom periods.

Euro area interest rates are expected to remain low for a long time

Chart 8



Note: Implied market expectations have been calculated on the basis of Overnight Interest Swap rates.
Source: Scanrate Rio and Macrobond.

Market participants' expectations of interest rate developments were adjusted downwards after the Brexit referendum, but have subsequently reversed and are now slightly higher than before the referendum. However, the spread between the FOMC's and the market's expectations remains wide.

The Bank of Japan kept its interest rates and government bond purchase programme unchanged at the meeting in late July. However, it decided to double purchases of exchange-traded funds to approximately 1 per cent of GDP.

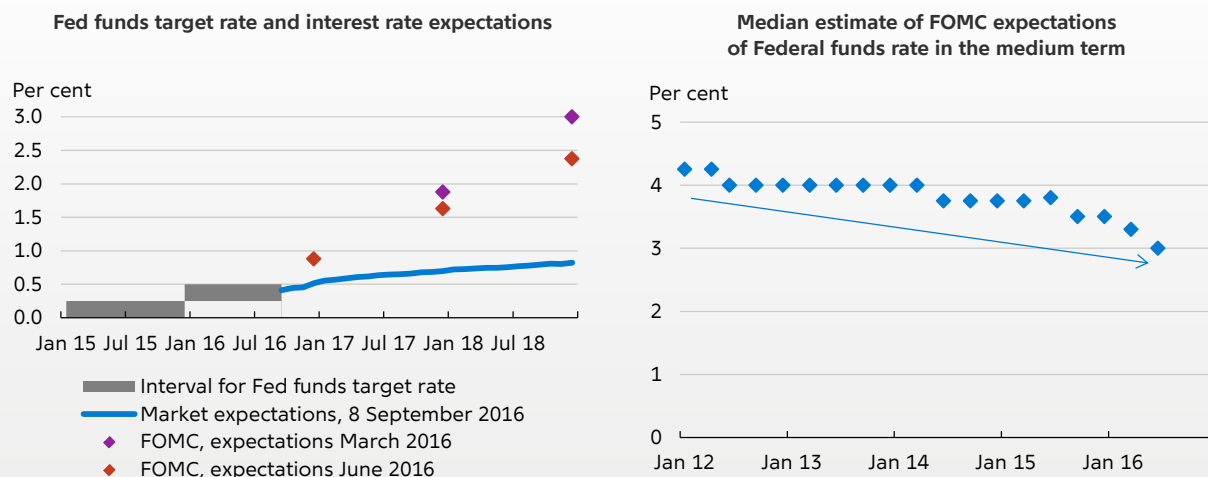
THE FINANCIAL MARKETS HAVE CALMED DOWN AGAIN AFTER THE BREXIT REFERENDUM

The financial markets stabilised during July, following high volatility in connection with the UK referendum on EU membership, cf. Chart 10 (left). In the euro area, the benchmark stock index, EuroStoxx, fell by 9 per cent the day after the referendum, but by mid-September prices were back at the pre-referendum level, cf. Chart 10 (right). US equity prices fell slightly less, and in July the benchmark index, S&P 500, set several new records. This reflected good key indicators for the US economy, among other factors.

Government bond yields in the euro area have generally continued to fall in recent months. They rose briefly in, inter alia, Spain and Italy in connection with the Brexit referendum, but in mid-September, 10-year government bond yields in Spain,

Expectations of interest rate increases in the USA were adjusted downwards in June

Chart 9



Note: Left-hand chart: Market expectations have been calculated on the basis of Fed funds futures.

Right-hand chart: The median estimate has been published since 2012.

Source: FOMC and Macrobond.

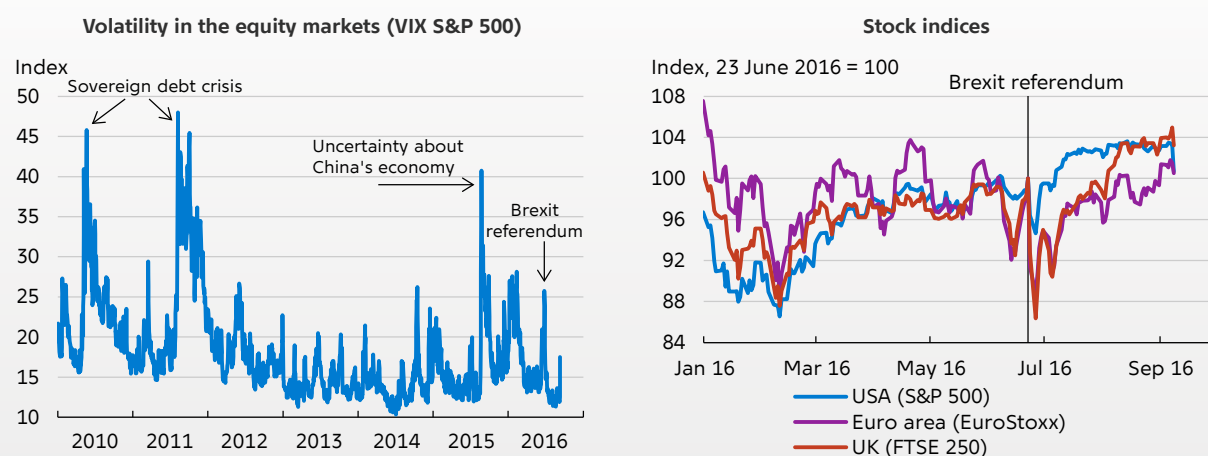
Italy and Ireland were close to their lowest levels ever, cf. Chart 11 (left). This is partly attributable to the ECB's asset purchase programme. Yields on German government bonds also continued to fall, especially in the days after the Brexit referendum, cf. Chart 11 (right), when uncertainty triggered an investor flight to safer assets. In the course of June, yields on 5-, 6- and 7-year German government bonds all fell below -0.4 per cent, so that the

ECB could no longer purchase these as part of its asset purchase programme. The reason is that the limit is the ECB's deposit rate, which is currently -0.4 per cent. Since the beginning of July, German yields have risen a little again, but remain below -0.4 per cent for 5- and 6-year government bonds.

In late July, the European Banking Authority, EBA, published the results of the 2016 European stress test. It comprises 51 European banks, three

Equity prices have risen again after having fluctuated strongly in connection with the Brexit referendum

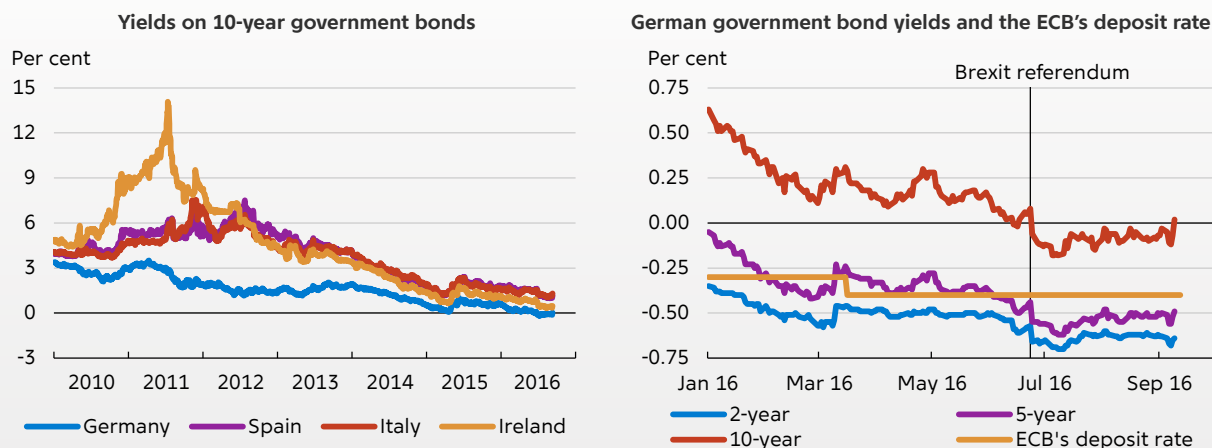
Chart 10



Source: Macrobond.

Government bond yields in the euro area are historically low

Chart 11



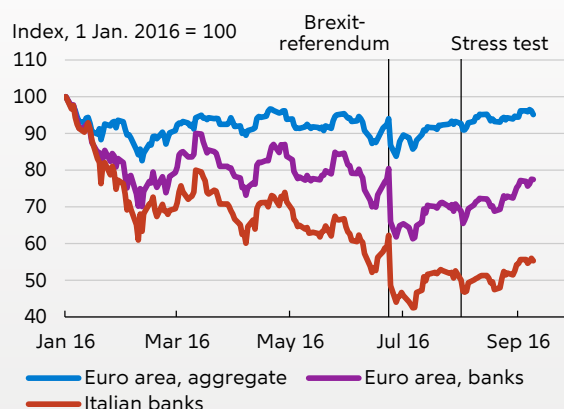
Source: Macrobond.

of which are Danish.¹ The banks were generally very robust, mainly because they were better capitalised than when an equivalent test was performed in 2014. However, the results for the individual banks differed considerably. Italy's third largest bank, Banca Monte dei Paschi di Siena, was at the bottom of the list. This is one of the reasons why it presented a recovery plan on the day the test results were published.

After the stress test results had been published, bank equity prices fell, especially in Italy, where they dropped by 5 per cent, cf. Chart 12. One of the reasons could be that the test has further highlighted the challenges faced by some euro area banks in the form of a large share of non-performing loans. However, bank equities declined much more after the UK referendum on EU membership. This is because the prospect of Brexit has increased uncertainty about bank earnings and generally generated uncertainty for the financial sector due to London's status as a financial centre. Developments have almost reversed since the Brexit referendum, but bank equities – especially the Italian ones – are still at a lower level than at the beginning of the year.

Euro area bank equities affected by the Brexit referendum and the EU stress test

Chart 12



Note: For the euro area, EuroStoxx and EuroStoxx Banks are shown. For Italian banks, FTSE Banks is shown.

Source: Macrobond.

1 The banks from Denmark were Danske Bank, Nykredit and Jyske Bank. In addition, the Danish Financial Supervisory Authority has performed an equivalent stress test of Sydbank in order to achieve more extensive coverage of the Danish banking sector.

EURO AREA FISCAL POLICY IS SLIGHTLY ACCOMMODATIVE

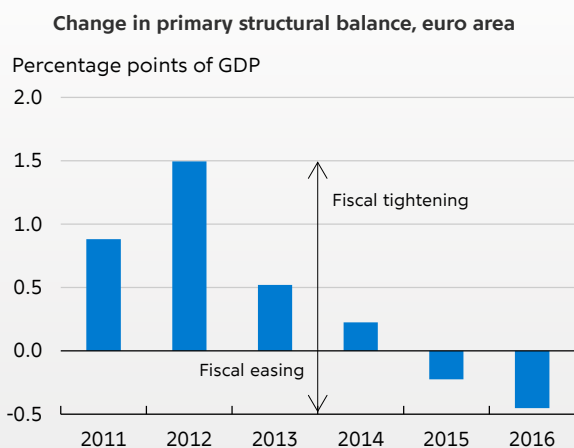
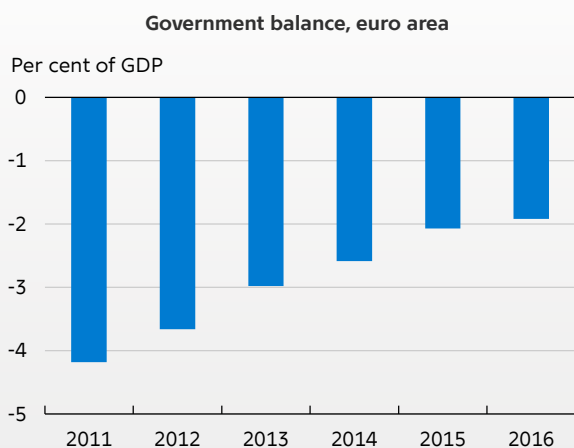
The euro area government deficit was reduced considerably until 2015, cf. Chart 13 (left). The main reason was that fiscal policy was tightened in many euro area member states in the years after the financial crisis. At the same time, the economic upswing and low interest costs have contributed to improving public finances.

For the euro area overall, fiscal policy will be slightly accommodative in 2016, cf. Chart 13 (right). This reflects factors such as higher public spending

in some member states because the number of asylum seekers is rising. But other member states are still consolidating their public finances. Croatia, France, Greece, Portugal, Spain and the UK are still subject to the EU's excessive deficit procedure and have received recommendations to implement fiscal measures in order to bring the government deficit below 3 per cent of GDP by a given deadline. In August, the Ecofin Council also decided to issue more severe recommendations to Portugal and Spain for failing to observe their recommendations to a sufficient degree, cf. Box 3.

Euro area fiscal policy is slightly accommodative

Chart 13



Source: European Commission.

European Commission proposes further fiscal tightening in Portugal and Spain

Box 3

In July, the Ecofin Council decided that Spain and Portugal had not to a sufficient degree observed the recommendations to reduce their government deficits. The Council subsequently decided to issue more severe recommendations (notices) to these two member states to permanently bring their deficits below 3 per cent of GDP. This is the fourth time euro area member states receive notices – Greece, Germany and Belgium have previously received them.

The Commission proposes that Portugal deliver extra fiscal tightening of 0.25 per cent of GDP in 2016 relative to the tightening contained in the budget for 2016. This should contribute to reducing the government deficit to 2.5 per cent of GDP in 2016. Portugal had previously been given a deadline of 2015 for reducing the deficit to less than 3 per cent of GDP. As regards Spain, the Commission has proposed a postponement of the deadline from 2016 to 2018. In order to reduce the deficit sufficiently, Spain should also introduce extra fiscal tightening corresponding to 0.5 per cent of GDP

in both 2017 and 2018 relative to the tightening included in the Commission's forecast from May. Both member states must submit a report on their fiscal tightening measures to the Commission by 15 October, along with the proposed finance act for 2017.

Under the revised fiscal rule set from 2011, known as the "Six Pack", it has become possible to fine euro area member states up to 0.2 per cent of GDP when they receive notices. In special circumstances the fine may be reduced or cancelled, however. In addition, allocations from the structural funds may be suspended. Both Portugal and Spain were in line for fines, which would be the first time the new rules were applied. But the Commission has proposed that the two fines be cancelled, citing that both member states have already consolidated their fiscal policies considerably and introduced extensive structural reforms. The issue of suspension of allocations from the structural funds has been postponed until the autumn.

In June, the Ecofin Council decided to abrogate the excessive deficit procedure for Cyprus, Ireland and Slovenia, which had all reduced their deficits to less than 3 per cent of GDP. In the case of Cyprus, this was one year ahead of the deadline.

MONETARY AND EXCHANGE RATE CONDITIONS

THE KRONE IS STABLE ON THE STRONG SIDE OF THE CENTRAL RATE

In recent months, the krone has been stable vis-à-vis the euro at a level just above its central rate in ERM 2, cf. Chart 14 (left). The growing uncertainty in the European financial markets up to the Brexit referendum on 23 June increased demand for kroner, and Danmarks Nationalbank intervened by purchasing foreign exchange for almost kr. 50 billion in May and June. Foreign investors' purchases of shares in the energy company Dong when it was listed in June also contributed to the demand for kroner. Most of the intervention in June took place before the referendum on UK membership of the EU.

The turmoil in the financial markets after the referendum subsided considerably in the following days, and the increased demand for kroner was also of short duration. Danmarks National-

bank did not intervene in July and August, and the foreign exchange reserve was kr. 449.8 billion at the end of August, cf. Chart 14 (right).

Danmarks Nationalbank has kept the rate of interest on certificates of deposit at -0.65 per cent since January, and the ECB has kept its key policy rate at -0.40 per cent since March. Hence, the monetary policy interest rate spread to the euro area remains -0.25 percentage point.

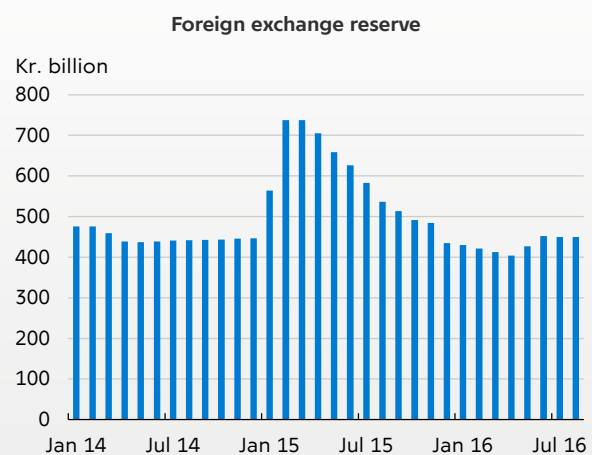
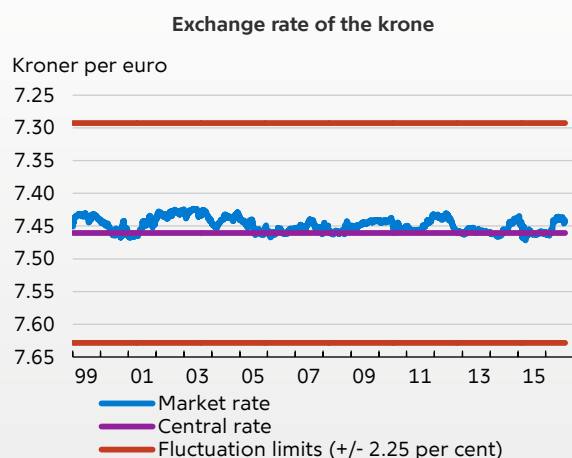
LOWER MONEY MARKET INTEREST RATES

The banks' net position vis-à-vis Danmarks Nationalbank has increased considerably since April and is now around kr. 160 billion, cf. Chart 15 (left). This is partly because Danmarks Nationalbank intervened and sold kroner in connection with the inflow of foreign exchange in May and June. The increased krone liquidity for the banking sector overall accrues interest at the rate of interest on certificates of deposit, i.e. -0.65 per cent. While the net position has increased, Danish money market interest rates have fallen by around 15 basis points and were approximately 15 basis points higher than the rate of interest on certificates of deposit over the summer, cf. Chart 15 (right).

The falling Danish money market interest rates in the last three months mean that the spread between money market interest rates in Denmark and the euro area has become negative again after having been around zero at the beginning of

The krone is on the strong side of the central rate

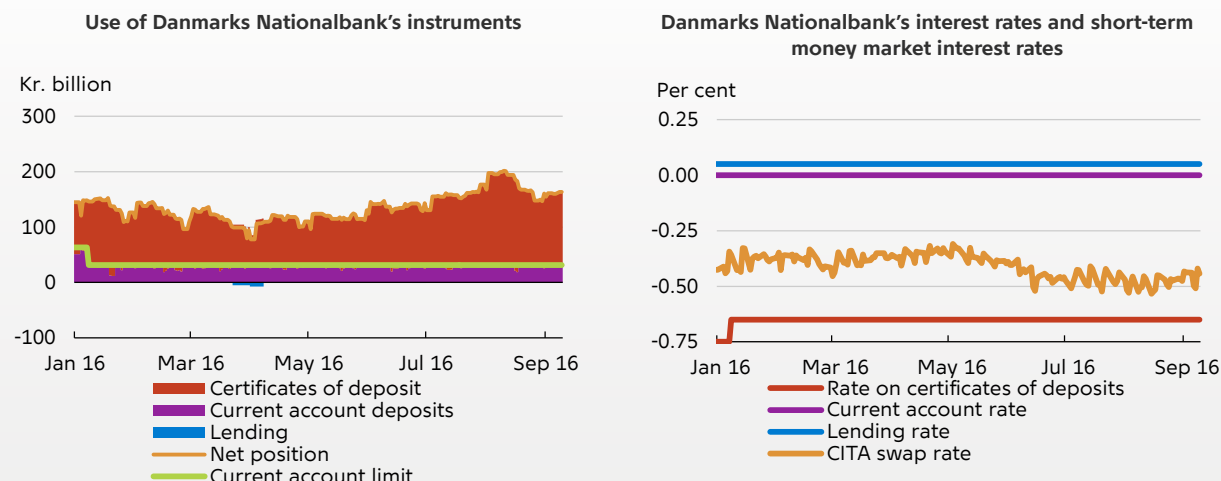
Chart 14



Note: Left-hand chart: Reverse scale. The most recent observation is from 9 September 2016.
Source: Danmarks Nationalbank.

The banks' net position has increased and money market interest rates have declined

Chart 15



Note: The most recent observations are from 9 September 2016. Left-hand chart: The net position is the monetary policy counterparties' total net account in kroner with Danmarks Nationalbank. It is defined as the counterparties' holdings of certificates of deposit and current account deposits less monetary policy loans. Right-hand chart: The CITA swap rate shown has a maturity of 1 month.

Source: Thomson Reuters Datastream and Danmarks Nationalbank.

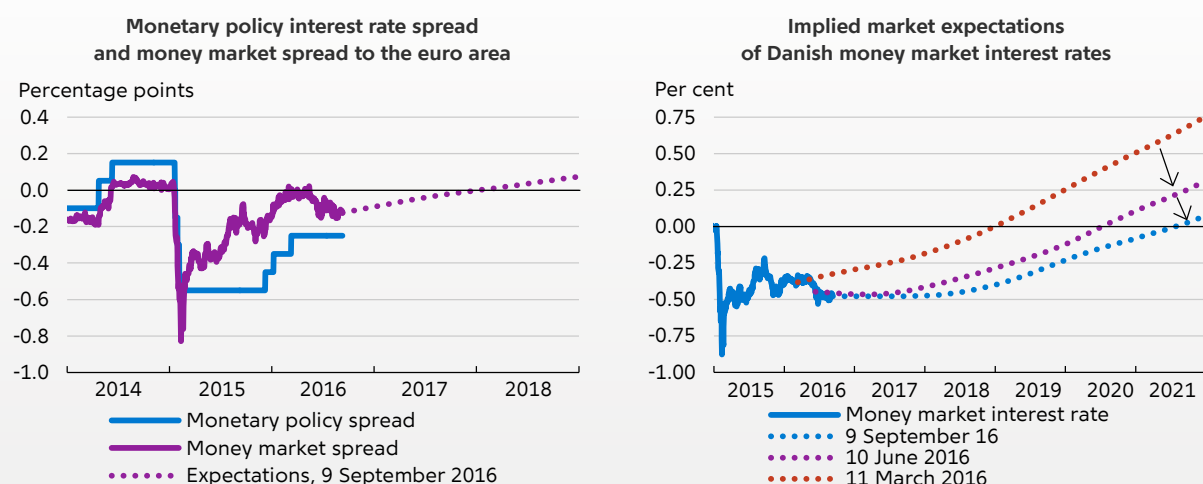
2016, cf. Chart 16 (left). Interest rate expectations, calculated on the basis of current interest rates with longer maturities, indicate that market expectations of further reductions of the ECB policy rate increased in the period up to the UK referendum

on EU membership. Since then, expectations have been virtually unchanged.

Developments in the euro area have also affected expectations regarding Danish money market interest rates. The markets now expect a slower

The markets expect a long period of low interest rates – in Denmark and in the euro area

Chart 16



Note: Left-hand chart: The monetary policy spread is the spread between Danmarks Nationalbank's rate of interest on certificates of deposit and the ECB's deposit rate. The money market spread is based on 3-month CITA and EONIA swap rates. Expectations relate to the money market spread and are based on forward rates calculated on the basis of CITA and EONIA interest rate swaps, respectively. Right-hand chart: The money market interest rate shown is the 3-month CITA swap rate. The broken lines are implied forward rates calculated on the basis of CITA interest rate swaps with different maturities and indicate what the 3-month money market interest rate is expected to be at a given time in the future.

Source: Scanrate Rio, Thomson Reuters Datastream and Danmarks Nationalbank.

increase than they did earlier this year, cf. Chart 16 (right). It is expected to take five years before money market interest rates turn positive.

BOND YIELDS REMAIN VERY LOW

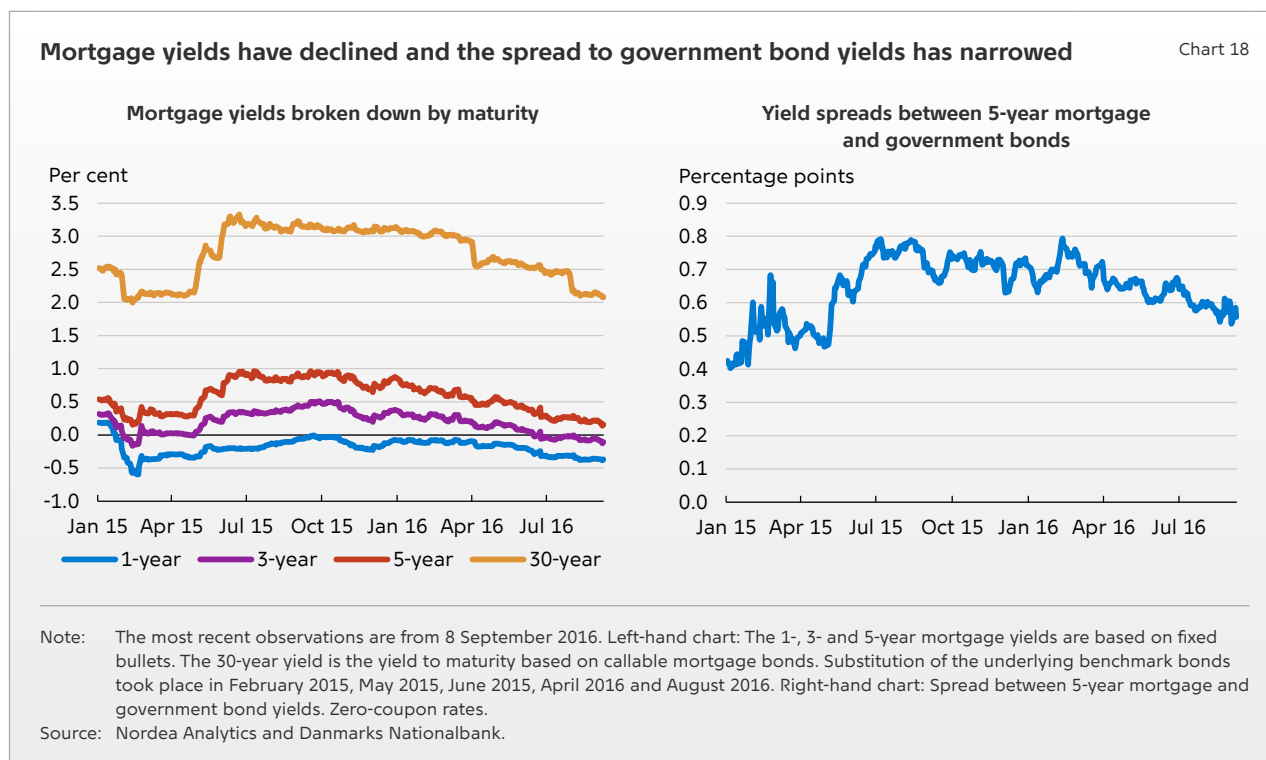
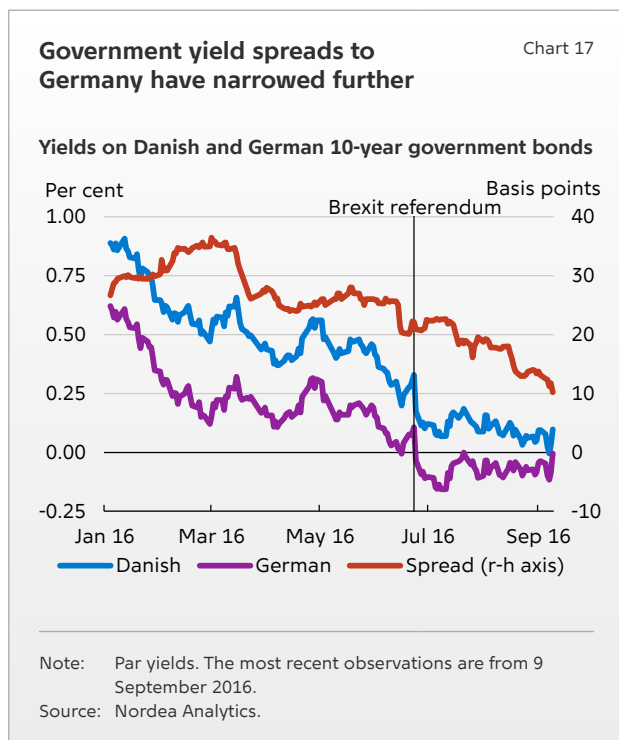
Like the government bond yields in Germany and a number of core euro area member states, Danish government bond yields fell in the weeks

up to and the days after the Brexit referendum. Subsequently, the 10-year Danish government bond yield has remained virtually unchanged, while the corresponding German yield has risen a little, cf. Chart 17. This means that the yield spread to Germany has narrowed further, to just over 10 basis points. Recent months' narrowing of the yield spread is in line with developments in e.g. the Netherlands and Austria.

Over the summer, mortgage yields fell for all maturities, cf. Chart 18 (left). Since the fall was a little stronger than for government bond yields, the spread between mortgage and government bond yields narrowed further, cf. Chart 18 (right).

Recent months' fall in long-term mortgage yields has made it more favourable for households with fixed rate loans to remortgage into loans with lower coupon rates. Prior to the July deadline, fixed rate mortgage loans totalling just under kr. 50 billion were terminated with effect from October. This was more than twice as many as three months earlier, but well below last year's wave of remortgaging, when the average volume at the first three quarters reached almost kr. 100 billion.

In August, the mortgage banks held refinancing auctions for bonds behind the loans with interest rate fixing in October. For the variable rate bonds,



the issuance volume for new bonds matched the volume of bonds maturing, while the degree of refinancing was substantially lower for fixed bullets. The relatively low sales of these bonds should be viewed in the light of a reduction of the spread between short-term and long-term mortgage yields over the last year. Furthermore, several mortgage banks are restructuring their administration margins in the 2nd half of 2016 to give borrowers an incentive to choose loans with amortisation and long fixed interest periods. The strongest increases in administration margins will be seen for loans with fixed interest periods of 1-3 years. Totalkredit's increase of its administration margins from 1 July 2016 meant that the average administration margin for bond-based loans to households rose by 6 basis points from June to July.

The smaller spread between long-term and short-term mortgage yields and the announced increases in administration margins have contributed to a further increase in the average fixed interest period for new lending by mortgage banks over the last quarter. In this segment, the share of fixed rate loans has increased at the expense of loans with shorter fixed interest periods, cf. Chart 19 (left). Especially the outstanding volume of 1-year fixed bullets has been reduced in recent

years. For the first time since their introduction, they now account for less than 10 per cent of the total volume of outstanding mortgage bonds, cf. Chart 19 (right).

INTEREST RATES ON LENDING TO HOUSEHOLDS AND THE CORPORATE SECTOR ARE FALLING SLOWLY

The banks' average interest rates on lending to households and non-financial corporations fell a little over the summer, cf. Chart 20 (left). Overall, lending rates have fallen more or less in line with Danmarks Nationalbank's rate of interest on certificates of deposit since the pressure on the krone in January and February last year.

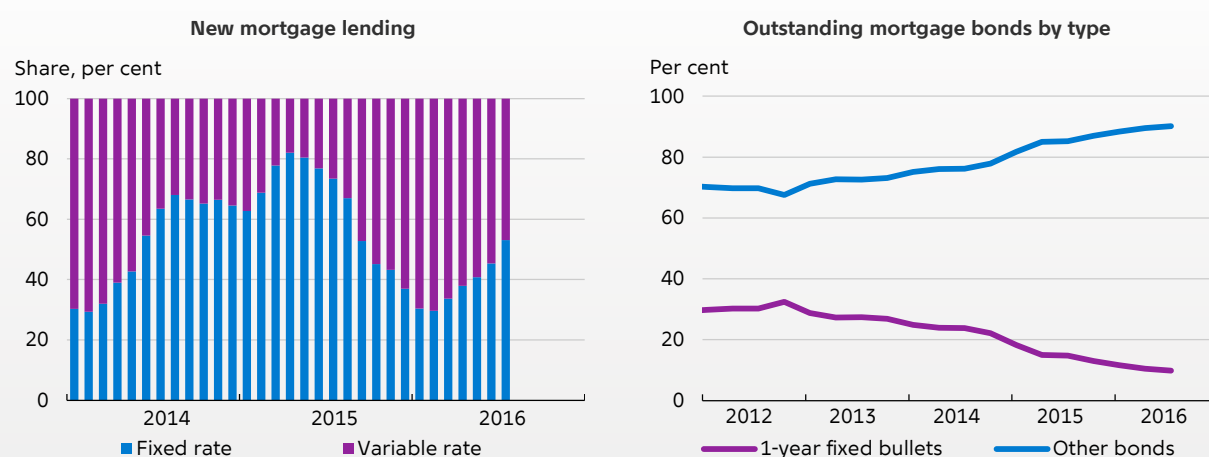
Deposit rates have been virtually unchanged in recent months, cf. Chart 20 (right). For households, average deposit rates remain positive, while they are marginally negative for the corporate sector.

INCREASED LENDING TO THE CORPORATE SECTOR

Lending by banks and mortgage banks to the corporate sector has increased by 2.6 per cent over the last year. This reflects further growth in lending by mortgage banks to the corporate sector, while lending by banks has also risen slightly

The fixed interest period for new mortgage lending continues to increase

Chart 19

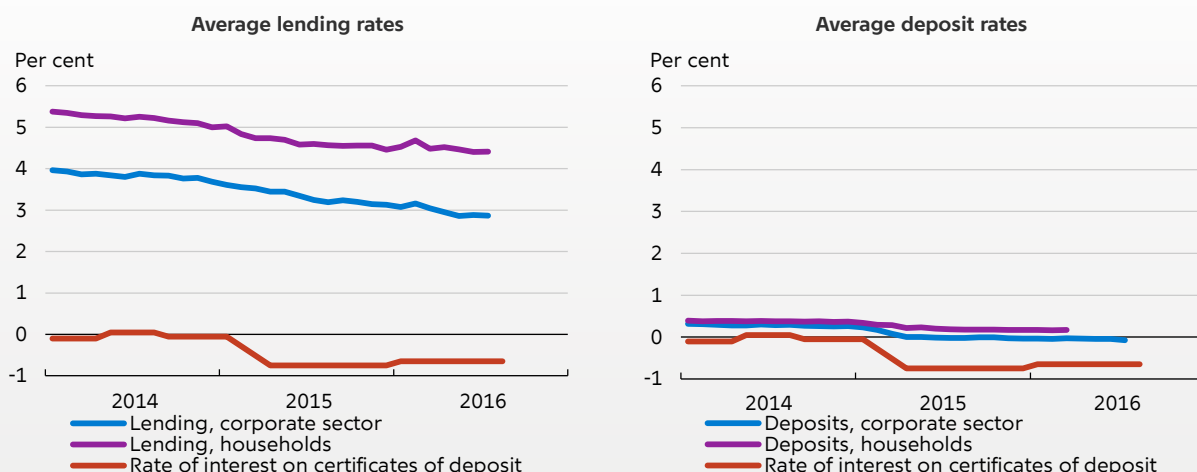


Note: The most recent observations are from July 2016. Left-hand chart: 3-month moving average of new mortgage lending to wage earners, pensioners, etc. The various loan types have been estimated on the basis of their fixed interest periods. "Fixed rate" comprises loans with a fixed interest period of more than 10 years, while "variable rate" comprises loans with a fixed interest period of up to and including 10 years.

Source: Danmarks Nationalbank.

The banks' average lending and deposit rates for households and the corporate sector

Chart 20



Note: Left-hand chart: The most recent observations for average lending rates are from July 2016. Right-hand chart: The most recent observation for deposit rates for the corporate sector is from July 2016. Household deposit rates have been adjusted for lending-related deposits. The most recent observation is from April 2016.

Source: Danmarks Nationalbank.

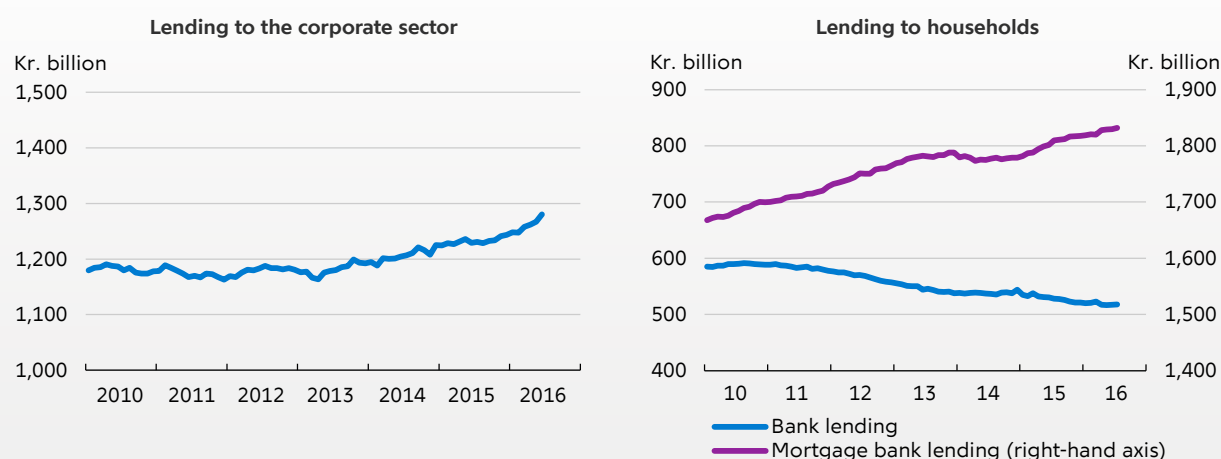
in 2016. Moreover, firms have for some years been increasing their borrowing by issuing corporate bonds. This means that total lending to the corporate sector has grown steadily since 2013, cf. Chart 21 (left). Mortgages remain the households' predominant source of financing, accounting for 78 per cent of total loans.

SLIGHTLY TIGHTER CREDIT STANDARDS FOR HOUSEHOLDS

In the most recent lending survey, both the banks and the mortgage banks stated that they tightened their credit standards for households again in the 2nd quarter of 2016, cf. Chart 22. Especially the mortgage banks also expect to

Lending by banks and mortgage banks to households and the corporate sector

Chart 21

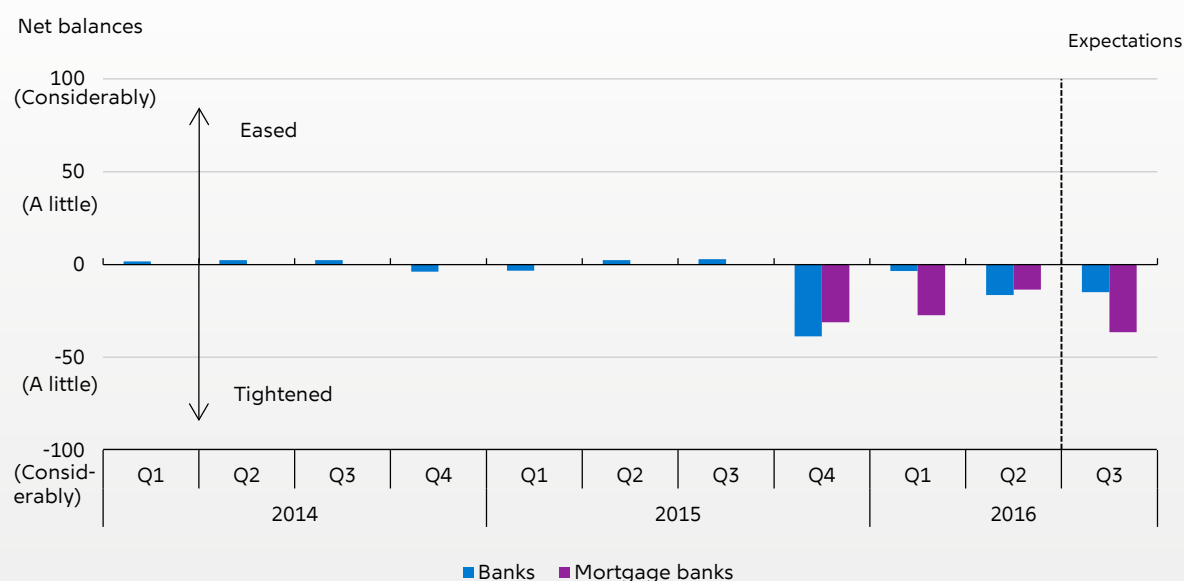


Note: Left-hand chart: Lending and outstanding corporate bonds have been stated at nominal value with seasonal adjustment. Adjustment has been made for the data break resulting from the transition to new MFI statistics in September 2013. The most recent observation is from July 2016.

Source: Danmarks Nationalbank.

Banks' and mortgage banks' credit standards for households have been tightened

Chart 22



Note: The lending survey provides qualitative statistical data based on responses from the largest Danish banks and mortgage banks. The responses are assigned a value of -100, -50, 0, 50 or 100, and the value is weighted according to the institution's share of total lending. Hence, the net balance lies within the interval -100 to 100, a negative figure indicating tightening, a positive figure easing. For example, a net balance of -100 (100) means that all institutions have tightened (eased) their credit standards considerably, while a net balance of -50 (50) means that they have tightened (eased) them a little.

Source: Danmarks Nationalbank.

tighten credit policies in the 3rd quarter. For example, several mortgage banks have increased their administration margins. Credit standards for the corporate sector were eased marginally in the 2nd quarter, and the banks and mortgage banks also expect to ease them a little in the 3rd quarter.

THE DANISH ECONOMY

SHORTAGE OF LABOUR MAY IMPEDE THE UPSWING

The solid recovery in the labour market continued in the 2nd quarter. Overall, employment grew by just under 30,000 in the 1st half of the year. Relative to the preceding quarter, real GDP rose by 0.5 per cent in the 2nd quarter, driven mainly by private consumption and exports of goods, cf. Chart 23 (left) and Table 1.

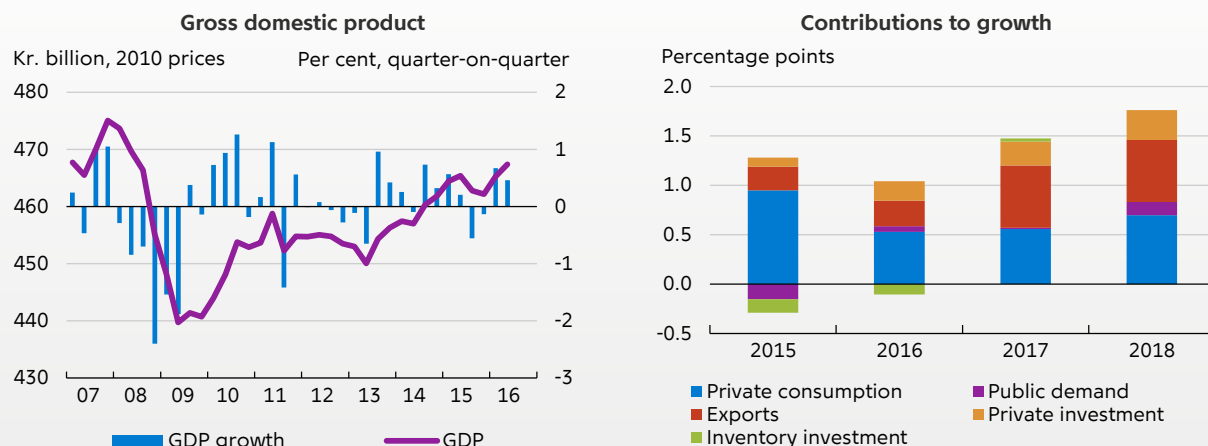
The private sector has strengthened in the year to date, with higher output and robust corporate earnings. This is expected to continue. Following

the UK decision to leave the EU, which will apparently not be implemented until some years down the line, the expected export market growth has been adjusted a little downwards. It is also possible that the propensity to consume and invest will decline slightly. The weakening of the pound has more or less been offset by a strengthening of the dollar and the yen, so that all in all the effective krone rate has risen only moderately, and likewise the downward adjustment of the forecast for future growth in the Danish export markets has been modest. Interest rates have been flat at a low level over the summer, and house prices and disposable income are rising. Hence, there are still strong stimuli that support demand in the Danish economy.

Against this background, growth in real GDP is expected to be 0.9 per cent this year, rising to 1.5 per cent next year and 1.8 per cent in 2018. That is virtually unchanged relative to the June projection. This year's growth is driven mainly by private sector demand, cf. Chart 23 (right). In 2017 and 2018, the largest growth contributions will come from private consumption and exports,

Private consumption is driving growth in 2016

Chart 23



Note: Right-hand chart: Growth contributions have been adjusted for average import content.
Source: Statistics Denmark and Danmarks Nationalbank.

while private sector investment will make a more moderate contribution.

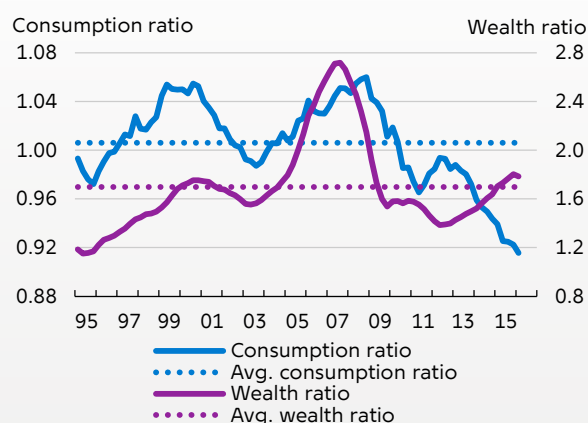
From the 4th quarter of 2012 to the 2nd quarter of 2016, employment rose by 105,000 persons. By the 4th quarter of 2018 it is expected to have risen by a further 50,000. All spare resources in the labour market have already been used, and there are signs of mounting pressures. This is particularly true in the building and construction sector, which is traditionally cyclically sensitive, but recently also in the industrial sector. There is a risk that the upswing will come to an early halt due to shortage of labour. Further growth will have to be driven mainly by productivity growth, which – despite an expected increase over the projection period – is low when compared with growth in previous decades.

Private consumption continued to increase in the 2nd quarter, rising by 0.2 per cent relative to the preceding quarter. Consumer confidence has fallen since the spring, but the underlying drivers of consumption are basically unchanged compared with the previous projection. Disposable income is rising due to higher employment and growth in real wages, and combined with the fall in interest rates over the last year and a positive trend in the housing market this boosts private consumption. Incomes have risen, and consumers have reduced their debt ratios in recent years. Despite recent years' growth in consumption, the consumption ratio remains low relative to its his-

torical average, cf. Chart 24. In the coming years, the consumption ratio will increase a little, but it will still be relatively low at the end of 2018. This year, private consumption is expected to grow by 1.8 per cent, while the forecasts for 2017 and 2018 are 1.7 and 2.0 per cent, respectively.

The consumption ratio is low in a longer perspective

Chart 24



Note: 4-quarter moving averages. Consumption and wealth as percentages of disposable income. Disposable income is household disposable income according to the national accounts. When the wealth and consumption ratios are calculated, disposable income is adjusted for the extraordinary tax payments from restructuring of capital pensions and LD savings (Lønmodtagernes Dyrtidsfond). Wealth is the households' consumption-determining wealth.

Source: Statistics Denmark and Danmarks Nationalbank.

Residential investment increased in the 1st half of 2016, mainly on account of new construction, but major repairs also made a contribution. At the same time, construction costs have risen more sharply than house prices, but in many cases it is still less expensive to build a new house instead of purchasing an existing one. Consequently, residential investment is expected to grow at a moderate pace until 2018.

Business investment has shown a weak trend in recent years. Higher activity levels and low interest rates are predicted to boost investment a little in the coming years. But in view of the UK decision to leave the EU and the resultant uncertainty, business investment is expected to show a more subdued trend than previously forecast.

The projection involves both downside and upside risks. The immediate market response to

the UK decision to leave the EU has been subdued, but the result of the referendum has led to increased uncertainty about what will happen in the next few years when the actual exit terms and conditions are to be negotiated. Although this mainly affects the UK economy, there is general uncertainty about the strength of the international cyclical recovery as growth in many emerging market economies, including China, has slowed down.

On the other hand, especially the low level of interest rates and the low oil prices could have a stronger-than-expected positive effect on the domestic economy. It should also be noted that there is considerable growth potential on the demand side if the households' low consumption ratio and the low corporate investment ratio rise faster than expected.

Key economic variables

Table 1

Real growth on preceding period, per cent	2015/2016						
	2015	2016	2017	2018	Q4	Q1	Q2
GDP	1.0	0.9	1.5	1.8	-0.1	0.7	0.5
Private consumption ¹	2.3	1.8	1.7	2.0	0.5	0.5	0.2
Public consumption	-0.7	0.9	0.5	0.6	-0.6	0.9	1.3
Residential investment	-1.6	3.9	3.6	4.0	1.2	3.5	-0.8
Public investment	-1.1	-3.3	-0.2	-0.9	1.1	-1.5	-1.9
Business investment	2.8	2.2	2.9	3.2	1.6	0.2	-0.3
Inventory investment, etc. ²	-0.3	-0.2	0.1	0.0	-0.2	-0.1	-0.6
Exports	0.3	0.7	3.1	2.7	0.1	0.5	0.8
Industrial exports	0.0	1.9	3.5	3.3	0.3	2.9	0.2
Imports	0.0	1.3	3.4	3.0	0.8	0.2	-0.7
Employment, 1,000 persons	2,796	2,840	2,863	2,882	2,811	2,825	2,840
Gross unemployment, 1,000 persons	123	112	105	101	119	116	113
Balance of payments, per cent of GDP	7.0	5.9	6.1	6.2	6.2	4.5	6.8
Government balance, per cent of GDP	-1.7	-0.9	-1.6	-1.4	-0.7	-2.4	-0.6
House prices, per cent year-on-year	6.1	2.7	3.1	3.1	6.3	3.5	2.4
Consumer prices, per cent year-on-year	0.2	0.3	1.5	1.8	0.2	0.1	-0.1
Hourly wages, per cent year-on-year	1.8	2.2	2.5	2.6	1.9	2.2	2.1

1. Includes both households and non-profit institutions serving households, NPISH.

2. Contribution to GDP growth (this item comprises inventory investment, valuables and statistical discrepancy).

PRICES OF OWNER-OCCUPIED HOMES CONTINUE TO RISE, BUT THE RATE OF INCREASE HAS DECREASED SLIGHTLY

In the 1st half of 2016, the rates of price increase for single-family houses and owner-occupied flats were a little lower than the high rates seen in 2015, cf. chart 25 (left). All the same, prices for owner-occupied flats continue to rise by almost 10 per cent p.a. There are still considerable regional differences. In the 1st quarter, the price of a single-family house in Copenhagen rose by around 7.5 per cent year-on-year, which was twice the national average, cf. the article "House price bubbles and the advantages of stabilising housing taxation" in this Monetary Review.

Turnover, measured by the number of sales registered in the land register, has fallen back after an extraordinary increase in the 1st half of 2015, cf. Chart 25 (right). This is particularly true for owner-occupied flats. Since 2008, turnover has risen, but from a low level. The fall in activity over the last year has been most pronounced in the Copenhagen area, but relative to the housing stock, sales in this area were still some 20 per cent higher than in the other regions.

For some time, there has been a tendency for the supply of single-family houses to decline, but this development seems to have slowed down. The supply of owner-occupied flats remains unchanged.

Developments in prices and trading activity should be viewed in the light of interest rates. Both short-term and long-term mortgage yields have been falling since the 2nd quarter of 2015 and are now back at the same low level as in the first months of 2015, when yields dived in connection with upward pressure on the Danish krone. Looking ahead, the very low yields may contribute to high price increases for some time yet. Combined with enhanced solvency requirements for home buyers, the Danish Financial Supervisory Authority's recommendation that the down payment should constitute at least 5 per cent of the purchase price of a home is expected to dampen these effects a little.

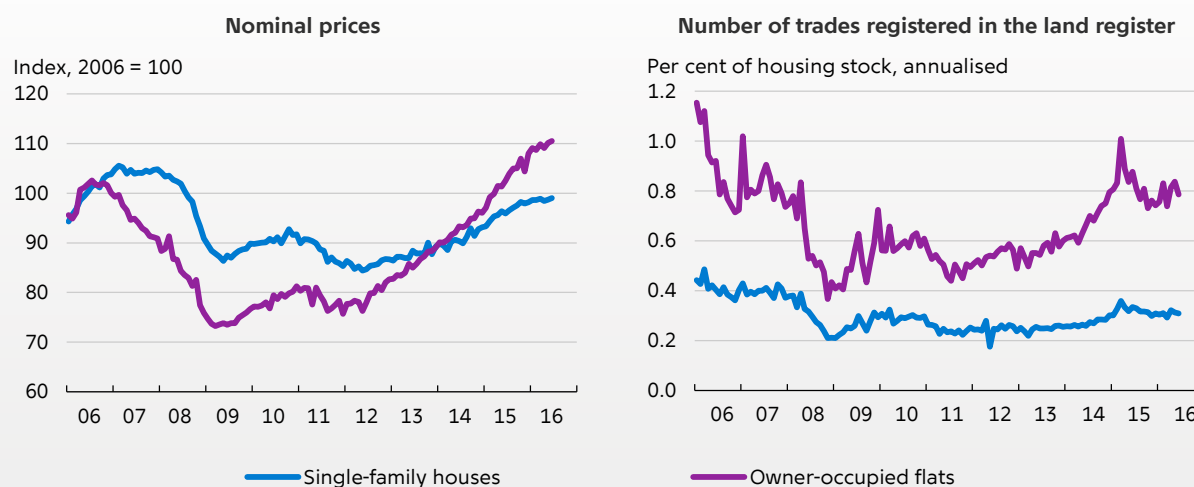
House prices for Denmark overall are forecast to grow by approximately 3 per cent p.a. in 2016 and 2017. The falling interest rates push up prices, as does the general economic recovery. On the other hand, there are areas where there is still a backlog of houses for sale, and this will exert downward pressure on prices in those areas.

HIGHER EXPORTS OF GOODS AND LOWER EXPORTS OF SEA FREIGHT

Exports of goods rose in the first seven months of 2016, while imports fell a little. The rise in exports of goods was mainly attributable to an increase in industrial exports, which – like industrial production and employment – have risen steadily in recent years, cf. Chart 26 (left). Conversely, energy

House prices continue to rise

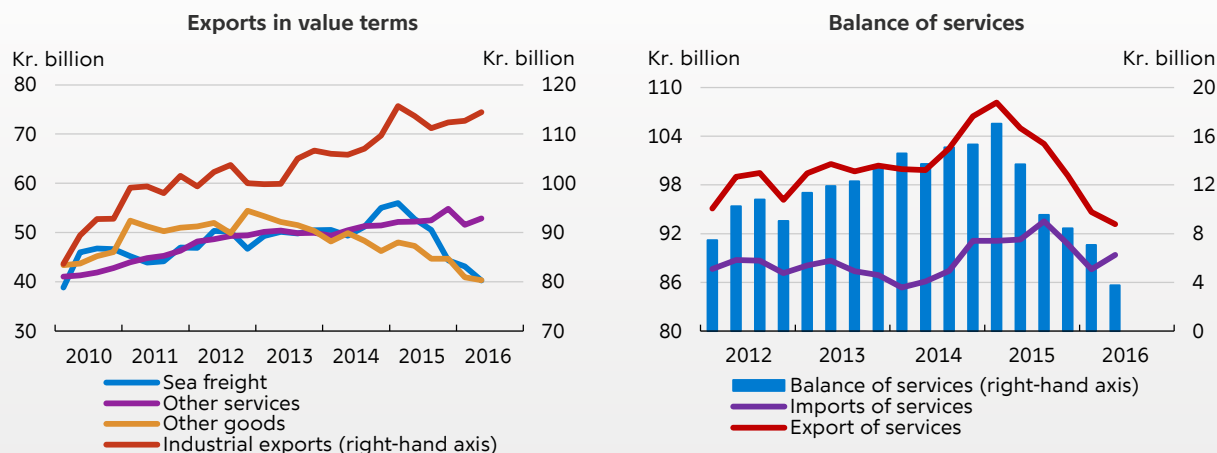
Chart 25



Note: Own seasonal adjustment.
Source: Statistics Denmark and Danmarks Nationalbank.

Decline in exports of sea freight

Chart 26



Source: Statistics Denmark.

exports continue to fall, due to lower prices as well as falling North Sea production. On the services side, exports of sea freight are still declining and have now fallen for five consecutive quarters. This is attributable to weak growth in world trade, which has squeezed freight rates. Imports of services have risen slightly in the year to date, and in the 2nd quarter of 2016 the balance of services showed only a small surplus, cf. Chart 26 (right).

Growth in Denmark's export markets has been adjusted a little downwards relative to the most recent projection, cf. Appendix 1. This is most pronounced for the UK, where some investment decisions may be postponed or cancelled following the decision to leave the EU at some point in the future. Despite the downward adjustment of export market growth, the conditions for increased exports are still in place. For some time, wage increases were lower in Denmark than abroad, but in recent quarters they have been a little higher. The effective exchange rate of the krone has risen recently, but remains around 3 per cent lower than in the 1st half of 2014. Looking ahead, exports are expected to make a solid contribution to GDP growth.

Over the 12-month period up to and including July, the current account surplus was kr. 120 billion – corresponding to 6 per cent of GDP – compared with kr. 150 billion in the preceding 12-month period. This is mainly attributable to trade in services. Large current account surpluses are also expected in the coming years.

PRICE PRESSURES IN THE ECONOMY ARE LOW

Consumer prices are rising only marginally. The annual rate of increase in the EU Harmonised Index of Consumer Prices, HICP, was 0.1 per cent in July after having been negative in the preceding months, cf. Chart 27 (left). Especially energy prices have a downward impact on HICP.

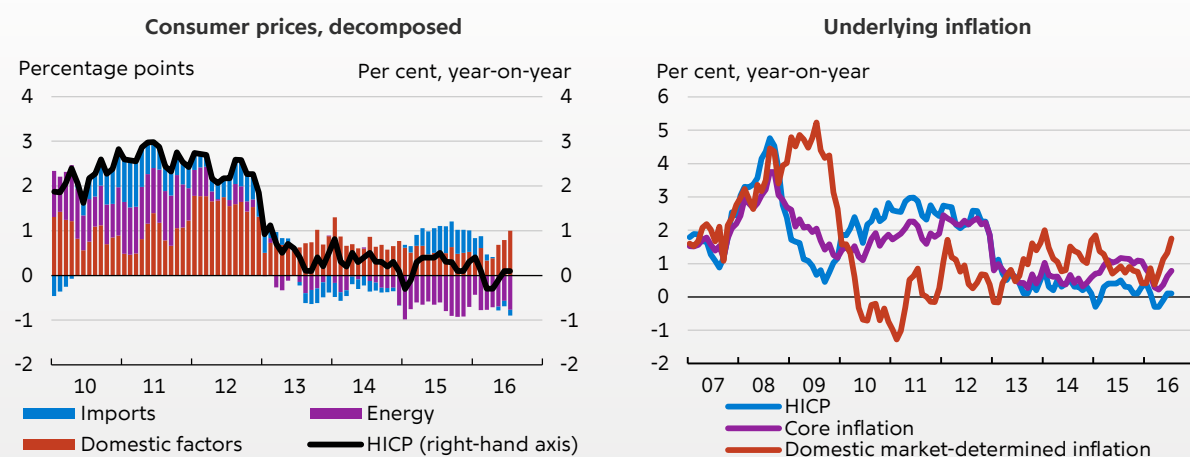
Core inflation, i.e. prices excluding energy and unprocessed food, was 0.8 per cent in July, up from 0.6 per cent in June, cf. chart 27 (right). This means that core inflation is now rising again. In the first months of the year it declined, mainly as a result of lower price inflation for goods since the turn of the year. Prices for services are rising somewhat more.

Consumer prices are developing in line with those of the euro area. For some months, core inflation has been slightly lower in Denmark than in the euro area, but the gap has now narrowed again. This is mainly because prices for services have risen a little more in Denmark than in the euro area recently.

Import prices have fallen over the last half year, partly because the effective exchange rate of the krone has risen. This has led to an increase in domestic market-determined inflation, IMI, to around 1.8 per cent year-on-year in July. In the long term, IMI is determined by developments in the level of costs in the economy, including wages, but in the short term it often moves in the opposite direction of import prices. The reason is that lower import prices are not immediately

Consumer prices are rising only slightly

Chart 27



Note: EU Harmonised Index of Consumer Prices, HICP. Right-hand chart: Core inflation is consumer prices excluding energy and unprocessed food.

Source: Statistics Denmark and Danmarks Nationalbank.

Consumer prices

Table 2

		2016									
Per cent, year-on-year	Weights ¹	2015	2016	2017	2018	Q2	Q3	Q4	Jul.	Aug.	Sept.
HICP		0.2	0.3	1.5	1.8	-0.1	0.3	0.7	0.1	0.4	0.5
Index of net retail prices	100.0	0.7	0.6	1.7	2.0	0.4	0.7	0.9	0.5	0.8	0.7
Exogenous:											
Energy	6.9	-9.9	-7.0	2.9	3.8	-8.5	-7.7	-3.4	-9.9	-7.4	-5.4
Unprocessed food	4.8	2.6	1.5	1.1	1.4	2.0	1.1	0.7	1.6	1.9	-0.2
Adm. prices	4.1	0.9	2.1	2.7	2.7	2.1	1.9	2.2	2.0	1.9	1.8
Rent	26.0	2.1	2.1	2.0	2.5	2.2	2.1	1.9	2.2	2.2	2.1
Excl. exogenous:	58.2	1.3	0.7	1.5	1.6	0.7	0.5	0.8	1.0	1.0	0.9
Imports	18.7	2.4	0.1	1.0	1.3	-0.3	-0.6	-0.3	-0.6	-0.7	-0.6
IMI	39.5	1.0	1.2	1.8	1.7	1.1	1.6	1.5	1.8	1.8	1.6

Note: The most recent actual figures at the time of forecasting were from July 2016.

¹ Weight in the index of net retail prices, per cent. The weights are from January 2016.

passed on to consumers, but are initially reflected in higher profit margins in the retail link.

Wholesale prices excluding energy were slightly lower in July than one year earlier, dragged down by falling import prices. This means that aggregate price pressures from the wholesale link are low. Producer prices for Danish goods for the domestic market also continue to show a weak trend.

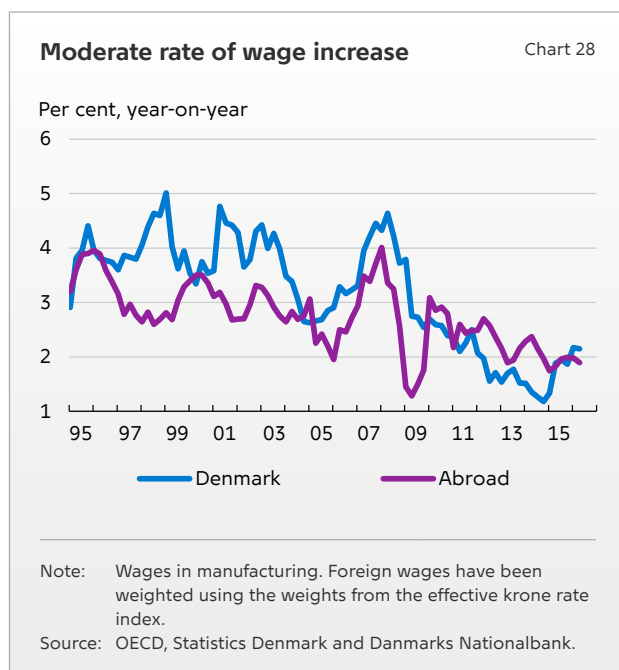
The low price of oil exerts downward pressure on consumer price inflation in 2016. The rate of increase in HICP is forecast at 0.3 per cent this year, rising to 1.5 and 1.8 per cent in 2017 and 2018, respectively, cf. Table 2. This is because the pass-through to HICP from the low oil prices will cease to apply, and at the same time capacity pressures in the economy will increase.

MODERATE RATE OF WAGE INCREASE

Private sector wage growth remains relatively low. According to Statistics Denmark, wages in the private sector were 1.8 per cent higher in the 2nd quarter of 2016 than one year earlier. The highest increases are seen in some of the sectors targeting the domestic market, i.e. certain service sectors as well as building and construction. In the industrial sector, which exports a large share of its output, wages increased by 2.1 per cent in the 2nd quarter.

When wages are rising while consumer prices remain unchanged, most people will experience solid growth in real wages. This will continue in the coming years, as wage growth in the manufacturing industries is expected to be around 2.5 per cent. At the same time, moderate wage growth in Denmark has helped to improve competitiveness in recent years. But in the first two quarters of 2016, industrial wages rose a little more in Denmark than abroad, cf. Chart 28.

Public sector wage growth remains moderate. It is affected by developments since 2008, when wages for a while rose at a faster pace in the public sector than in the private sector. However, in the long term, public sector wages are regulated so that they move in parallel with private sector wages. This means that public sector wage growth can be expected to be relatively low in the coming years.



MOUNTING PRESSURES IN THE LABOUR MARKET

The labour market continues to improve, with rising employment and falling unemployment, cf. Chart 29 (left). According to the national accounts, employment rose by 14,500 in the 2nd quarter of 2016. This is the 14th consecutive quarter with rising employment, and altogether 105,000 more people have found work since the 4th quarter of 2012. Growth in employment has taken place in the private sector only and is broad-based across industries, but has been most pronounced within service industries and in building and construction. Unemployment has been steadily declining in this period, to 4.2 per cent of the labour force in July. Unemployment is now close to its structural level of around 110,000 persons and by the end of the projection period it will have fallen below this level.

Indicators of future developments in employment, including new job advertisements and industrial employment expectations, point to a further increase in employment in the 3rd quarter, and the mounting capacity pressures in the labour market are becoming still more evident, cf. Chart 29 (right). The indicators of labour shortage have risen, especially in the building and construction sector and in industry. The shortage is broadly distributed across industries. A higher wage ratio in 2015 and 2016 to date also indicates mounting pressures in the labour market.

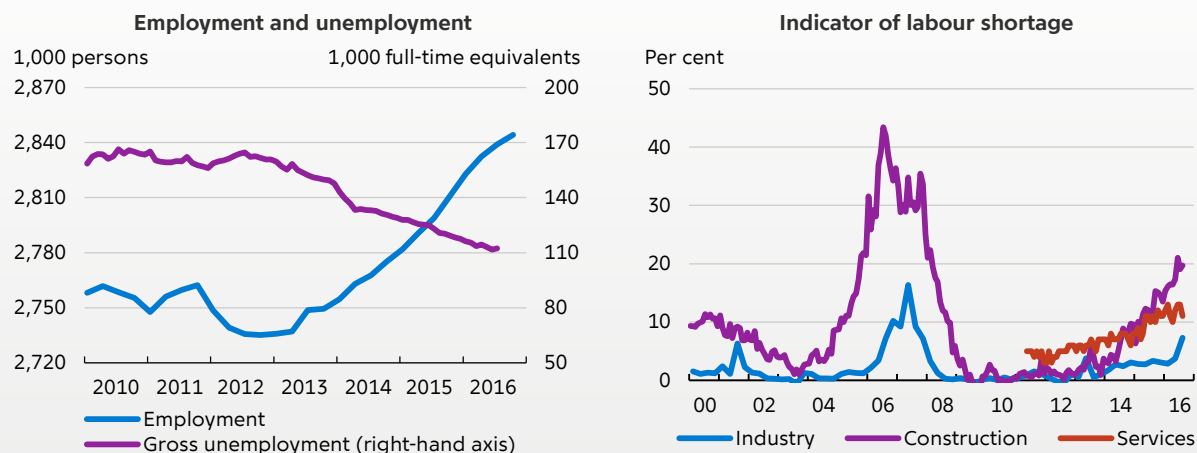
The labour market gap, which indicates how much more employment can rise without causing inflationary pressures in the economy, is currently estimated to be well below the predicted rise in employment, i.e. 50,000 people, from the 2nd quarter of 2016 to the end of 2018. Hence, much of the increase in employment must come from people within the labour force who postpone retirement, from people currently outside the labour market or from abroad. The projection assumes that the structural labour force will rise in the coming years, reflecting measures such as the retirement reform from 2011, which will increase the participation rate in the older age groups.

IMPROVED PUBLIC FINANCES

Public consumption is expected to rise by 0.9 per cent in 2016, 0.5 per cent in 2017 and 0.6 per cent in 2018. Growth in public consumption should be viewed against the backdrop of factors such as an

Signs that the labour market is tightening

Chart 29



ageing population. According to the Ministry of Finance, the underlying pressure on public expenditure resulting from demographic change will amount to 0.6 per cent p.a. towards 2020.

For some years since the financial crisis in 2008, public investment as a share of GDP has been high and there have been repeated budget overruns. The government has announced that it will reduce investment to a more normal level in a long-term perspective. Hence, public investment is expected to fall towards 2018.

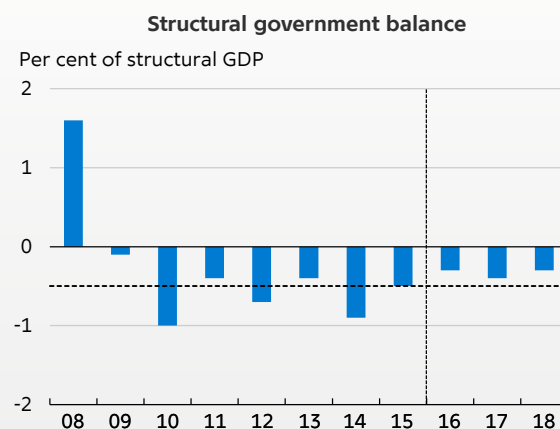
The outlook for government finances this year has improved notably since the June projection, and the deficit is now forecast at 0.9 per cent of GDP. One of the reasons is that the most recent fall in interest rates has led to much higher revenue from pension yield tax than predicted. At the same time, revenue from income taxes has been adjusted upwards.

The improved economic situation will result in a cyclical improvement of government finances in the coming years. But as revenue from pension yield tax is expected to normalise from an extraordinarily high level, the deficit will increase to 1.6 per cent of GDP in 2017 and then shrink to 1.4 per cent of GDP in 2018.

In the Economic Survey from August, the government forecasts the structural government deficit at 0.3 per cent of GDP this year, cf. Chart 30. The 2025 plan operates with postponement of the

Slight tightening of fiscal policy in the coming years

Chart 30



planned fiscal policy tightening so that structural balance is not achieved until 2024.

ECONOMIC POLICY

Signs of growth in the private sector have become increasingly visible in recent months, and there are still more indications that the labour

market is tightening. Unemployment is close to its cyclically neutral level, and it is uncertain whether it will be possible to meet the demand for labour in the short term. Previous reforms have been successful in making people stay in the labour market for longer, while it is a greater challenge to get people currently outside the labour market into the labour market. Foreign labour can contribute to reducing bottlenecks, as was the case during the previous upswing in the mid-2000s. There is a risk that the upswing will come to an early halt due to shortage of labour.

With its proposed 2025 plan, the Danish government seeks to strengthen the growth potential of the Danish economy. This is welcome. From the point of view of Danmarks Nationalbank, three core issues should be addressed: strengthening the automatic stabilisers in the economy by introducing more appropriate housing taxes, increasing the supply of labour and ensuring that fiscal policy is aligned with the cyclical position.

In order to avoid a repetition of the strong fluctuations in the economy seen in the 2000s, it is important that housing taxes will once again have

a stabilising effect, cf. the article "House price bubbles and the advantages of stabilising housing taxation" in this Monetary Review. Hence it is necessary to restore the link between house prices and housing taxes. That will ensure a steadier trend in house prices, thereby strengthening macroeconomic and financial stability. If the automatic stabilisers are strengthened, this will reduce the cyclically determined fiscal policy requirements.

Fiscal policy should also be tightened gradually in the coming years with a view to ensuring stable growth in the economy. According to the 2025 plan, the structural government budget balance will not reach equilibrium until 2024, whereas the target has been 2020 so far. Consequently, the economy will not be in equilibrium until long after it has reached a cyclically neutral level and the output gap has closed. This entails an increased risk that a strong upswing will lead to overheating and economic imbalances, and it may be necessary to take measures to prevent this. And conversely, in the event of a downturn, it will be more difficult to support the economy via expansionary fiscal policy.

APPENDIX 1: ASSUMPTIONS IN THE PROJECTION FOR THE DANISH ECONOMY

The projection has been prepared using the macroeconomic model MONA² and is based on the available economic statistics, including Statistics Denmark's preliminary quarterly national accounts for the 2nd quarter of 2016. The projection involves a number of assumptions concerning the international economy, financial conditions and fiscal policy.

THE INTERNATIONAL ECONOMY

In the advanced economies, the labour markets are still improving, while output is rising at a more moderate pace. Growth is being driven by a

robust increase in private consumption, which is supported by higher employment, low oil prices and very low interest rates. The international organisations expect the decision to leave the EU to have a dampening effect on the UK economy, while the impact on the growth outlook for the rest of the world will be modest.

The UK decision to leave the EU has slightly reduced expected growth in Denmark's export markets. On the other hand, export market growth exceeded expectations in the 2nd quarter of 2016. Overall, growth in the markets for Danish industrial exports is predicted to be 3.2 per cent this year, 4.0 per cent in 2017 and 4.1 per cent in 2018, cf. Table 3.

Foreign wage growth is expected to be modest as labour markets are still weak – but improving.

Overview of projection assumptions

Table 3

	2015	2016	2017	2018
International economy:				
Export market growth, per cent year-on-year	3.8	3.2	4.0	4.1
Export market price ¹ , per cent year-on-year	-2.7	-1.2	1.6	1.5
Foreign price ² , per cent year-on-year	-2.7	-1.2	1.6	1.5
Foreign hourly wages, per cent year-on-year	1.9	1.9	2.2	2.5
Financial conditions, etc.:				
3-month money market interest rate, per cent p.a.	-0.4	-0.4	-0.5	-0.5
Average bond yield, per cent p.a.	1.0	0.8	0.8	0.9
Effective krone rate, 1980 = 100	99.2	100.8	101.2	101.2
Dollar exchange rate, DKK per USD	6.7	6.7	6.6	6.6
Oil price, Brent, USD per barrel	52.4	43.1	49.5	52.3
Fiscal policy:				
Public consumption, per cent year-on-year	-0.7	0.9	0.5	0.6
Public investment, per cent year-on-year	-1.1	-3.3	-0.2	-0.9
Public sector employment, 1,000 persons	815	811	813	817

1. Weighted import price for all countries to which Denmark exports.

2. Weighted export price for all countries from which Denmark imports.

2 The model is described in Danmarks Nationalbank, *MONA – a quarterly model of the Danish economy*, 2003.

The fall in oil prices will contribute to weak price developments among most of Denmark's key trading partners in 2016. Moderate foreign price increases are expected next year and in 2018.

INTEREST RATES, EXCHANGE RATES AND OIL PRICES

Developments in short-term and long-term interest rates in the projection are based on the expectations of future developments that can be derived from the interest rate curves in the financial markets. Throughout the projection period, the 3-month money market interest rate, measured by the CITA swap rate, is expected to be negative.

The average bond yield is an average of the yields to maturity on outstanding government and mortgage bonds. It is expected to rise slightly over the projection period, from 0.6 per cent initially to 1.0 per cent by the end of 2018.

Following the UK referendum on 23 June, the pound has depreciated substantially. Viewed in isolation, this strengthens the effective exchange rate of the krone. On the other hand, a lower dol-

lar rate has reduced the increase in the effective krone rate. In the projection, the effective krone rate and the dollar rate are assumed to remain constant at the current level.

In early September 2016, the price of oil was around 46 dollars per barrel. The oil price is assumed to develop in line with futures prices, rising to around 52 dollars towards the end of 2018. This is a small downward adjustment compared with the most recent projection.

FISCAL ASSUMPTIONS

The projection is based on preliminary national accounts data on public sector consumption and investment, the planned fiscal policy in the Economic Survey from August 2016 and the draft Finance Bill for 2017, and the government's proposal for a 2025 plan.

Real public consumption is assumed to rise by 0.9 per cent this year and by 0.5 and 0.6 per cent in 2017 and 2018, respectively, while public investment is assumed to fall by 3.3 per cent this year and by a further 0.2 and 0.9 per cent in 2017 and 2018, respectively, cf. Table 3.

APPENDIX 2: REVISIONS IN RELATION TO THE PREVIOUS PROJECTION

The GDP growth forecast for Denmark is virtually unchanged relative to the last projection. For 2016 and 2017, GDP growth has been adjusted downwards by 0.1 percentage point, primarily as a result of the UK referendum on leaving the EU. Slightly lower export market growth, a higher effective exchange rate of the krone and an assumption that Danish households and firms will be more hesitant to spend point to lower consumption, business investment and exports. This is to some extent offset by lower interest rates, which will boost domestic private sector demand. The HICP growth forecast is virtually unchanged relative to the last projection. Lower oil prices than in the June projection have a downward impact in 2016 and 2017, while an extraordinarily high increase in domestic market-determined inflation in July pushes up HICP inflation in 2016 and 2017.

Revisions in relation to the previous projection

Table 4

Per cent, year-on-year	GDP			Consumer prices, HICP		
	2016	2017	2018	2016	2017	2018
Projection, June 2016	1.0	1.6	1.8	0.3	1.5	1.7
Contribution to revised forecast from:						
Export market growth	0.0	0.0	0.0	0.0	0.0	0.0
Interest rates	0.0	0.1	0.1	0.0	0.0	0.0
Exchange rates	0.0	-0.1	0.0	0.0	0.0	0.0
Oil prices	0.0	0.0	0.0	-0.1	-0.1	0.0
Other factors	-0.1	0.0	-0.1	0.1	0.1	0.1
This projection	0.9	1.5	1.8	0.3	1.5	1.8

Note: The transition from the previous to this projection may not add up due to rounding. "Other factors" includes data revisions.

ARTICLES

HOUSE PRICE BUBBLES AND THE ADVANTAGES OF STABILISING HOUSING TAXATION

Asbjørn Klein, Financial Stability, and Simon Juul Hviid, Tina Saaby Hvolbøl, Paul Lassenius Kramp and Erik Haller Pedersen, Economics and Monetary Policy

INTRODUCTION AND SUMMARY

The housing market has been growing over the last three or four years after the strong downturn in the wake of the housing bubble in the mid-2000s. The price increases are supported by historically low interest rates and rising incomes. Thus, home buyers today spend roughly the same percentage of their income on housing as home buyers did in 2012. Moreover, homeowners have seen their home equity rise and their debt-to-home-value ratio decline. At the national level, house price developments appear sustainable, i.e. house prices are reflecting underlying economic fundamentals, especially incomes and interest rate levels. However, interest rates are exceptionally low, and both households and banks should factor in higher interest rates for new loans in the longer term. It is important that loans are not granted based on over-optimistic assumptions, and a continued reduction of the debt ratio will make both the individual homeowner's finances and the economy more robust.

There is wide regional variation. Developments in the Copenhagen housing market, in particular, give cause for concern. Prices of single-family houses as well as owner-occupied flats have increased substantially more in Copenhagen than in the rest of the country. It cannot be ruled out entirely that the price growth is the result of higher incomes and lower interest rates. However, prices may be pushed up by speculative purchases, entailing that prices do not exclusively reflect underlying economic fundamentals. Price increases alone indicate that house price growth in

Copenhagen is unsustainable, which was also the case when the house price bubble was building in the mid-2000s. The Copenhagen housing market is also more vulnerable to sudden interest rate rises than the rest of the country. The combination of high interest rate sensitivity and house price growth that is already on the verge of becoming unsustainable, increases the risk that even small, sudden interest rate increases could trigger price falls.

Fluctuations in house prices and regional disparities in house price growth can be reduced by efficient housing taxation. At the same time, housing taxes are less distorting than other taxes, and thus less inhibiting to economic growth. Housing taxation in Denmark consists of two separate taxes: property value tax and property tax (land tax). Until the introduction of the tax freeze in 2001, taxes paid followed the value of the entire home and the isolated land value, respectively, whereby housing taxes dampened house price fluctuations. The nominal freeze on property value taxes and, to a lesser extent, the cap on the increase in land tax have eliminated the stabilising effect of housing taxation. This causes greater fluctuations in house prices – leading to stronger macroeconomic volatility and less financial stability – and means that a larger share of the total tax revenue must be collected through other, more distorting, taxes. Moreover, the freeze on property value taxes has resulted in large regional differences in the effective tax rate to the effect that areas with expensive housing now benefit from the lowest rate.

It is important that housing taxes regain their position as economic stabilisers by ensuring that taxes reflect the value of house prices. That will reduce the risk of a recurrence of the strong fluctuations in the economy seen in the 2000s.

ARE HOUSE PRICES TOO HIGH?

Since 2012, house prices in Denmark have grown strongly, both for single-family houses and owner-occupied flats. Nominal prices of single-family houses are approximately 6 per cent below the 2007 peak, cf. Chart 1 (left), and, at the same time, sales have increased, albeit from a low level, cf. Chart 1 (right). For owner-occupied flats, which are widely concentrated in the large towns and cities, prices are currently somewhat above their 2006 peak, sales are nearing the 2006 level, and price growth has been consistently very high for the past three or four years. This raises the question of whether house prices, or possibly prices in some segments of the housing market, are currently too high in the sense that they do not reflect fundamental drivers or that there is a risk of a future sharp drop in prices.

WHAT DETERMINES HOUSE PRICES?

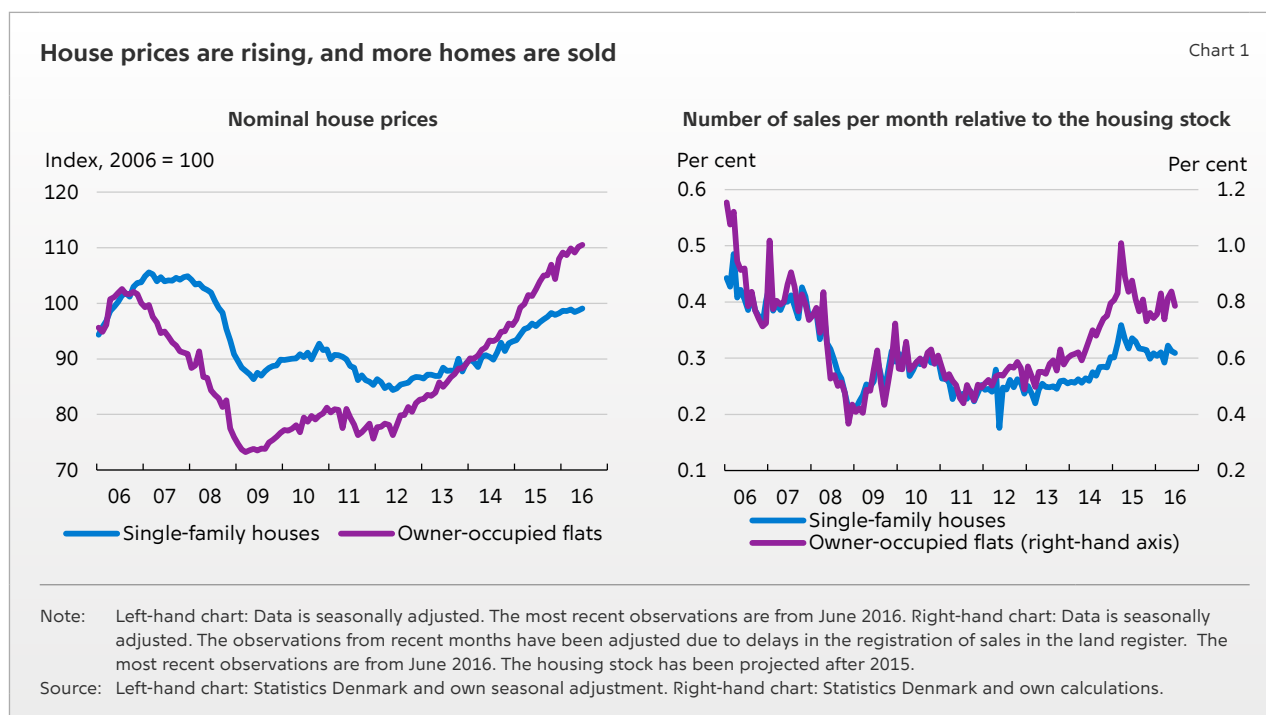
To assess whether house prices are too high, it is necessary to look at the underlying factors. The

housing supply is fixed in the short term, but may gradually adjust in the longer term. Thus, in the short term, demand is a key determinant of house prices.

Demand

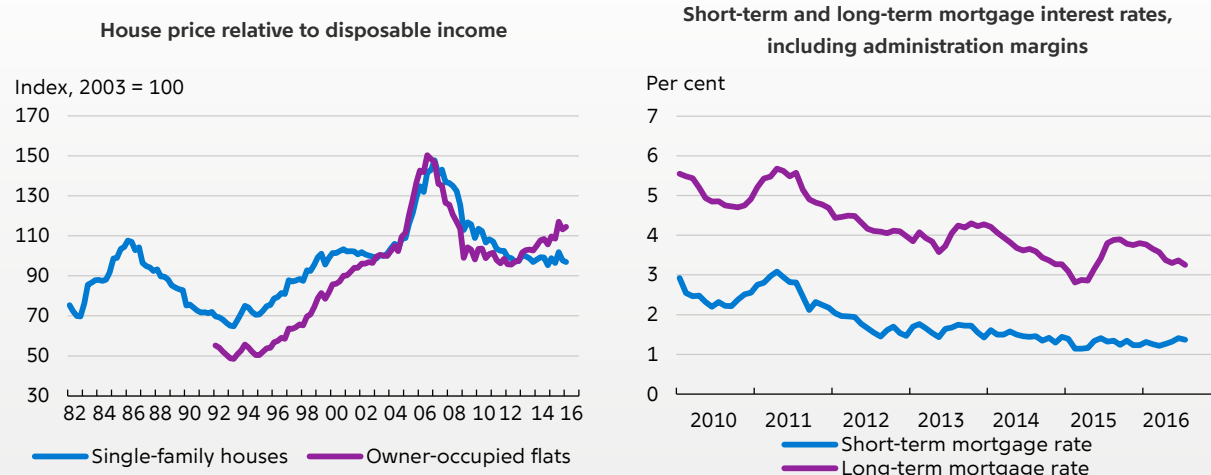
Household demand for housing is determined by a number of factors. Household income is a key determinant. The house price-to-income ratio can be used as a simple measure of whether house prices are high or low. In the 1990s, prices of owner-occupied flats as well as single-family houses grew faster than household disposable incomes. Subsequently, the ratio has been stable, except during the years of the housing bubble, cf. Chart 2 (left). Over the last couple of years, the ratio between house prices and household disposable income has picked up for owner-occupied flats, located mainly in large towns and cities. Currently, the ratio is 33 and 27 per cent, respectively, lower than at the peak in 2006-07.

Household housing demand is also impacted by current expenses of homeownership. Interest rates are key determinants of these expenses. Lower interest rates mean that, for a given income, home buyers can afford a more expensive home. Thus, the price-income ratio may increase when interest rates decrease. Both long-term and short-term mortgage interest rates have dropped further since 2011 after the interest rate falls of the



The price-income ratio for flats is increasing, but mortgage rates are decreasing

Chart 2



Note: Data is seasonally adjusted. The most recent observation for the price-income ratio is from the 1st quarter of 2016. Household disposable income has been used and adjusted for restructuring of capital pensions and LD savings (Lønmodtagernes Dyrtdsfond), in 2013-15. For mortgage rates, the most recent observations are from July 2016. Mortgage rates include administration margins and cover loans to the household sector in Denmark. The short-term mortgage rate covers loans with maturity of up to 10 years and the long-term mortgage rate covers loans with maturity of more than 10 years.

Source: Statistics Denmark, Danmarks Nationalbank and own calculations.

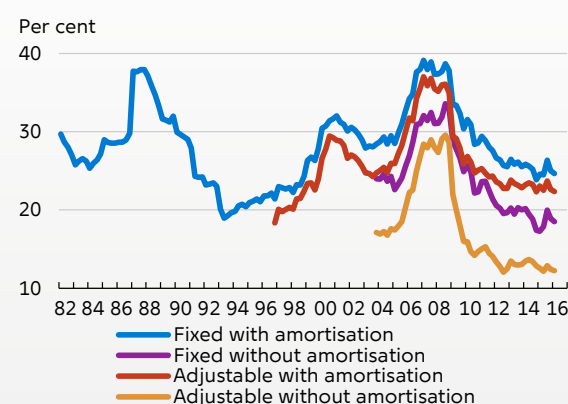
previous decades, cf. Chart 2 (right). Since early 2015, short-term mortgage rate, calculated excluding administration margins, have been negative. At the same time, administration margins, especially for housing loans with short fixed-interest periods, have increased, entailing that the actual effective interest rates paid by homeowners have decreased less than the yields on mortgage bonds.

In addition to interest rates, other costs are also associated with homeownership, for instance property taxes. The housing burden is a measure of the total first-year payment for buying a home relative to average household disposable income, see Dam et al. (2011). Thus, it provides a better measure of whether house prices are high or low than the simple price-income ratio. The housing burden for single-family houses, based on a fixed-rate loan with amortisation, is currently below the average of the last 20 years, due, inter alia, to low interest rates, cf. Chart 3. If amortisation is not included in the calculation of the housing burden, the level is lower still. Note, however, that the credit rating of households is based on the premise that they must have the ability to amortise the loan.

The level of the housing burden indicates that there is potential for a further increase in the demand pressure on house prices. Relative to the

Housing burden for single-family houses is relatively low

Chart 3

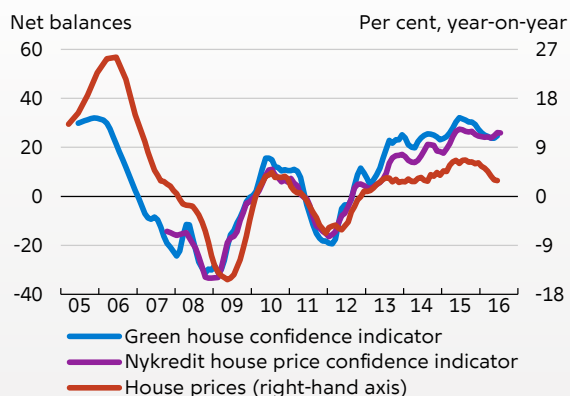


Note: The most recent observations are from the 1st quarter of 2016. The housing burden indicates the stylised financing costs, including administration margins, brokerage fees and housing taxes when buying a 140 sq.m single-family house as a percentage of the average disposable household income. The financing costs are based on the loan type stated plus a bank loan for the share of the purchase price that cannot be financed by a mortgage loan. See Dam et al. (2011) for a more detailed description.

Source: Statistics Denmark, Housing market statistics, Realkredit Danmark, Skat (Danish tax authorities) and own calculations.

2007 peak, the housing burden is currently 14 percentage points lower for a fixed-rate loan with amortisation.

Households expect house prices to rise Chart 4



Note: The most recent observations for Nykredits Huspristillid (Nykredit house price confidence indicator) are from July 2016, while the most recent observations for Greens huspristillidsindikator (Green's house price confidence indicator) are from June 2016. The Green house confidence indicator is scaled by a factor of 0.5, and 3-month moving averages are used. House prices are Statistics Denmark's price index for single-family houses.

Source: Nykredit, Greens Analyseinstitut, Statistics Denmark and own calculations.

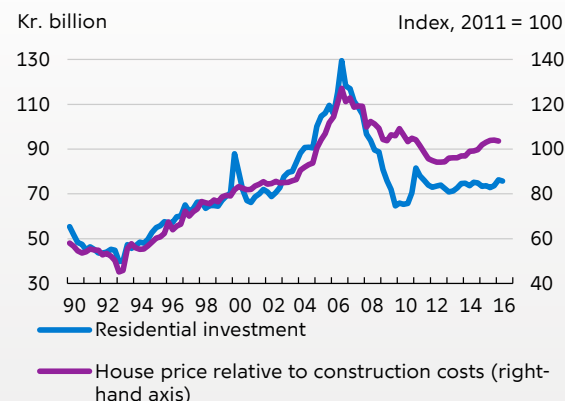
A home is a consumer durable which provides a current return and, at the same time, represents the largest investment that most households ever make. Therefore, expectations of housing market developments affect households' willingness to pay and thus price developments. Both Greens huspristillidsindikator (Green's house price confidence indicator) and Nykredits Huspristillid (Nykredit house price confidence indicator) are at high levels, cf. Chart 4. This indicates that home buyers expect prices to continue rising.

Supply

Residential investment, and thus an expansion of the housing supply, is determined, among other factors, by the relationship between the costs of building a home and the price at which the home can later be sold. The house-price-to-construction-cost ratio has grown since 2012, cf. Chart 5. The rise seen in recent years indicates that residential investment will increase, given that house prices have risen more than construction costs.

Until 2006, the scope of construction expanded sharply, both construction for which a building permit had been issued and construction starts, cf. Chart 6. Some time elapses from start to completion of a construction project. In 2007-09, this

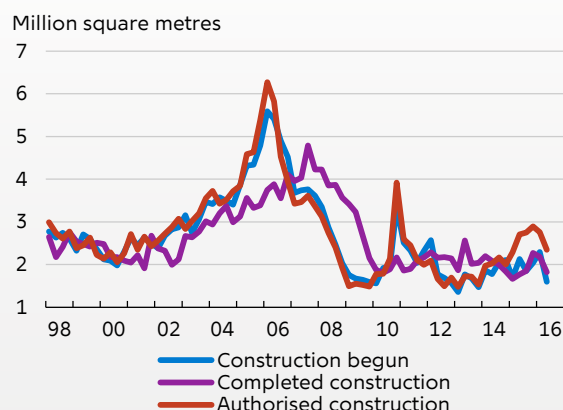
Construction costs and investment Chart 5



Note: Data is seasonally adjusted. The most recent observations are from the 2nd quarter of 2016 for residential investment and the 1st quarter of 2016 for house price relative to construction costs.

Source: Statistics Denmark and own calculations.

Residential construction at the national level, annualised Chart 6



Note: The most recent observations are from the 2nd quarter of 2016. Quarterly figures have been scaled up to an annual level (multiplied by four). The most recently published observations are typically subject to considerable uncertainty.

Source: Statistics Denmark and own seasonal adjustment.

meant that although house prices were decreasing, many construction projects were completed, which caused house prices to drop even further. This impact was strongest in and around the cities where most new construction took place. At the national level, the construction activity indicators remain low relative to the boom in 2005-07. New construction employment has been growing since 2014, but remains at a relatively low level compared with the years before the housing bubble.

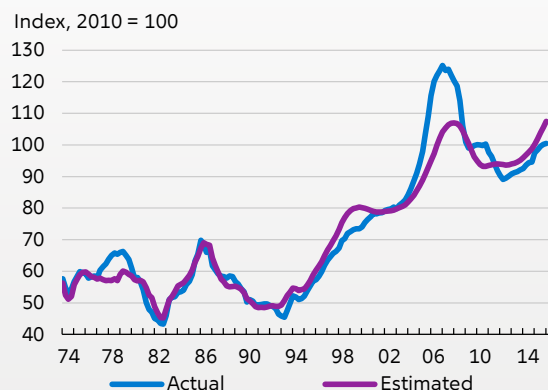
Are house prices too high for Denmark overall?

The short answer is “no”. At the national level, rising house prices since 2012 reflect higher incomes, both as a result of higher incomes for the individual, but also because more people are in employment. Moreover, interest rates have decreased, which has supported price growth, while higher administration margins and increasing land tax payments have had a dampening impact. Thus, the housing burden with amortisation for single-family houses is below the historical average since 1992, which indicates that, given the level of interest rates, house prices are below their equilibrium. This is underpinned by the house price relation in MONA, Danmarks Nationalbank’s macroeconomic model, cf. Chart 7.¹

The build-up of the house price bubble in the mid-2000s was characterised by steep price increases and subsequent credit expansion, combined with high private spending. Moreover, residential investment rose, leading to bottlenecks in the building and construction sector with high wage increases. Currently, these indicators are not present or present only to a limited extent. The private consumption ratio is low, and household housing debt is growing slowly – albeit from a high level, cf. Chart 8 (left). The slow growth in housing debt means that the average loan-to-value, LTV,

House prices at the national level are slightly below the level indicated by Danmarks Nationalbank’s macroeconomic model

Chart 7



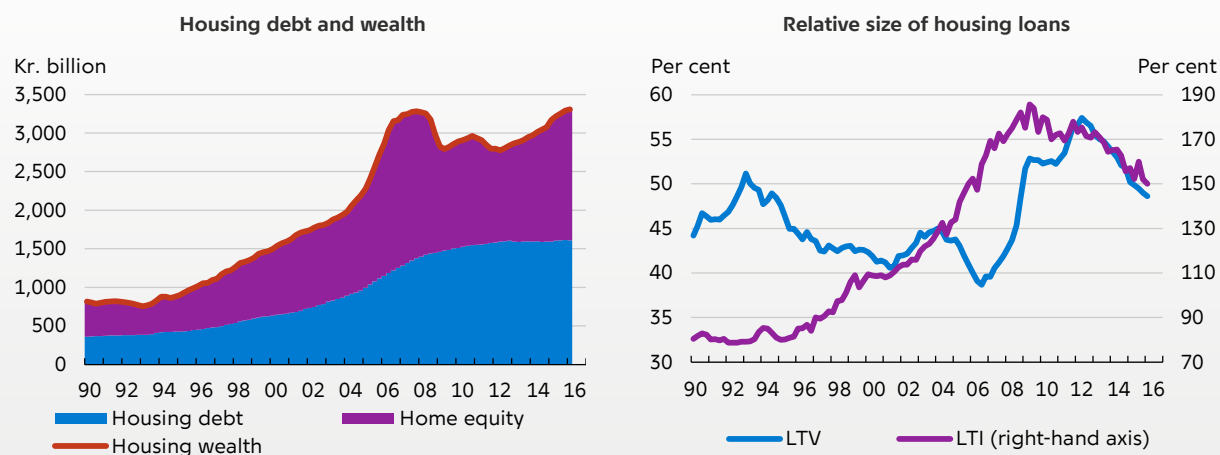
Note: The house price relation is estimated for the period from the 2nd quarter of 1973 to the 4th quarter of 2015.
Source: The MONA data bank and own calculations.

ratio and the housing-debt-to-disposable-income ratio have both fallen, cf. Chart 8 (right).

On the supply side, residential construction activity is rising, reflected in employment growth in the building and construction trades, which are showing signs of labour shortages. However,

Households are consolidating

Chart 8

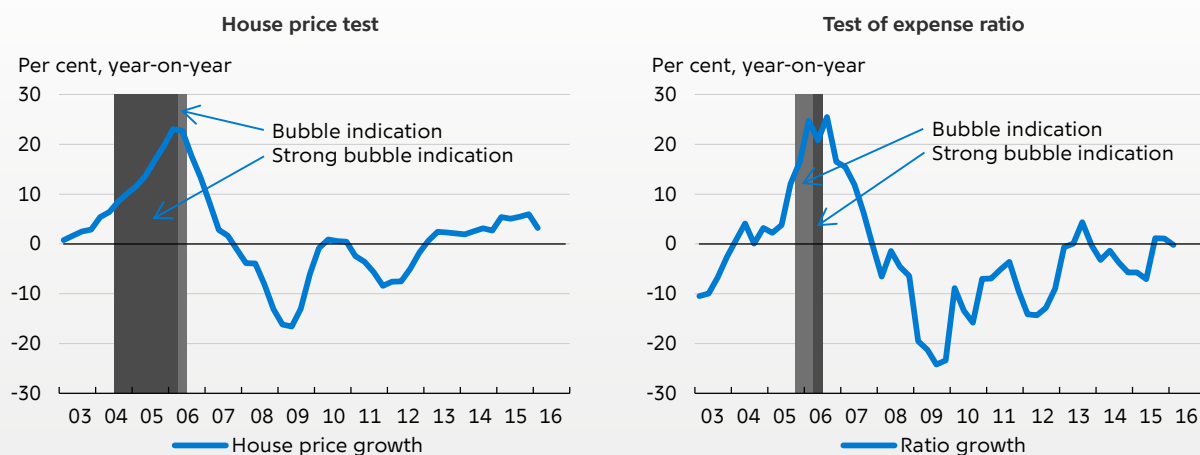


Note: Data is seasonally adjusted. The most recent observations are from the 1st quarter of 2016. Right-hand chart: The LTV is the loan-to-value ratio and the LTI is household debt relative to household disposable income.
Source: Statistics Denmark, Danmarks Nationalbank and own calculations.

¹ See Dam et al. (2011) for a more detailed description of the house price relation in MONA.

No signs of a house price bubble at the national level

Chart 9



Note: The Phillips et al. (2015) test was conducted using an estimation with a 28-quarter rolling window. The grey shaded areas indicate periods in which the test with 95 per cent and 99 per cent probability, respectively, cannot rule out that house price developments are compatible with a self-fulfilling house price bubble. The lag length is 2 for house price developments and 3 for the expense ratio. The critical values do not follow a standard distribution, they are simulated and determined at 5,000 simulations.

Source: Statistics Denmark, Danmarks Nationalbank and own calculations.

this is due mainly to activity other than residential construction.

Long periods of rising house prices increase the risk of over-optimism in terms of future price gains. This may boost the current willingness to pay, i.e. expectations of higher prices in the future result in price increases today. Thus, expectations of house price increases may be self-fulfilling. However, a statistical test based on a prevalent

method shows no indications that house price growth at the national level since 2012 has been driven by such self-fulfilling expectations, cf. Chart 9 and Box 1. The shaded areas of the charts indicate periods in which the test has identified house price growth that is compatible with a self-fulfilling house price bubble. At the national level, a house price bubble was identified for single-family houses from the 3rd quarter of 2004, looking only

Indications of bubbles in house price rises

Box 1

The literature has a long tradition of using quantitative methods for identifying periods in which price developments in a wide range of financial assets may be characterised by a price bubble. The underlying model for most of the literature's bubble tests is a financial asset pricing model.

In these models, the current price is the sum of future discounted dividends until a given time and the expected price at that specific time. In the housing market, the dividend of a home could be defined as the current value of being able to live in the home or the rent that the home could generate if rented out. In addition, expectations of future price rises will increase the willingness to pay, which is capitalised into the current prices, i.e. expectations of future price rises are reflected in current price rises. Under certain conditions, such self-fulfilling expectations of house price rises could trigger a house price bubble.

Phillips et al. (2015) provide a test for identifying whether house price developments can be characterised by a

self-fulfilling house price bubble. The test for a given time, t , used on a series, x_t , is estimated using the following regression model,

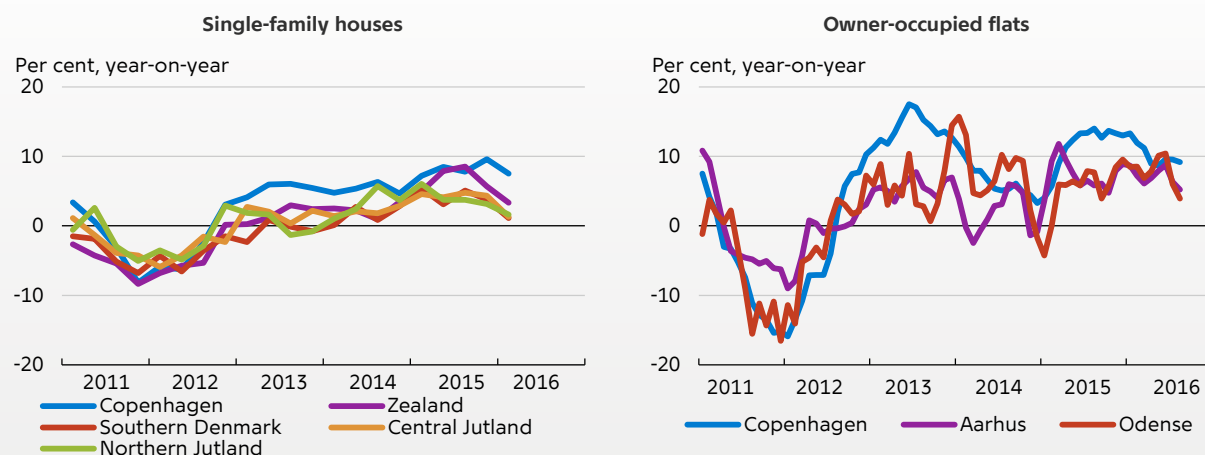
$$x_t = \alpha + \delta x_{t-1} + \sum_{j=1}^p \rho_j \Delta x_{t-j} + \varepsilon_t$$

Here, α is a constant and δ and all ρ_j are regression coefficients. p represents the model's lag length and ε_t is an error term, capturing noise that cannot be explained by the model.

Rather than testing whether $\delta = 1$ against the alternative $\delta < 1$, which means that, in the long term, prices will adjust to a stable level, testing is conducted against the explosive alternative, $\delta > 1$. This means that if prices increased yesterday, they are expected to increase even more tomorrow. In other words, it is tested whether the series develops into a self-fulfilling price bubble.

Considerable geographical differences in house price developments

Chart 10



Note: Data is seasonally adjusted. Note that the City of Copenhagen has considerably more owner-occupied flats than the two other municipalities shown. Consequently, there are wider fluctuations in these two series, since they are based on fewer sales. The most recent observations are from the 1st quarter of 2016 for single-family houses and July for owner-occupied flats.

Source: Left-hand chart: Statistics Denmark. Right-hand chart: Boligsiden.dk and own seasonal adjustment.

at price developments. Currently, there are no indications of a bubble-like development at the national level.

Looking at an expense ratio where prices are adjusted for developments in disposable income and in interest rates and administration margins, there are no signs of a bubble either. During the bubble in the mid-2000s, the test based on the expense ratio responds slightly later than the test based only on price developments. Until the 4th quarter of 2005, house price growth was supported particularly by developments in the long-term mortgage rate, after which time house prices were decoupled from economic fundamentals.

Are house prices in Copenhagen too high?

Unlike house price growth at the national level, developments in the Copenhagen housing market give cause for concern. Developments in the overall Danish housing market mask large regional differences. Prices of single-family houses in the Capital Region of Denmark have grown more than 5 per cent each year since 2013, while growth has been far more subdued in e.g. the Region of Southern Denmark, cf. Chart 10 (left). For owner-occupied flats, regional differences have been even more pronounced. Since 2012, price rises for flats in Copenhagen, where about one-third of all owner-occupied flats in Denmark are located, have been far above 10 per cent

year-on-year for extended periods, cf. Chart 10 (right).

Regional differences reflect, inter alia, that for an extended period of time more and more households have tended to move to the largest Danish cities, especially Copenhagen. This urban migration has pushed up prices in the cities, cf. Chart 11 (left). At the same time, the nominal freeze on property value taxes means that there has been no automatic dampener on price rises, cf. below. Thus, the freeze has contributed to the very large differences in house prices across the country.²

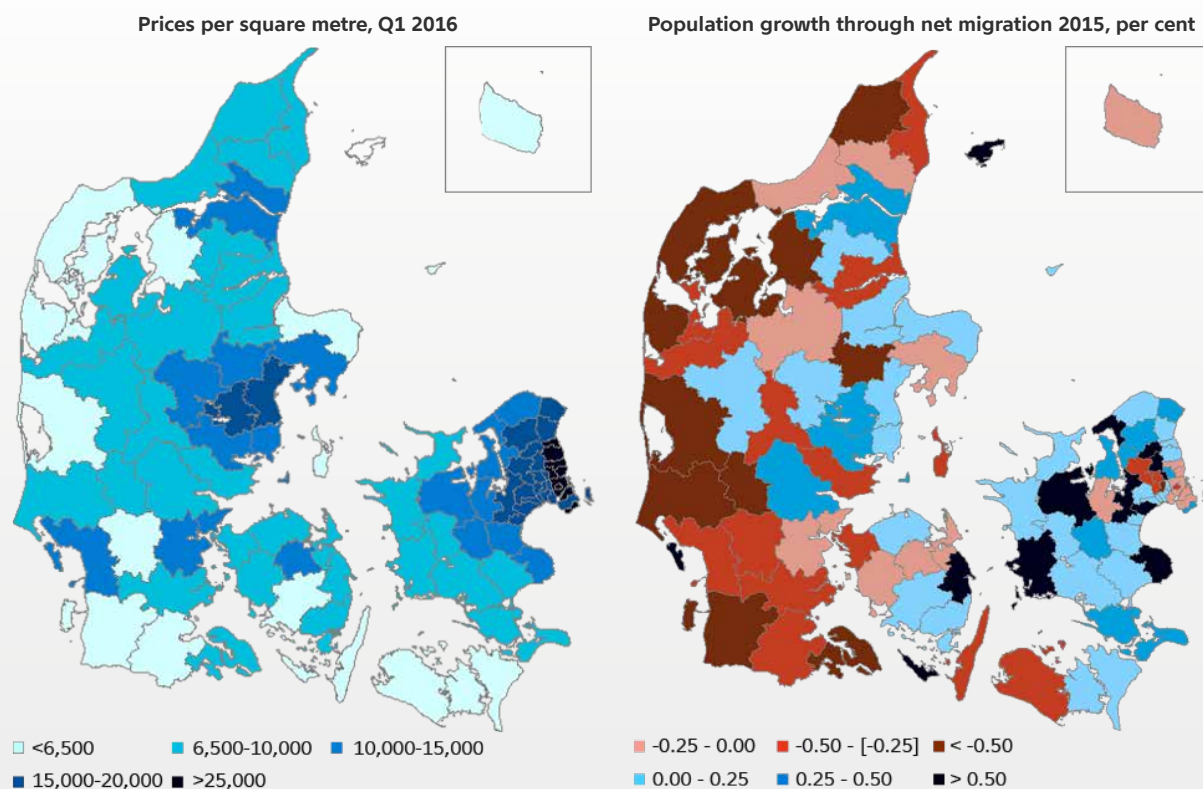
It appears that prices in Copenhagen have reached a level where several families are choosing to move to areas outside of Copenhagen to be able to afford a larger home. 2015 saw net migration out of the municipalities with the highest house prices, cf. Chart 11 (right), while eastern Jutland and Zealand municipalities, which are at a slightly longer distance from the cities, but have lower house prices, saw considerable net migration into the municipalities.³ The same movement took place in 2006-07. Rural municipal-

2 Large regional price differences could cause labour market mobility to decrease, given that financing a home purchase in Copenhagen by the sale of a home in a small provincial town may be difficult.

3 Net migration is less the excess of births and net immigration from abroad.

Geographical differences in house prices affect net migration

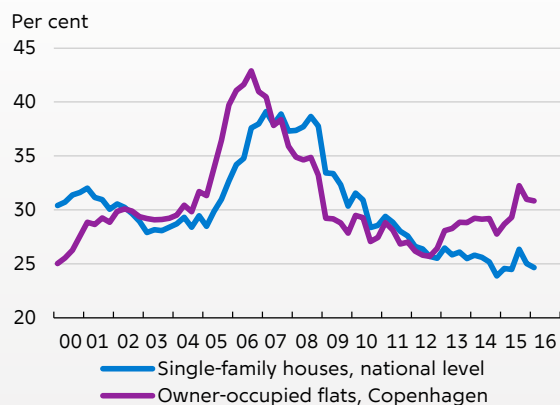
Chart 11



Source: Association of Danish Mortgage Banks' Housing Market Statistics, Statistics Denmark and own calculations.

The housing burden has increased in Copenhagen

Chart 12



Note: The most recent observations are from the 1st quarter of 2016. The housing burden for the purchase of a single-family house of 140 square metres and an owner-occupied flat of 72 square metres. The financing costs are based on a fixed-rate mortgage loan with amortisation plus a bank loan for the share of the purchase price that cannot be financed by a mortgage loan. The average Danish disposable household income has been applied.

Source: Statistics Denmark, Association of Danish Mortgage Banks' Housing Market Statistics, Realkredit Danmark, Skat (Danish tax authorities), Danmarks Nationalbank and own calculations.

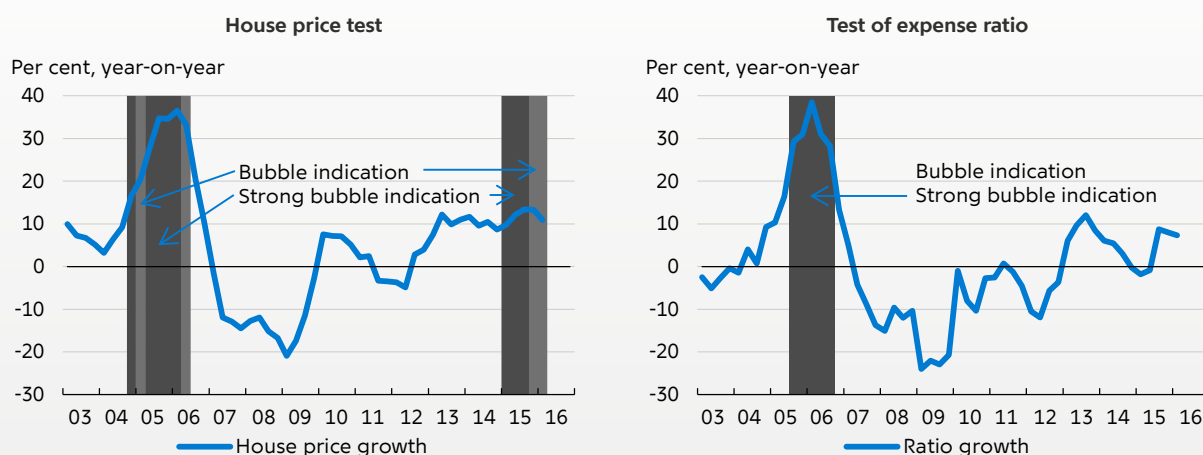
ities, for instance along the west coast of Jutland, also experienced net migration out of the municipalities. This development was part of a general urbanisation trend. In 2014, net migration to municipalities was concentrated on the municipalities in the immediate vicinity of Copenhagen. Thus, housing demand is gradually spreading across the country. Despite negative net migration to Copenhagen, the population of Copenhagen is growing due to net immigration from abroad and an excess of births.

Due to the large price rises for homes in Copenhagen, the housing burden based on prices of owner-occupied flats in Copenhagen since 2012 has increased far more than the housing burden at the national level. Prices have also risen above the level in the years before the housing bubble, cf. Chart 12.

Actually, house price growth alone has been so strong that a bubble test indicates that the price rises are driven, in part, by expectations of higher future prices. This was also the case during the

Some signs of a house price bubble in the market for owner-occupied flats in Copenhagen

Chart 13



Note: The Phillips et al. (2015) test was conducted using an estimation with a 28-quarter rolling window. The grey shaded areas indicate periods in which the test with 95 per cent and 99 per cent probability, respectively, cannot rule out that house price developments are compatible with a self-fulfilling house price bubble. The lag length is 2 for both house price developments and the expense ratio. The critical values do not follow the standard distribution, they are simulated and determined at 5,000 simulations. In the ratio, household disposable income at the national level has been used as the income measure. The reason for this choice is that home buyers often live in a different geographical area prior to the purchase, e.g. in case of 'parent purchases' (i.e. parents are buying flats for their student and adult children).

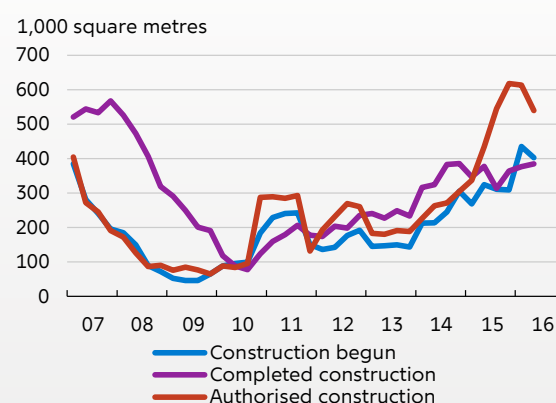
Source: Own calculations.

build-up of the house price bubble of the 2000s, cf. Chart 13 (left). If both income and interest rate developments are taken into account, it cannot be ruled out, however, that the price rises seen so far may be sustainable, cf. Chart 13 (right). This should be seen in the context of the exceptionally low mortgage rates.⁴ Prior to the latest house price bubble, the test based only on price increases responded first, in the 4th quarter of 2004, while the test responded somewhat later when controlled for economic fundamentals.

At the same time, construction activity in and around Copenhagen is high, cf. Chart 14. This is necessary to meet the housing demand from a growing population, and, viewed in isolation, it helps to dampen price increases. If price developments reverse over the next couple of years, for instance if interest rates rise, this could coincide with the completion of a substantial number of new houses. This could amplify a drop in prices as the one seen in 2007-09.

Residential construction in the city of Copenhagen

Chart 14



Note: The most recent observations are from the 2nd quarter of 2016. The series are calculated as the sum over the past year. The most recently published observations are typically subject to considerable uncertainty.

Source: Statistics Denmark and own seasonal adjustment.

⁴ With the exceptionally low mortgage rates, the test in Phillips et al. (2015) is not close to indicating a house price bubble in the making.

What will happen to house prices if interest rates rise?

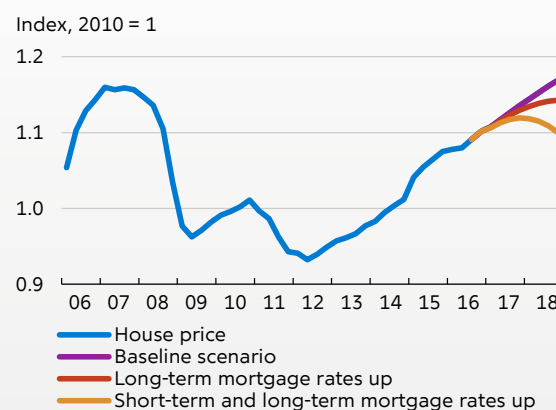
On several occasions over recent decades, housing interest rates have risen by 1 percentage point or more over a short space of time. Therefore, it is relevant to look at house price developments in the coming years, using various interest rate scenarios. For Denmark overall, the assessment is that interest rates would have to rise quite substantially in order for house prices to start declining. The Copenhagen housing market is probably more vulnerable to sudden interest rate rises than the rest of the country.

In Denmark's Nationalbank's most recent projection from this Monetary Review, house prices at the national level are expected to continue to rise by approximately 3 per cent annually in the coming years, driven by higher incomes and only slightly higher interest rates. The projection is based on Denmark's Nationalbank's macroeconomic model, MONA. If expected developments in house prices and the expense ratio are tested for signs of price bubbles, cf. Box 1, there are no indications that developments are unsustainable.

In an alternative scenario, long-term interest rates gradually increase to 5 per cent by the end of 2018, i.e. the level seen in 2011. This is about 2 percentage points above the level of the baseline scenario, i.e. the projection. This could, for instance, be the result of the European Central Bank, ECB, ending its asset purchase programmes before raising monetary policy rates. Short-term interest rates are assumed to follow the baseline scenario. Under the alternative interest rate development, house prices at the national level will grow less than otherwise, cf. Chart 15. If short-term interest rates are also assumed to rise more than in the baseline scenario, house prices at the national level will start decreasing at the end of 2017.

The International Monetary Fund, IMF, has shown that house prices in Copenhagen, among other places, are far more vulnerable to interest rate changes than house prices at the national level, cf. IMF (2016). According to the IMF, one reason could be that it is more difficult to adjust the housing supply in densely populated areas, and thus there will be a higher interest rate pass-through to prices. Moreover, the price of land is probably more interest rate sensitive than the price of buildings. The price of land is determined

At the national level, interest rates need to rise sharply in order for house prices to fall Chart 15



Note: In the "Long-term mortgage rates up" scenario, long-term mortgage rates are assumed to rise by around 2 percentage points to 5 per cent at end-2018, while short-term mortgage rates follow the baseline scenario. Thus, the yield curve will steepen. In the "Short-term and long-term mortgage rates up" scenario, all mortgage rates rise by about 2 percentage points more than in the baseline scenario.

Source: MONA and own calculations.

by the present value of the future return. Consequently, interest rate changes are fully capitalised. The price of buildings, on the other hand, is determined by construction costs, and financing costs account for only a small share of construction costs. Thus, in areas in which land accounts for a large share of the total property value, which is the case in Copenhagen, interest rate changes will affect property prices more than in other areas. Finally, financing costs are higher for the purchase of expensive homes, and therefore interest rate changes will cause greater nominal fluctuations for expensive homes than for cheaper ones. The combination of high interest rate sensitivity and house price growth that is already on the verge of becoming unsustainable, leads to increased risk that even small, sudden interest rate increases could trigger price falls.

Why are house price fluctuations a problem?

House prices developing in line with economic fundamentals, for instance incomes and interest rates, are part of a well-functioning market economy. However, a steady and measured pace is essential, given that fluctuations in house prices impact the general economy.

Higher house prices make existing homeowners feel and become wealthier. When house prices increase, more home equity is generated in the house or the owner-occupied flat. Home equity can, to a certain extent, be used as collateral or realised when the home is sold. As a result, demand for other goods and services also rises, and construction of new homes is boosted as are repairs and maintenance of existing homes, thus increasing demand for labour.

On several occasions over recent decades, housing market developments have contributed to overheating of the economy, most recently with the housing bubble in the mid-2000s when house prices at the national level increased by about 20 per cent annually. This was, to some extent, a case of self-fulfilling expectations: many buyers expected the strong price growth to continue and were prepared to pay a higher price for the home, which then appreciated in price. As a result, new homeowners paid a higher price and accumulated more debt. Thus, higher house prices lead to some intergenerational redistribution of wealth, cf. Bang-Andersen et al. (2013). Another result of the development was a surge in the construction of new homes and renovation of old ones and a surge in private consumption. Employment rose, putting upward pressure on wages, which outpaced the wage growth of our competitors abroad, thereby eroding competitiveness. Thus, large imbalances accumulated in the Danish economy, causing the downturn to be reinforced when the financial crisis struck in 2008 and economies across the western world ground to a simultaneous halt.

The bursting of the housing bubble in 2007 contributed to a prolonged period of low economic growth and rising unemployment from which the Danish economy started recovering just a few years ago. The overheating of the housing market has been expensive for the Danish economy, for instance in the form of loss of growth in prosperity.

At the same time, declines in house prices may have considerable implications for the individual homeowner. If the increased home equity has been used as collateral, possibly even to raise a deferred amortisation loan, the homeowner may become insolvent in the sense that the debt exceeds the value of the home. Therefore, it is also in the best interests of the individual homeowner

that house price growth is stable. However, homeowners cannot entirely avoid the risk associated with house price fluctuations. Initially, these issues constitute a problem for the individual homeowner, but if many homeowners are affected at the same time, the result could be a problem for the general economy, which could threaten the health of lenders – i.e. initially banks and mortgage banks. A healthy and solid financial sector is a key element of a robust economy.

Large house price fluctuations also mean that entering and leaving the housing market becomes somewhat of a lottery. If prices are high when the home buyer purchases the home, a subsequent fall in house prices will result in a loss which could affect his or her life situation for a long time, especially if he or she has to sell the home and incur the loss, for instance in case of divorce or job change. Conversely, a surge in prices will give existing homeowners a wealth gain – a windfall to which they did not contribute for instance by working more. First-time buyers, on the other hand, will find it more expensive to enter the housing market. All in all, widely fluctuating house prices introduce an element of randomness into the financial position of the individual homeowner. Also for this reason, steady house price growth is preferable.

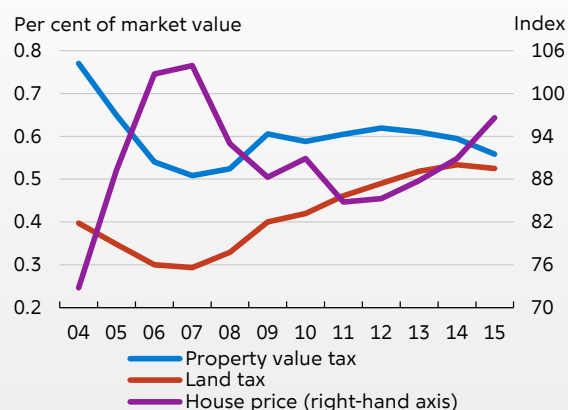
HOUSING TAXES

Housing taxes act as automatic stabilisers for the housing market and the general economy if the current tax reflects the value of the home. At the same time, housing taxes are less distorting than other taxes, and thus less inhibiting to economic growth, and they can generate relatively stable revenue to the central government. Until the introduction of the tax freeze in 2001, taxes paid were based on official valuations of the value of the entire home and the isolated land value, respectively, whereby housing taxes dampened house price fluctuations.

The nominal freeze on property value taxes and, to a slightly lesser extent, the cap on the increase in land tax have eliminated the stabilising effect of housing taxation. This causes greater fluctuations in house prices – leading to wider macroeconomic fluctuations and less financial stability – and means that a larger share of the

Effective housing taxes move opposite to house price fluctuations

Chart 16



Kilde: Own calculations based on real estate register data from Statistics Denmark.

total tax revenue is collected through other, more distorting, taxes. Since 2001, the housing taxes paid have followed neither the market price nor the public valuations. Thus, the effective tax rate has decreased when house prices have increased and decreased when house prices have increased, cf. Chart 16. In other words, housing taxes do not help to stabilise house prices.

Property value tax

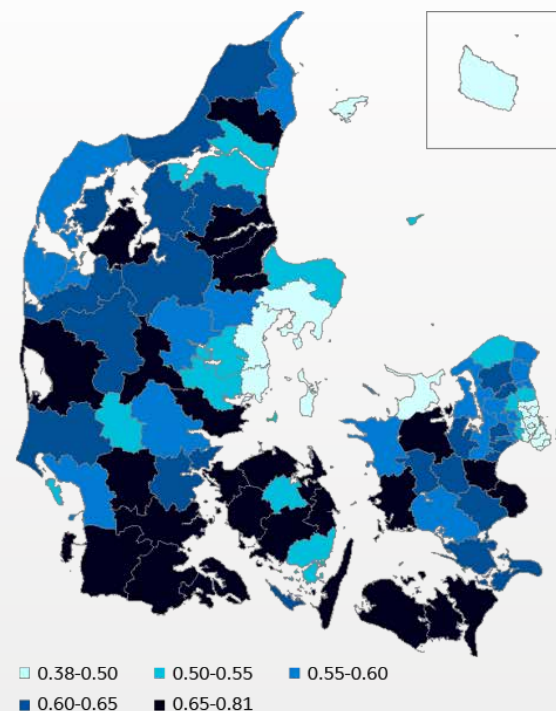
Property value tax is a tax on the return of the home, or the rent the homeowner saves by owning rather than renting the home. This tax should be seen in relation to interest deductibility and taxation of capital income in general. Interest expenses, i.e. negative capital income, on housing debt are, for instance, tax deductible, whether the home is rented out or used by the homeowner. Property value tax ensures that both positive and negative capital income from homeownership is taxed, and, more generally, that the tax system does not favour one type of investment over others, for instance residential investment over investment in a business.⁵

Since 2001, nominal property value taxes have been frozen. As a result, the effective tax rate, i.e. the tax paid relative to the market value of the home, has fallen. In 2001, homeowners paid 1 per

⁵ The tax freeze is not symmetrical in its design. Housing taxes were frozen nominally, while the interest deductibility (tax on negative capital income) and other capital taxes were not frozen.

Lowest effective property value tax rates are found in and around large cities

Chart 17



Note: Total property value taxes paid relative to housing wealth calculated at market value at the municipal level in 2015 in per cent.

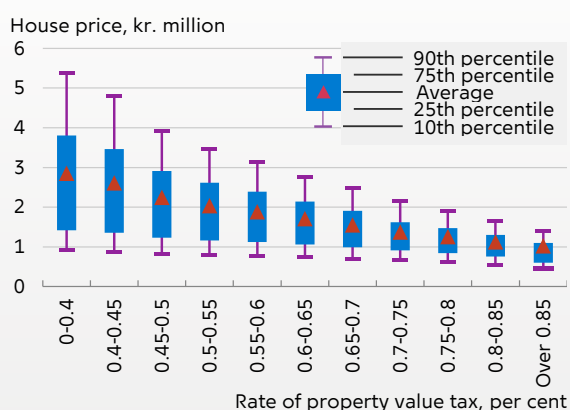
Source: Own calculations based on real estate register data from Statistics Denmark.

cent of the public property valuation up to just over kr. 3 million and 3 per cent on higher valuations.⁶ In 2015, the average effective rate at the national level had dropped to about 0.55 per cent of the market values, but with large variations across municipalities. In municipalities around large towns and cities, which have seen the strongest price increases, the effective rates are lowest, cf. Chart 17.

Moreover, house prices in and around large towns and cities are higher than in the rest of the country, entailing that the effective rates tend to be lowest for the most expensive homes, cf. Chart 18. Thus, the group of homes with an effective property value tax rate below 0.4 per cent on average cost just under kr. 3 million, and the 10 per cent most expensive homes in the group

⁶ Home owners who bought their homes before 1998, and pensioners get a discount, and thus the actual property value taxes paid were slightly below 1 per cent, also before the nominal freeze.

Expensive homes are subject to a lower rate of property value tax Chart 18



Note: 10 per cent of the homes in a given group are cheaper than the 10th percentile. 90 per cent of the homes are cheaper than the 90th percentile, while 10 per cent are more expensive.

Source: Own calculations based on real estate register data from Statistics Denmark.

cost over kr. 5.3 million. However, homes with an effective rate of more than 0.85 per cent, cost only about kr. 1 million on average.

Land tax

Land tax is tax on land areas, i.e. the taxation base is the value of the land without the building. Taxation of land has a number of macroeconomic advantages over most other tax objects such as income or interest and equity income. Basically, this is because land is a tax object that cannot be moved to avoid taxation, i.e. tax on land is a non-distorting tax.⁷ Income tax can, to some extent, be avoided by working less, which is to the detriment of value creation in the economy. Unlike most other taxes, land tax thus does not constitute an efficiency loss to the economy which inhibits economic growth. From an economic point of view, tax on land is thus one of the best forms of taxation. However, separate land tax and property value tax are not essential for stability in the housing market, cf. Box 2.

Because land cannot be moved, changes in the tax rate are very important determinants of the price of land. Actually, if the land tax rate is reduced or if land tax is abolished altogether, the price of land will increase as much as the present value of the lower land tax in perpetuity. That way, the entire gain will go to the existing land

Two separate housing taxes reduce the distortion loss, but are not essential for stability in the housing market

Box 2

Two different housing taxes may seem complex, and, moreover, land value taxation requires a specific assessment of the market value. This may be difficult, since only few undeveloped plots are sold, cf. the Engberg Committee, among others, and there have been a number of examples of two approximately identical neighbouring plots having been valued differently. The Danish Ministry of Taxation is working to develop a new valuation system, which, using a number of statistical methods, will be able to estimate a market price both for the entire home and for the land value separately far more accurately than today.

If the two housing taxes were consolidated into one, this would not immediately affect housing market stability, provided the total tax tracks house prices. Thus, separate land tax and property value tax are not essential for stabilising house price fluctuations.

However, land tax is less inhibiting to economic growth than, for instance, income taxes, given that the distortion

loss is very small. Moreover, land appreciation often tends to be a socially-generated value, for example as a result of public infrastructure investment or amendments to the planning act, and land tax ensures that the government takes its share of the gains. Finally, land tax helps to ensure that land is used efficiently, since land tax makes it expensive to own land that is not used, but held for speculation.

If the two taxes are consolidated into one, this may also have major implications on the distribution of wealth, depending on whether land makes up a large or a small share of total property valuation. For homes where the land value accounts for a relatively small share, for instance flats and homes far away from large towns and cities, the total tax rate will presumably be much higher than it is today.

Consolidation of the two taxes could also mean that taxation of the value of the property becomes high relative to the costs of new construction and improvements. This implies a decrease in these costs.

1. Non-distorting taxes affect neither supply nor demand. Thus, the tax will not constitute an efficiency loss to the economy which inhibits growth. From a purely economic point of view, tax on land is thus one of the best forms of taxation.

7 The land area is not completely fixed, since new land can be reclaimed. Land tax could make it less attractive to reclaim new land, thus having a distorting impact, but the significance is small.

owner. But future land owners will not realise any savings, as the purchase price of the land has increased to a level where the current financing costs, i.e. interest expenses, offset the lower tax. An overall decline in the revenue from land tax will also require an increase in taxation in other areas, for instance higher income taxes. Consequently, changes in the rate of land tax – up or down – have substantial implications in terms of intergenerational redistribution.

Land tax is a municipal tax and varies across municipalities. Unlike property value tax, it is not frozen, but follows public valuations of land values, albeit with a lag, since the collection of land tax is based on valuations dating back two or three years.⁸ Moreover, there is a cap on the year-on-year increase in land tax.⁹ As a result of the collection lag and the cap on increases, the effective land tax rate in a number of municipalities is currently lower than the tax rate set by the municipality.

HOUSING TAXES AND PRICE FLUCTUATIONS

The freeze on property value taxes and the cap on the increase in land tax lead to greater fluctuations in house prices.

What are the implications of the nominal freeze?

The nominal freeze on property value taxes has eliminated their stabilising effect on house prices, i.e. it has removed an important automatic dampener on price fluctuations. The reason is that, due to the freeze, a higher house price will not lead to an increase in the taxes payable by a home buyer. Without the freeze, home buyers would be paying higher housing taxes if house prices increased. That would reduce their willingness to pay. And vice versa if house prices fell.

Without an automatic dampener on house price fluctuations, the risk of house price bubbles increases. A number of surveys show that household expectations of house price developments are widely affected by the most recent price developments, cf. Dam et al. (2011). Thus, if prices are surging, households will typically expect price growth to continue. This increases the risk

that house price growth becomes a self-fulfilling prophecy, i.e. that expectations of higher prices tomorrow drive up prices today. This emphasises the importance of having housing taxes act as an automatic dampener on house price fluctuations.

The size of the automatic stabilisation from housing taxes can be illustrated by an example. Given the freeze, the average homeowner pays around 0.55 per cent of the market value of the home in property value tax, i.e. on a home worth kr. 2 million, about kr. 11,000 is paid in property value tax each year. Based on the size of fluctuations since the freeze on property value taxes after 2001, the value of such home will fluctuate by about kr. 325,000 in either direction as long as property value taxes are frozen. If potential buyers of the home were subject to housing tax that fluctuated with the house price, i.e. that buyers were to pay 0.55 per cent of the purchase price in property value tax, the house price fluctuations could be reduced to about kr. 255,000 in either direction, cf. Chart 19. This corresponds to a reduction in fluctuations of some 22 per cent.

In addition to eliminating an important automatic dampener on house price fluctuations, the freeze has increased house prices, thereby inflating household balance sheets. As the level of prices rises, the real value of property value taxes declines. This increases house prices relative to income (the price-income ratio), given that property value tax savings can be used to service higher debt. Thus, the freeze contributed to the housing bubble in the mid-2000s and amplified the subsequent macroeconomic downturn, cf. Andersen et al. (2014). Finally, the central government's revenue base will gradually be eroded, meaning that other, more distorting, taxes must be raised.

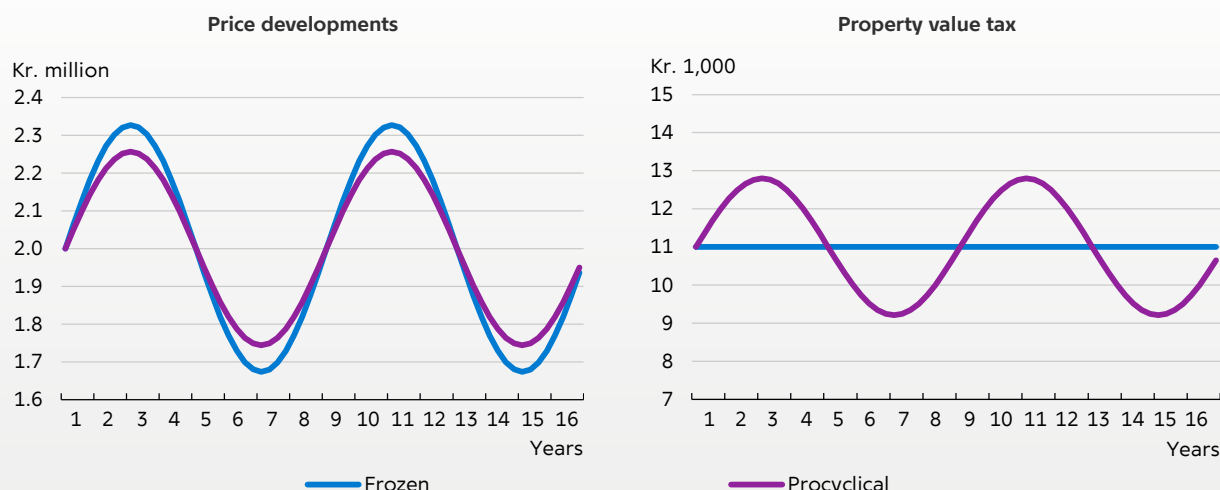
Land tax is not frozen, but due to the cap on increase, the land tax paid does not necessarily fluctuate with house prices. Actually, the land tax paid rose in the period 2008-10 amid plunging house prices. The explanation was that taxable land valuations in the years 2005-08 increased at a much slower pace than the actual valuations due to the cap on increases, cf. Chart 20. Therefore, there was a backlog to be made up. The increasing land tax payments amplified the decline in house prices in the period 2008-10. The process would have been more expedient if the increases had occurred in the previous period when prices were surging.

⁸ No new valuations have been made since 2011, as the Ministry of Taxation is working to develop a new valuation system.

⁹ The regulation ratio cannot exceed 7 per cent. For 2016, the regulation ratio for owner-occupied housing has been set at 0 per cent.

Procyclical housing taxes for home buyers dampen house price fluctuations

Chart 19

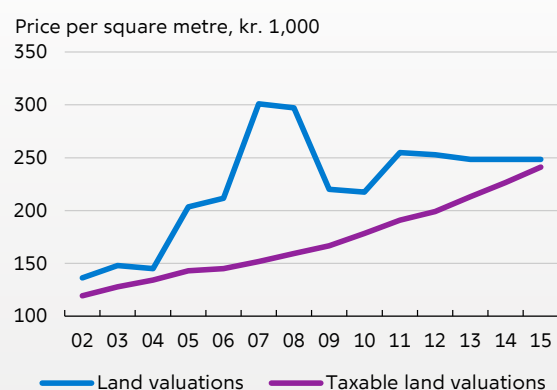


Note: The calculations are based on a cycle matching the standard deviation in the rate of price increases for single-family houses over the period 2002-15. The cycle has a period of 32 quarters. The calculations assume that changes in the property value are capitalised fully into prices, entailing that there is no adjustment of the housing stock.

Source: Own calculations.

Land valuations and taxable land valuations, average at national level

Chart 20



Note: The taxable land valuations are based on valuations dating back approximately two years. Since 2003, the taxable land value has been allowed to rise only with the regulation ratio for property taxes.

Source: SKAT's valuation statistics and own calculations.

tax payments, but the two considerations are not easy to integrate. However, there is a way to achieve stability in payments without destabilising the housing market, cf. the Danish Economic Councils (2016). This stability could be achieved e.g. by allowing increases in current housing taxes in excess of, for instance, wage growth to be frozen, i.e. to postpone payment until the home is sold, cf. Box 3.

At first glance, the same advantage could be achieved by abolishing current housing taxes for a property gains tax, i.e. a tax on the gain made by the homeowner if the selling price exceeds the purchase price. Such tax is payable only when the homeowner realises a gain. However, property gains tax does not dampen fluctuations in house prices, which are also a disadvantage to households, especially first-time buyers entering the housing market. Moreover, property gains tax has a number of other problems. Replacing current housing taxes with property gains tax is clearly inadvisable, cf. Box 4.

House price fluctuations are dampened when current housing taxes are in relation to the value of the home. Thus, to reduce house price fluctuations, housing taxes paid must fluctuate. For the individual homeowner, there are advantages to stability in both house prices and housing

Fluctuations in housing taxes paid can be dampened

Box 3

Higher current housing taxes are the result of higher house prices, entailing that homeowners have experienced a capital gain. If current income is not sufficient to pay housing taxes, loans can be raised against home equity, and the loan can be used to pay the higher current taxes.¹ Instead of borrowing at the bank, the Danish Economic Councils, among others, have suggested that increases in housing taxes in excess of, for instance, wage growth could be postponed by granting a mortgage on the home, cf. Danish Economic Councils (2016). This is equivalent to a loan from the public sector to homeowners. Postponed housing tax payments will bear interest at a market rate and be paid when the home is sold.² If a homeowner has postponed housing tax

payments, the home has appreciated in value, entailing that a capital gain is realised on the sale of the home, which can be used, inter alia, to pay postponed housing taxes. For home buyers, the size of current housing taxes will be determined based on the most recent property valuation or possibly the market price. Thus, increasing house prices will reduce home buyers' willingness to pay, which will dampen house prices. It should be emphasised that stability in total (nominal) housing costs for the individual homeowner also requires that the home is financed with fixed-rate loans. Interest payments on variable-rate loans may fluctuate considerably more than housing tax payments.

1. Under reasonable assumptions, the capital gain will always be higher than the present value of higher current taxes. Thus, overall, the homeowner is not worse off.
2. Given that the postponed housing taxes bear interest at a market rate, there will be negligible, if any, lock-in effects.

Replacing current housing taxation with capital gains tax is a bad idea

Box 4

A capital gains tax is a tax on the gain made by the homeowner if the sales price exceeds the purchase price after adjustment for home improvements. The tax may be postponed until the homeowner withdraws entirely from the market for owner-occupied housing. However, such taxation has substantial disadvantages.

- Capital gains taxation will not dampen fluctuations in house prices. The tax is payable by the existing homeowner on the sale of the home. This does not reduce home buyers' willingness to pay, and thus, unlike taxation that tracks the home value on an ongoing basis, a capital gains tax will not dampen fluctuations in house prices. As a matter of fact, capital gains tax implies greater fluctuations in the housing market. Homeowners whose homes have appreciated since their purchase do not wish to sell, because by holding on to the home they can postpone the tax payment, free of interest.¹ Thus fewer homes will be put on the market when house prices are rising, which will put further upward pressure on prices, while the opposite is true when house prices are falling.²
- Capital gains taxation generates lock-in effects. The possibility of postponing tax payments free of interest also means that a capital gains tax will generate large lock-in effects, i.e. homeowners' incentive to move house is reduced. The lock-in effect will be particularly strong if homeowners speculate that the taxation could be abolished again. This translates into less labour market mobility and exerts upward pressure on house prices.
- Capital gains taxation weakens public finances. The tax is payable only at a future time of sale, which results in a substantial postponement of tax payments and weakens public finances in the short and medium term, but probably also in the long term. If the current revenue from property taxation is to be maintained in the

long term, this will require very high tax rates on future capital gains.³ Moreover, the size of the annual revenue will be more uncertain. Moreover, unless the postponement of tax payments takes the form of a mortgage on the home, there is no certainty that the homeowner will actually eventually be able to pay the tax, which may grow to a very large amount as nominal house prices increase over time.

- Capital gains taxation presents administrative challenges. A capital gains tax will provide an incentive for home buyers to pay "money under the table" to bring down the registered sales price, and thus tax payments. Moreover, a system is needed to keep tabs on deductions for home improvement costs. If deductions for improvements are not granted, homeowners will have an incentive to let the property fall into disrepair.
- Capital gains taxation is difficult to introduce initially. A capital gains tax is based on a purchase and a sales price, but historical purchase prices cannot be used, since up until now homeowners have already been paying current housing taxation. Therefore, a purchase price needs to be estimated. This makes the capital gains tax for existing homeowners highly dependent on the public valuation in the initial year.

All things considered, the problems involved in capital gains taxation are so severe that this form of taxation cannot be recommended. The most appropriate form of taxation of owner-occupied housing is current property value tax and land tax, the form of taxation used prior to 2002, possibly supplemented by the possibility of a tax postponement scheme to ensure that current tax payments do not fluctuate excessively. This will ensure that housing tax increases when property prices rise and vice versa. This is essential for ensuring that housing taxes help to stabilise house prices.

1. In principle, non-paid capital gains tax could bear interest, but in reality a system of that nature would be very difficult.
2. This line of argumentation is described in more detail in the Tax Commission's report, *Lavere skat på arbejde* (Lower tax on work – in Danish only), from February 2009, page 271.
3. According to a calculation made by the Ministry of Taxation, the tax rate on capital gains must be approximately 70 per cent to maintain revenue unchanged in the long term, cf. a response to a question posed to the Finance Committee – question no. 6 to Legal Document 77 of 15 April 2016.

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GEOGRAPHICAL JOB MOBILITY AND WAGE FLEXIBILITY

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INTRODUCTION AND SUMMARY

Labour market flexibility is a key prerequisite for stable macroeconomic development. It is important for stable development in output, unemployment and employment that wages can be adjusted to the current situation, and that economic resources are used effectively. Increased flexibility may also reduce structural unemployment, i.e. the level of unemployment that is compatible with stable wage and price development in the long term.

Denmark's consistent fixed exchange rate policy since 1982 may have contributed to the development of a more flexible labour market, as there are no longer any expectations of currency devaluations countering the effect of high wage increases on competitiveness. This may have facilitated the creation of a flexible labour market with increasingly decentralised wage formation and new wage systems that allow wages to be adjusted to the current conditions.

In the present situation, wage flexibility and smooth labour market structures are essential to the current upswing in order to prevent bottlenecks and frictions from impeding the recovery of the Danish economy. There are several signs of increasing pressures on the Danish labour market. This is particularly true in construction, which is traditionally a very cyclically sensitive sector, but recently also in the industrial sector. At present, Denmark's competitiveness is good, and there is scope for slightly higher wage increases in the coming years, as labour market pressures intensify.

Kristoffersen (2016) conducts a detailed empirical study of two key aspects of the labour market flexibility: geographical job mobility and wage flexibility. This overview article summarises the most important findings and conclusions of the analysis.

Although Danish employees show a relatively high willingness to change jobs, the level of geographical job mobility is only moderate by international standards. Geographical job mobility is important if labour is to be effectively distributed across the country, and if regional bottlenecks are to be avoided.

Employees who are insured against unemployment exhibit a lower degree of geographical job mobility than those with no such insurance. The difference is particularly pronounced for younger employees, but the labour market reforms implemented in the past 25 years seem to have improved geographical job mobility. This is particularly true among employees with unemployment insurance who experience unemployment.

Wage flexibility is another important aspect of labour market flexibility overall. In a number of countries, legal and other constraints make it difficult to implement downward wage adjustments. Such constraints constitute a barrier to wage flexibility. In Denmark, downward wage flexibility is relatively more pronounced than in other countries. This is true of both nominal wages, i.e. wages in monetary terms, and real wages. In a fixed exchange rate regime like the Danish one, it is particularly important that wages

and prices can adjust to the current economic situation.

By international comparison, the Danish labour market stands out due to its combination of fairly high union density and flexible wage formation. This should be viewed in light of the Danish labour market model, where the social partners collectively determine wages and working conditions, and of the trend towards decentralisation in collective bargaining since the 1980s. Wage flexibility is particularly high in export-oriented industries.

Historically, there is some degree of stickiness in the downward adjustment of real wages at the beginning of an economic downturn, but downward wage flexibility increases during the downturn. This was also the case in the euro area during the financial crisis from 2008 onwards. The wage response was fairly limited in the first phase of the crisis, whereas wages were more responsive in later phases of the crisis.

GEOGRAPHICAL JOB MOBILITY

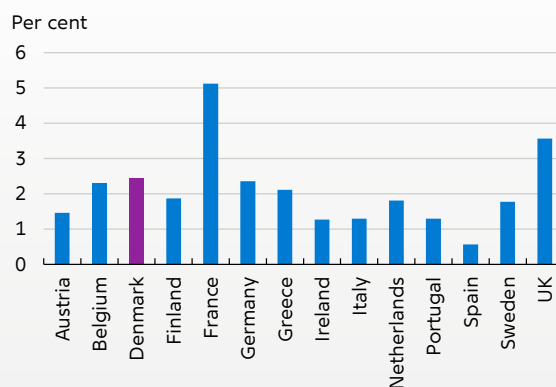
The Danish labour market is characterised by a “flexicurity” model, cf. e.g. Pedersen and Riishøj (2007) and Andersen and Svarer (2008). The flexicurity model comprises three main components: considerable flexibility in the employer’s right to hire and fire employees, an extensive social safety net in case of unemployment, and active labour market policies where the entitlement to compensation in the event of unemployment is countered by the obligation to actively seek a job and to participate in job-related activities.

However, previous studies show that the Danish labour market does not stand out positively in terms of geographical mobility. On the contrary, Economic Council (2002) finds that despite the relatively high job turnover rates in Denmark, the extent of geographical mobility is fairly limited.

The share of the Danish population who moved to another geographical area within the country from 2010 to 2011 is at a level close to the average for EU-15, cf. Chart 1. But compared with e.g. Australia and the USA, geographical mobility in the EU is low, both within and across countries, cf. Bonin et al. (2008) and OECD (2007). European Commission (2008) also finds that European employees are much less willing to move to another

Residential mobility in the EU-15, 2011

Chart 1



Note: The chart shows the share of the population that moved to different geographical area within the country during the last year. The breakdown of countries into geographical areas follows level 3 of the NUTS nomenclature (from French: nomenclature d’unités territoriales statistiques). There are 11 NUTS-3 regions in Denmark, corresponding to the different provinces. Luxembourg is not included in the chart since it constitutes one NUTS-3 region. Eurostat notes that the data for France has low reliability.

Source: Kristoffersen (2016).

country or to another region within the country than employees in the USA.

EMPLOYEES AND MOBILITY

Job mobility increased substantially in the period 2005-07, but fell back during the subsequent economic downturn, cf. Chart 2. It increased again in the period 2010-12. Job mobility has tended to increase during upswings and to decrease during downturns. Job mobility, defined as the share of employees who change their workplace within a year, cf. Box 1, was around 20 per cent in the period 1981-2004. The fall in job mobility in the period after 2007 may partly reflect that job mobility in the preceding years became so high that firms found it difficult to retain the necessary skills that are acquired during an employment relationship.

Geographical job mobility increased from around 7 per cent in the early 1980s to around 15 per cent in 2012, cf. Chart 2. Most of the increase occurred in the period after 2004. The cyclical fluctuations in geographical job mobility mirror the fluctuations in job mobility overall, improving during upswings and deteriorating slightly during downturns.

However, geographical job mobility varies considerably across population groups. Men gen-

Data

Box 1

The analyses in the article are conducted using register data from Statistics Denmark. This makes it possible to link employees with their employers. As a main rule, the population consists of all employees in Denmark aged 15-66.

The analyses of geographical job mobility primarily use data from IDA (integrated database for labour market research), which measures all employment relationships in November every year, cf. Statistics Denmark (1991). The analyses include all employees employed at a workplace for which the location (municipality) is observed in two consecutive years. However, they include neither self-employed individuals nor employees whose workplace changes address compared to the previous year. The data covers the period 1980 to 2012. Geographical job mobility is measured with an indicator of whether individual employees have changed to a workplace in a different municipality during the past year.¹ The structural reform effective from 2007 leads to a break in division into municipalities. To obtain a consistent time series, Denmark is divided into the 98 after-reform municipalities throughout the period 1981-2012, cf. Kristoffersen (2016). The final sample includes 58,679,755 observations.

The analyses of wage flexibility use mainly data from the Services Register of the Earnings Statistics, cf. Statistics Denmark (2015). The register comprises information on

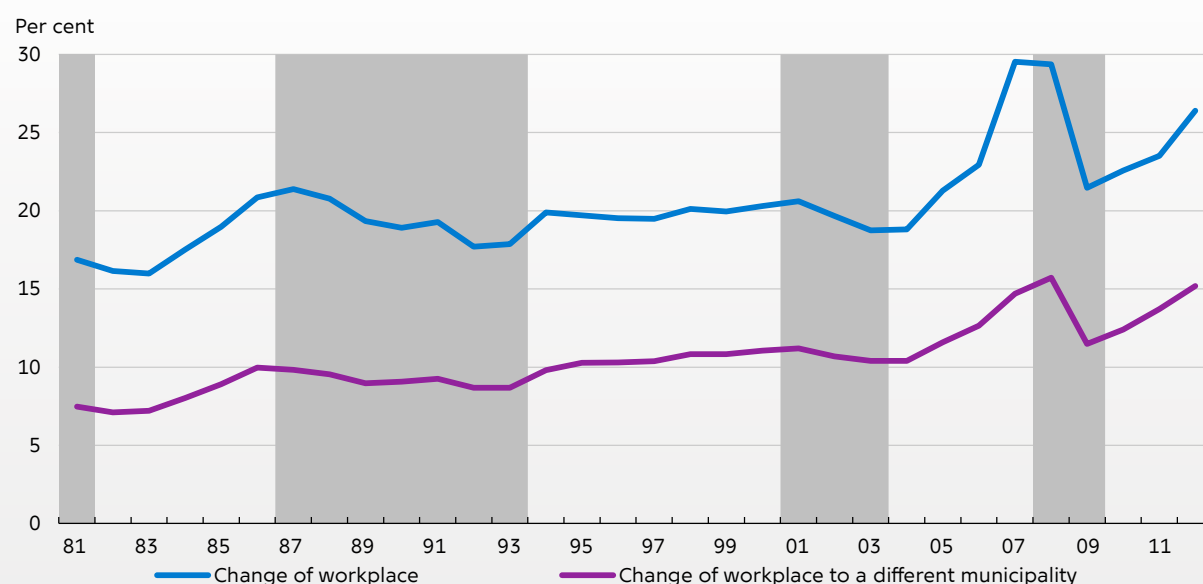
employees employed in firms with a staff equivalent to 10 or more full-time employees who have been employed for minimum one month in a job of more than eight hours a week. Employees in agriculture and fisheries are not included in the register. Another requirement is that employees are employed under "normal conditions". This means that e.g. employees who are paid exceptionally low wage rates due to disability, etc., and employees who are not taxed under ordinary tax conditions in Denmark are not included.

The Services Register of the Earnings Statistics includes all employment relationships for each individual during the year, but the analyses focus exclusively on the employment relationship with the most hours worked during the year. Wage flexibility is estimated on the basis of employees in the private sector with the same employer as the year before.² The purpose of this delimitation is to focus on wage flexibility in the individual employment relationship. Data covers the period from 1997 to 2010. The final sample comprises 6,449,162 observations. Firms are grouped into 19 industries, and the incidence of downward wage rigidity is estimated for 10 of those industries. In principle, the wage concept used is remuneration per hour worked, i.e. the part of the wage that is paid on a current basis, which does not include absence pay or nuisance bonus.

1. Other measures of geographical job mobility also exist, e.g. commuting distance, and division into alternative geographical units might also be used, cf. the discussion in Kristoffersen (2016). Confederation of Danish Employers (2013) considers commuting distance and against this background concludes that geographical mobility in Denmark is moderate.
2. See Ministry of Economic Affairs and the Interior (2014) for a recent Danish study focusing on wage mobility among job switchers. In keeping with the results of this article, they find that wage mobility is relatively high in the Danish labour market.

Job mobility and geographical job mobility

Chart 2

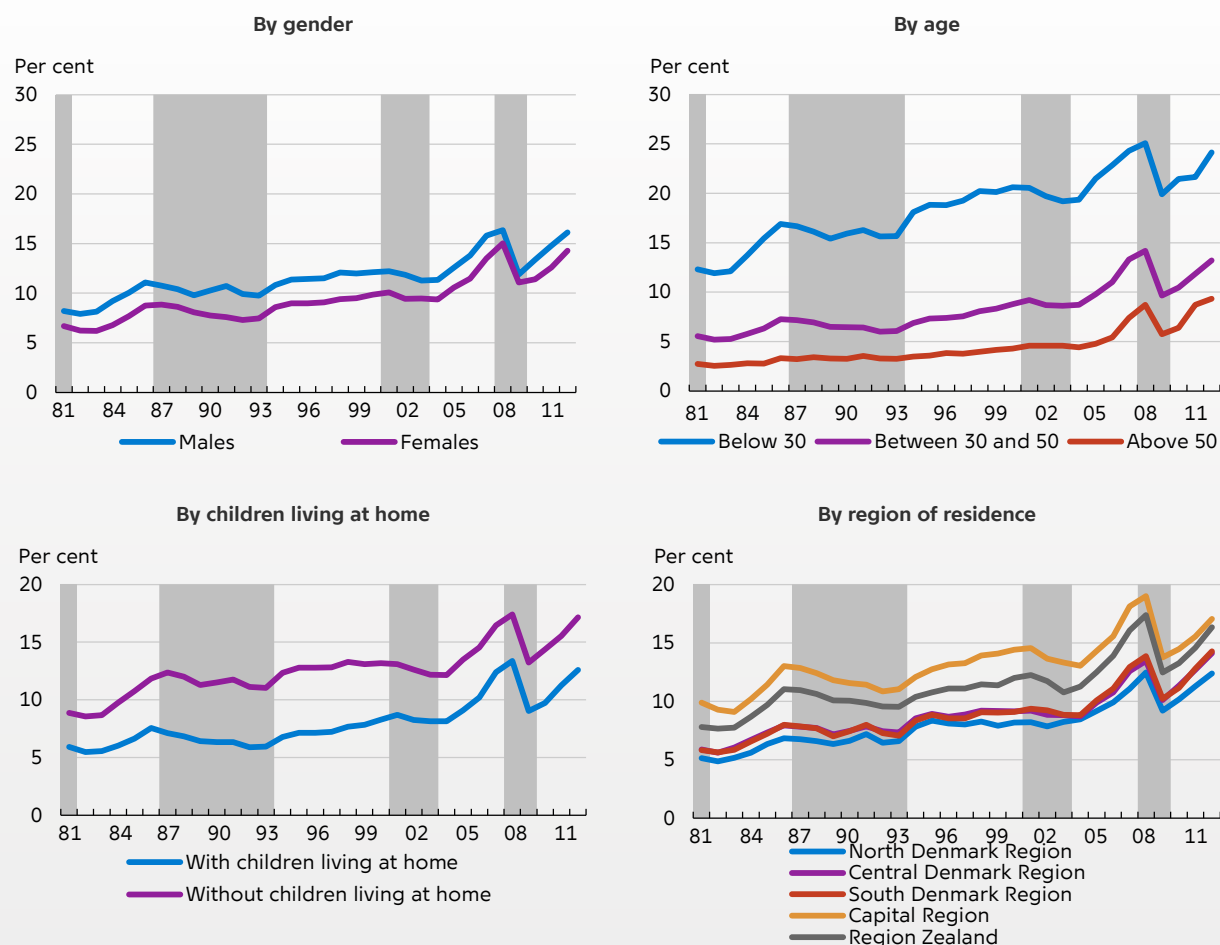


Note: The blue curve shows job mobility measured as the share of employees who changed their workplace compared to the previous year. The purple curve shows geographical job mobility measured as the share of employees who changed to a workplace in a different municipality compared to the previous year. The grey areas show periods of economic downturn, cf. Abildgren et al. (2011).

Source: Kristoffersen (2016).

Geographical job mobility and personal characteristics

Chart 3



Note: The chart shows the share of employees who changed to a workplace in a different municipality (after-reform) compared to the previous year. Personal characteristics are measured in the previous year. The region of residence refers to the after-reform region; see Kristoffersen (2016) for a more detailed explanation. The grey areas show periods of economic downturn, cf. Abildgren et al. (2011).
Source: Kristoffersen (2016).

erally exhibit greater geographical job mobility than women, cf. Chart 3. Besides, there are clear indications that younger employees in particular are willing to find a job in another municipality, while the extent of geographical job mobility is lower among those with children living at home. This illustrates that younger employees constitute an important part of a flexible labour market.

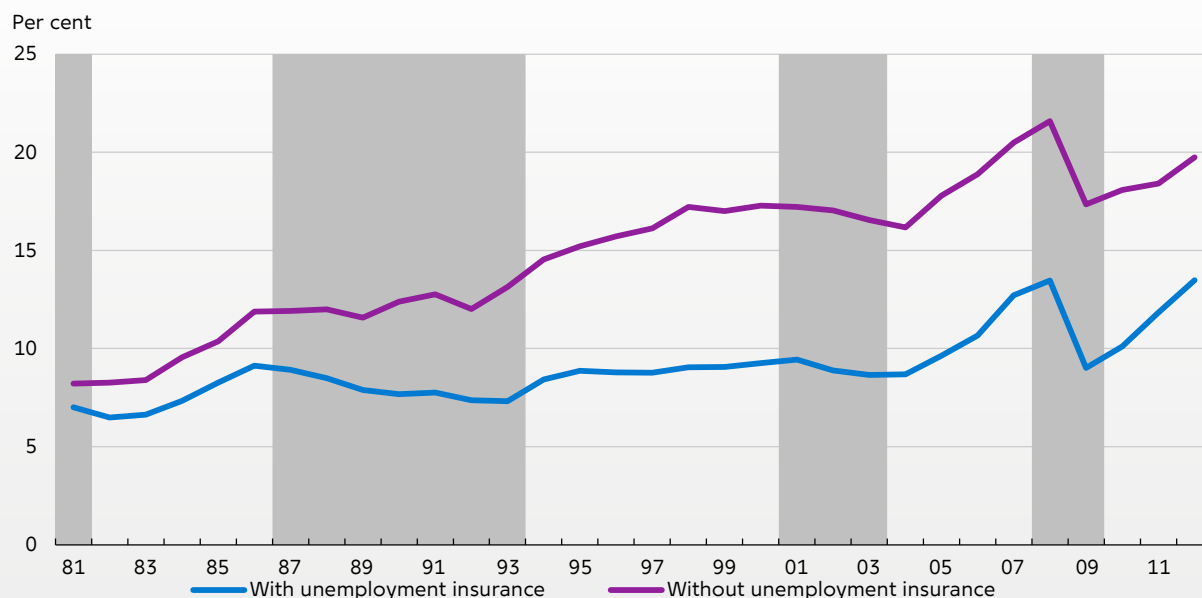
Employees living in the Capital Region of Denmark exhibit a higher degree of geographical job mobility than those living in the rest of Denmark, especially compared to the North Denmark Region (Northern Jutland). This is partly explained by the fact that the geographical distance between municipalities is greater in Northern Jutland than in the Capital Region. Accordingly, switching

to a workplace in another municipality more often requires moving to another address in Northern Jutland compared with the Capital Region. Hence, the increase in overall geographical job mobility for all of Denmark may partly reflect a tendency for a number of employees to move from rural to urban areas.

Employees with unemployment insurance are less likely to switch to a workplace in another municipality than employees without unemployment insurance, cf. Chart 4. The difference in geographical job mobility between the two groups averages around 6 percentage points over the period 1981-2012. This is equivalent to around 60 per cent of overall geographical job mobility, which is at a level of around 10 per cent, cf. Chart 2.

Geographical job mobility and unemployment insurance

Chart 4



Note: The chart shows the share of employees who changed to a workplace in a different municipality (after-reform) compared to the previous year. The unemployment insurance status is measured in the previous year. The grey areas show periods of economic downturn, cf. Abildgren et al. (2011).

Source: Kristoffersen (2016).

There are, however, many differences between the group of employees with unemployment insurance and the group of non-insured employees, e.g. in terms of their employment history and age composition. To get a closer idea of the link between geographical job mobility and unemployment insurance, an econometric analysis is conducted, taking a number of observable differences between the two groups into account. The analysis considers many of the factors expected to impact employees' decision of whether to switch to a workplace in another municipality, including both firm characteristics and personal characteristics such as gender, age, job experience, level of education, job function and employment history.

The difference in geographical job mobility between the two groups is around 0.5 percentage point over the period 1981-2012 when the differences observed between the groups are taken into account, cf. Kristoffersen (2016). This is the effect that can be attributed directly to whether an employee is insured against unemployment or not, and it corresponds to around 5 per cent of geographical job mobility overall.

The results match the findings of previous Danish and international studies. Economic Council

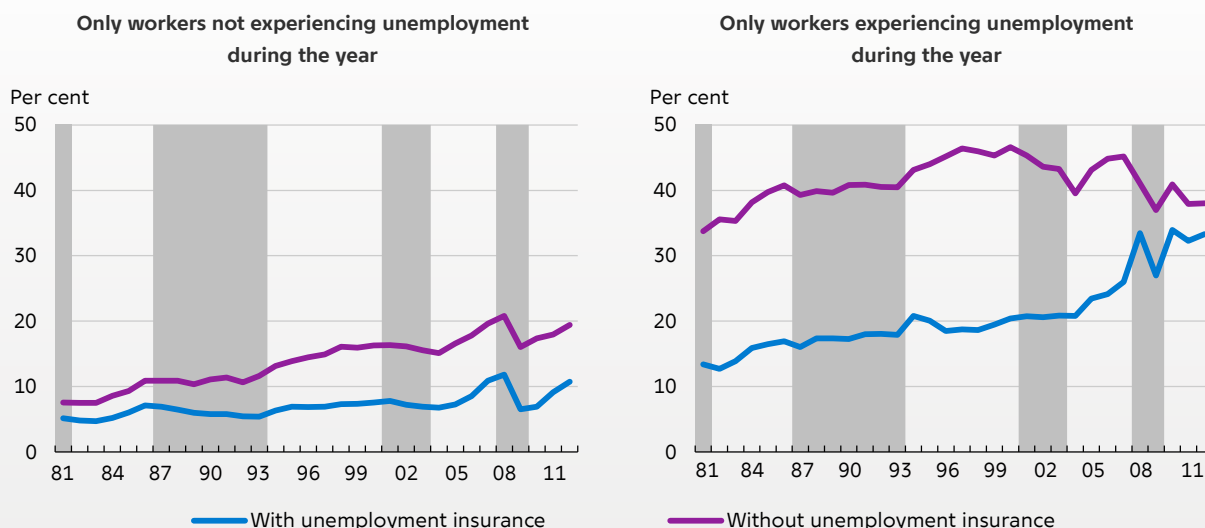
(2002) finds that a higher compensation rate for unemployed persons with unemployment insurance reduces the probability of finding a job in another geographical area more than it reduces the probability of finding a job locally. Based on Spanish data for the period 1987-1991, Antolin and Bover (1997) find that the estimated probability of moving to another region is higher among unemployed persons who do not receive unemployment benefits than among other groups.

Employees who experience unemployment during the year are more geographically job mobile than employees without a history of unemployment, cf. Chart 5. This is natural, since there is a greater incentive for unemployed people to find a new job than for those who have a job relative to the preceding year. Some of those jobs will be in another municipality. In principle, mobility among people without jobs can never get too high, as the need to retain skills built up during an existing employment relationship is not applicable to that group.

This should also be seen in the light of the rules on being available for work. In Denmark, recipients of unemployment benefits are required to accept up to three daily hours of public transport

Geographical job mobility and unemployment insurance, by history of unemployment

Chart 5



Note: The chart shows the share of employees who changed to a workplace in a different municipality (after-reform) compared to the previous year. The unemployment insurance status is measured in the previous year. The grey areas show periods of economic downturn, cf. Abildgren et al. (2011).

Source: Own calculations based on data from Statistics Denmark.

tation, and, after three months of unemployment in total, more than three daily hours of transportation, cf. Ministry of Employment (2015). Unemployed people with medium-cycle or long-cycle educations are required to accept job offers regardless of the transportation time if this is necessary in order to fill job vacancies with qualified labour.

There are clear indications of geographical job mobility having improved in recent years, particularly for employees with unemployment insurance who experience unemployment. This should be viewed in the light of the labour market reforms that have been implemented since the mid-1990s, including tightening of the availability rules and reduction of the unemployment benefit entitlement period. The narrowing of the spread in geographical job mobility between insured and non-insured employees who experience unemployment is confirmed by an econometric analysis, cf. Kristoffersen (2016).

WAGE FLEXIBILITY

Wage flexibility is another important aspect of labour market flexibility overall. This applies to individual firms as well as to the economy as a

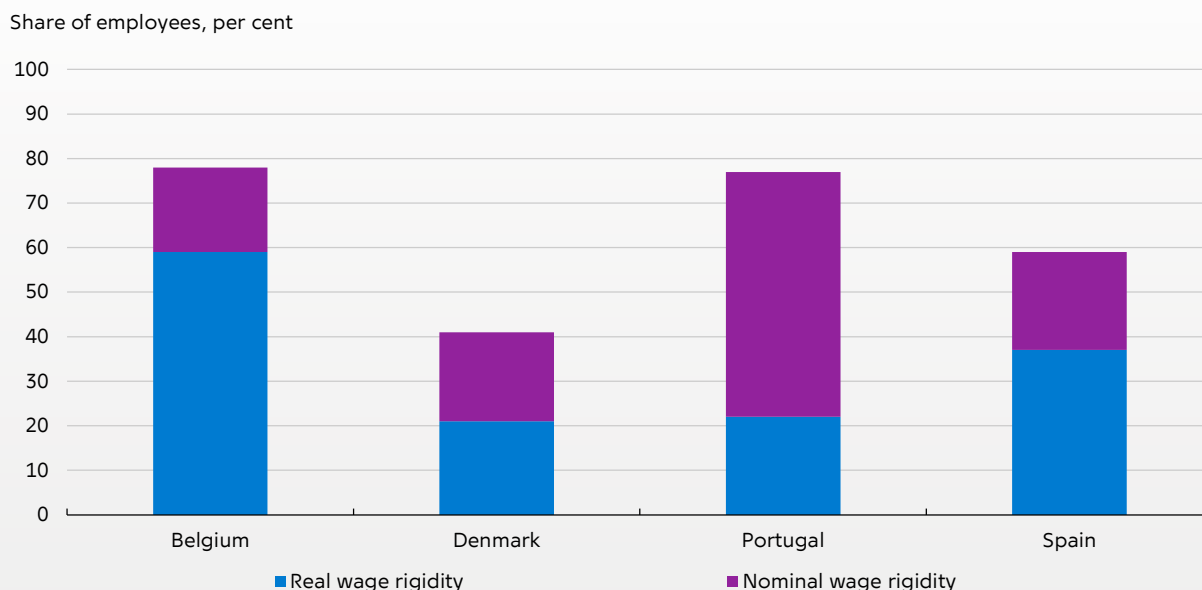
whole. The development in firms' costs is highly dependent on the wage development, cf. Storgaard (2009), so wage formation is an important element in the price setting. Moreover, flexible wage formation is essential in relation to effective utilisation of the economic resources.

In a small, open economy such as the Danish one, the wage development also plays a key role in relation to competitiveness. Higher wage increases than abroad lead to deteriorating competitiveness unless the wage increases reflect a more favourable productivity development, or that firms are able to sell their products at a higher price. The deteriorating competitiveness resulting from excessive wage increases has an adverse impact on exports and increases unemployment. Declining pressures on the labour market will gradually lead to lower wage increases than abroad, thereby restoring competitiveness. Hence, wage flexibility may dampen cyclical fluctuations, especially in countries with substantial foreign trade.¹

¹ It is worth noting, however, that enhanced wage flexibility does not necessarily cause faster adjustment following economic shocks and increased macroeconomic stability. Fast and stable adjustment to transitory shocks depends, among other things, on how quickly export prices adjust to the change in wages, cf. Hansen (1998).

Downward wage rigidity in an international comparison

Chart 6



Note: The chart shows the share of employees who are potentially affected by downward wage rigidity. The data is described in Box 1, while the method used is described in Kristoffersen (2016). For Denmark, a weighted average of the estimated wage rigidity across all industries considered is shown, using data for the period 1997-2010. The percentage employed in each industry is used as weight. For Belgium, Portugal and Spain, the results are from Messina et al. (2010), who use data from various sources over the period 1990-2007. Source: Own calculations based on data from Statistics Denmark and Messina et al. (2010).

Denmark's consistent fixed exchange rate policy since 1982 may have contributed to the development of a more flexible labour market, as there are no longer any expectations of currency devaluations countering the effect of high wage increases on competitiveness. This may have encouraged the establishment of a flexible labour market where wages can be adjusted to the current conditions.

Constraints to the possibilities of downward wage adjustment are referred to as downward wage rigidity. Downward wage rigidity is a potentially important barrier to wage flexibility in terms of both nominal wages, i.e. wages in monetary terms, and real wages. Both economic and legal constraints may impede downward wage adjustments. In a fixed exchange rate regime like the Danish one, it is particularly important that wages and prices can be adjusted to the current economic situation, cf. Mundell (1961). In periods of low inflation, downward rigidity in nominal wages will reduce the possibility of adjusting real wages to the economic situation.

On average for all industries, 21 per cent of Danish employees are potentially affected by

downward real wage rigidity, while 20 per cent are potentially affected by downward nominal wage rigidity. Overall, around 40 per cent of Danish employees are potentially affected by downward wage rigidity. This is a relatively small share by international standards, cf. Chart 6. The method used and the measures applied for wage rigidities (both nominal and real) are described in Kristoffersen (2016).

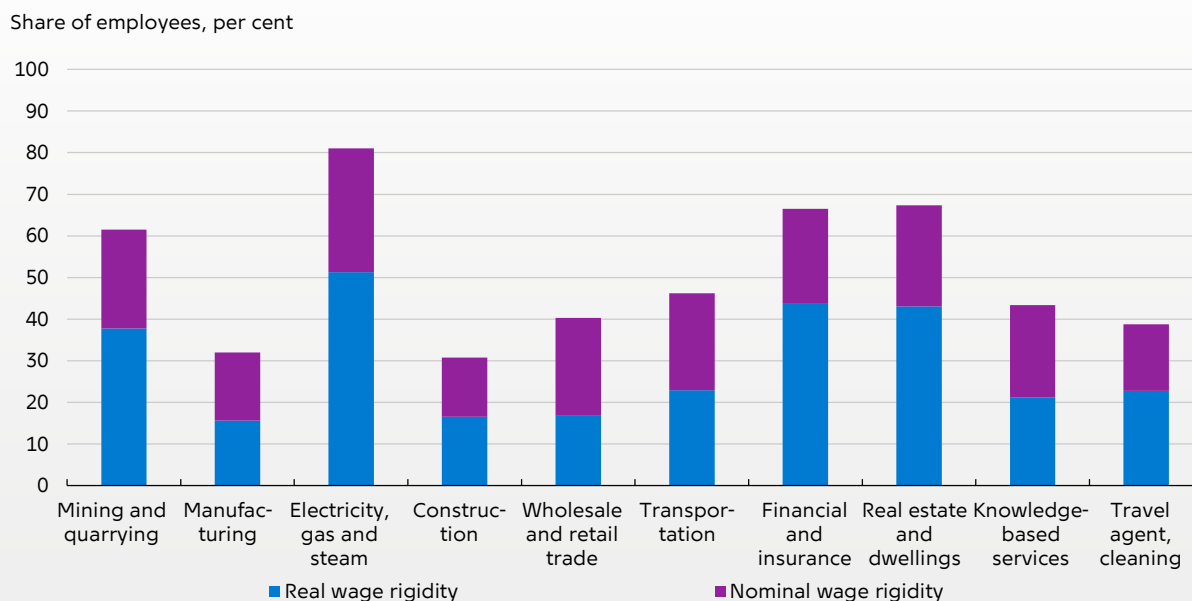
In an international comparison, the Danish labour market stands out due to its combination of relatively high union density and flexible wages. This should be viewed in light of the Danish labour market model where the social partners collectively determine wages and working conditions and in light of the trend towards decentralisation in collective bargaining. Since the late 1980s, flexible wage systems have gained ground in the Danish labour market with the trend towards more decentralised collective bargaining, cf. Hansen and Storgaard (2011).

WAGE FLEXIBILITY AND INDUSTRY

There are substantial differences in the incidence of downward wage rigidity across industries, cf.

Downward wage rigidity across industries, 1998-2010

Chart 7



Note: The chart shows the share of employees who are potentially affected by downward wage rigidity. The data is described in Box 1, while the method used is described in Kristoffersen (2016).
Source: Kristoffersen (2016).

Chart 7. Constraints to downward wage adjustment are most prevalent within energy supply, property trading, financing and insurance, and least prevalent within particularly competitive sectors such as construction and industry.

The differences across industries may reflect the wage bargaining structure. Downward wage rigidity is higher within transportation than within manufacturing. The transport sector is a “normal wage” area in which pay is typically determined at a central level by the social partners.² The manufacturing industry, on the other hand, is dominant within the minimum-wage area which generally has a more decentralised wage system, as only a wage rate is determined centrally as a lower bound for employees’ personal pay.

Within manufacturing, around 16 per cent of all employees were potentially affected by downward real wage rigidity, while 16 per cent were potentially affected by downward nominal wage rigidity. The estimates are very low in an interna-

tional comparison, cf. above, which supports the fact that wage flexibility is high in export-oriented industries in Denmark.

In the transport sector, around 23 per cent of employees were potentially affected by downward real wage rigidity, while 23 per cent were potentially affected by downward nominal wage rigidity. The incidence of downward wage rigidity is lowest within construction, where wage systems are typically based on individual contracts with performance-related pay.

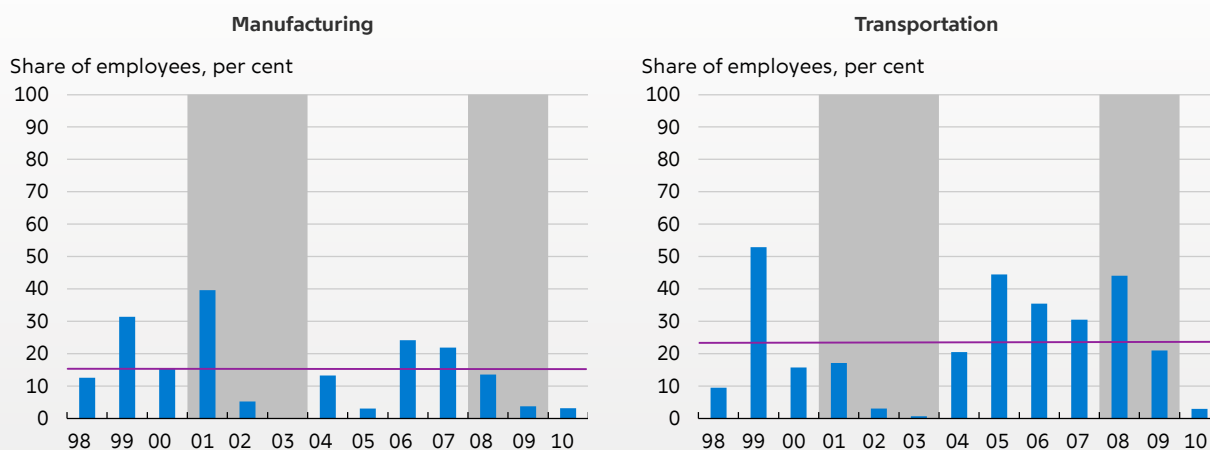
Messina et al. (2010) find that institutional differences across countries are more important for the degree of downward rigidity than differences across industries. There are, however, still significant differences in the prevalence of downward wage rigidity across industries within the individual countries. Real wages are found to be less downward rigid in industries with a high degree of firm-level wage bargaining. Nominal wages are found to be less downward rigid in industries with a high degree of product market competition, cf. Messina et al. (2010).

The incidence of downward real wage rigidity has also been higher in transportation than in manufacturing in most of the years 1998-2010, cf.

² However, in step with the trend for greater decentralisation of wage formation, it has become increasingly common to combine the normal wage with more flexible wage systems, cf. Hansen and Storgaard (2011).

Downward real wage rigidity over time

Chart 8



Note: The chart shows the share of employees who are potentially affected by downward real wage rigidity. The purple lines show the average for all years. The data is described in Box 1, while the method used is described in Kristoffersen (2016). The grey areas show periods of economic downturn, cf. Abildgren et al. (2011).

Source: Kristoffersen (2016).

Chart 8. In both these industries the incidence of downward real wage rigidity has tended to be higher in the first phase of an economic downturn than in later stages. These results are in line with evidence from the euro area, cf. Anderton et al. (2015). Their findings suggest that the wage response in the euro area was fairly limited during the first phase of the financial crisis from 2008, whereas wages were more responsive in the second phase of the crisis.

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WHAT IS DRIVING THE WEAK WORLD TRADE?

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INTRODUCTION AND SUMMARY

The last 50 years have been characterised by accelerating growth in international trade in goods and services. In this period, growth in international trade has outpaced output growth, implying a considerable increase in trade relative to GDP, i.e. the trade intensity. The intensified internationalisation has been driven by factors such as ongoing trade liberalisation measures, falling transportation costs and technological advances. This has resulted in considerable welfare gains.

The increase in trade intensity has flattened since the financial crisis in 2008 and the subsequent economic slowdown. This partly reflects the high degree of cyclicity of goods imports, whereby recent years' weak aggregate demand in a number of economies has made a negative contribution to trade growth, partly that the economic slowdown has put pressure on especially investment, which is relatively import intensive.

There are also indications that the sluggish growth in world trade reflects more structural drivers. A case in point is the development of global value chains, which is slower today than previously. This is emphasised by the lower contribution from increased trade in intermediate inputs to growth in world trade compared with previously. Similarly, structural shifts in the composition of global growth from countries with high import rates to countries with lower import rates may contribute to lower growth in world trade. Finally, there are indications of a slowdown in the pace of liberalisation of trade-restrictive tariffs and regulation, while the number of new

protectionist measures in a number of economies has risen slightly since the slowdown in 2008-09. It represents a problem if protectionist measures are dampening world trade because it results in a loss of welfare.

International trade has a positive effect on growth and prosperity. Especially small, open economies like Denmark stand to benefit from trading with other countries. The reason is that international trade gives access to larger markets, intensifies competition and offers opportunities for specialisation and knowledge sharing. In addition, free trade may result in welfare gains via higher purchasing power, as the prices of imported goods are lower than if the goods had been manufactured domestically. Moreover, Denmark's terms of trade have improved considerably, which has increased the consumption potential of Danish households. For a small, open economy like Denmark, it is thus important that economic policy supports free trade through international cooperation and other channels.

However, some parts of the economy may incur adjustment costs in connection with increased international trade. These costs will typically be concentrated in specific sectors that have been protected by a lack of domestic competition and which are exposed to competition from foreign manufacturers in free trade. This could cause a temporary reduction in employment and dampen wage increases for the groups concerned. Over time, labour will shift towards more competitive firms, resulting in higher wages. Similar dynamics

will apply in connection with technological advances, e.g. automation of certain job functions. A dynamic economy and a flexible labour market will reduce the adjustment costs.

THE RISING TREND IN WORLD TRADE HAS SUBSIDED SINCE THE CRISIS

INTERNATIONAL TRADE HAS INCREASED MARKEDLY OVER THE LAST 50 YEARS

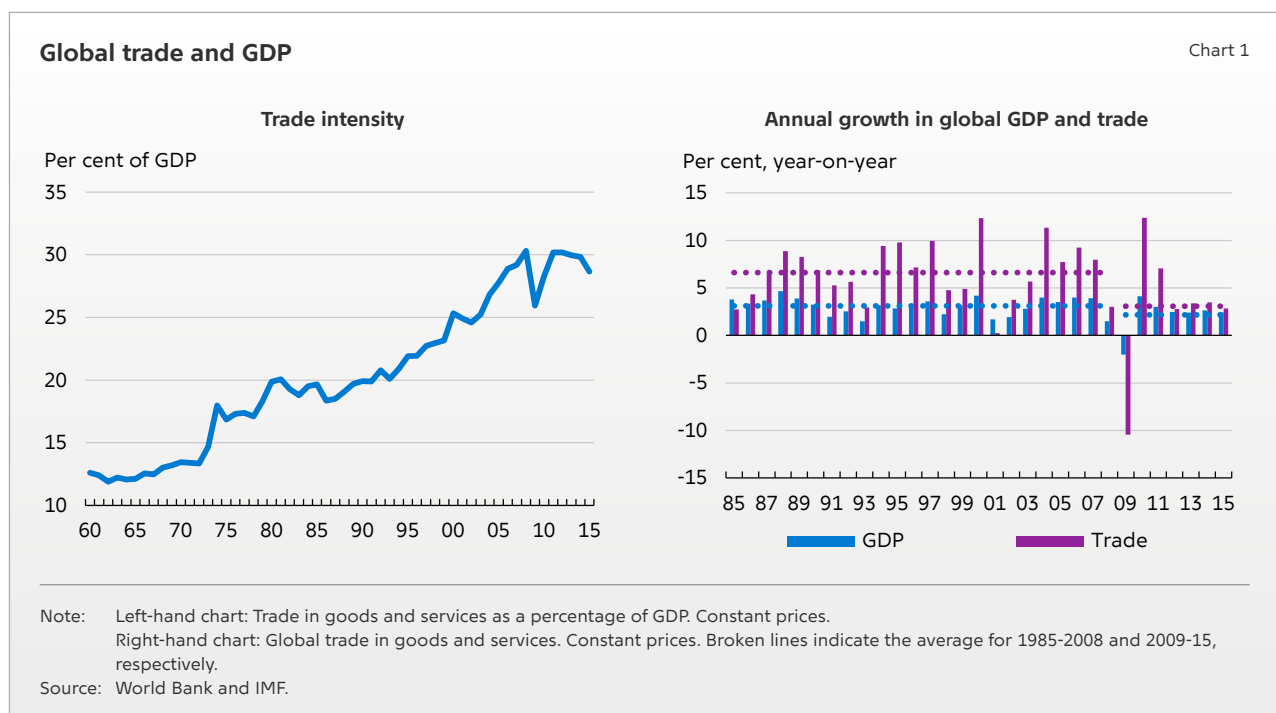
In the period 1960-2008, world trade as a percentage of the global gross domestic product, GDP, i.e. the trade intensity, rose from around 12 per cent to around 30 per cent, cf. Chart 1 (left). This meant that growth in world trade considerably outpaced total output growth. From 1985 to 2008, average annual growth in world trade in real terms was 6.6 per cent, compared with 3.1 per cent for global GDP. The long period of rising internationalisation is often attributed to ongoing trade liberalisation measures in the form of lower import tariffs and deregulation, falling transport costs and technological developments in general. This applies especially to the development in information technology, which has enabled division of the production process of many

types of goods and services, cf. the Productivity Commission (2013). This has contributed to the prevalence of global value chains with cross-border division of production processes, and it has also increased trade intensity, cf. Nellemann and Nissen (2016).

In the short term, the relationship between global trade in goods and services and GDP fluctuates considerably. This was observed e.g. during the economic downturn in 2008, when a marked slowdown was followed by a drop in world trade by more than 10 per cent, as GDP declined in the years 2008-09, cf. Chart 1 (right). In 2010, world trade rose by more than 12 per cent, while GDP grew by just over 4 per cent. These fluctuations reflect the high cyclical sensitivity of goods imports due to the fact that imports consist of a large share of industrial production, inventory investment and commodities, which by nature are cyclically sensitive. Short-term fluctuations in world trade will thus exceed those in GDP.

WEAK TREND IN WORLD TRADE IN RECENT YEARS

Despite relatively robust global economic growth, world trade has shown a weak trend since 2012. Annual growth in world trade averaged 3.1 per cent from 2012 to 2015. This is only half of the average since 1980, while global GDP growth was



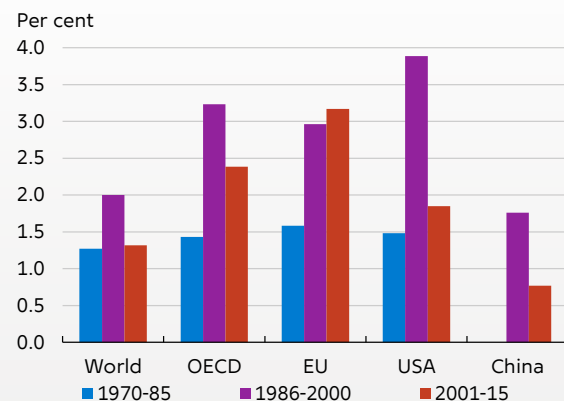
2.5 per cent, i.e. close to its historical average. This indicates a shift in recent years in the relationship between economic growth and growth in international trade – typically measured in terms of trade elasticity. This measure indicates the expected percentage increase in imports in the event of a 1 per cent increase in economic activity – in terms of GDP. If the elasticity is greater than one, the trade intensity will rise in step with economic growth.

In order to obtain an expression of how economic growth impacts world trade, a measure of long-run trade elasticity is estimated, cf. Box 1. According to the estimation the relationship between growth in global GDP and world trade has declined since the turn of the millennium, cf. Chart 2. In the period 1986-2000, world trade rose by 2 per cent on a 1 per cent increase in activity. Trade elasticity has since declined to 1.3, corresponding to the trade elasticity in the period 1970-85. Consequently, the relatively weak development in world trade in recent years can to some extent be regarded as a return to the situation before the intensive globalisation in the years leading up to the turn of the millennium.

A similar trend is seen at a more disaggregate level for the USA and China, while the trade elasticity for the EU rose in the 2000s. This reflects factors such as the enlargement of the EU with a number of Eastern European countries in 2004 and 2007 and the EU's deregulation of the internal

Long-run trade elasticities

Chart 2



Note: Elasticities are shown as long-run elasticities estimated using the model described in Box 1. For disaggregated economies, changes in relative import prices are taken into account. Data for China is not available for the period 1970-85. The elasticity for China in the period 2001-15 is insignificant. The EU covers all 28 member states for the whole period. The results are sensitive to the choice of period.

Source: Constantinescu et al. (2015), OECD and own calculations.

market for goods and services in that period. A large share of Danish exports goes to EU member states, the USA and China. Changes in trading patterns in these countries may thus impact the Danish economy, cf. Box 2.

SEVERAL DRIVERS OF LOWER GROWTH IN TRADE INTENSITY

Recent years' weak growth in world trade can be attributed to several factors. Hence, there are indications of a slowdown in several of the trends which previously contributed to boosting international trade. This includes the prevalence of global value chains, the lifting of trade barriers and the emergence of fewer new countries in the last 15 years relative to the period up to the turn of the millennium.¹ Other potential factors which could be dampening growth in global trade – also in future years – are both cyclical and structural shifts in aggregate demand as well as the geographical composition of growth.

Model for estimation of trade elasticities

Box 1

For analysis of the relationship between trade intensity and income, the following error correction model is used, based on Constantinescu et al. (2015).

$$\Delta \ln m_t = \alpha + \beta_1 \Delta \ln y_t + \beta_2 \Delta \ln relpris_t + \gamma \ln m_{t-1} + \delta \ln y_{t-1} + \varepsilon_t$$

where m_t is the import volume, y_t is real GDP and $relpris_t$ is relative import prices. Δ denotes first differences, α is a constant, and ε_t is the error term. In the model, the short-run trade elasticity is given by β , while the long-run elasticity is $-\delta/\gamma$. Here, the speed of adjustment of trade intensity to its long-run equilibrium is $-\gamma$. Hence, the long-run trade elasticity denotes the trade elasticity in the absence of short-run movements. If the elasticity is greater than 1, growth in trade intensity follows growth in world income. The model has been estimated on annual data from the World Bank, the IMF and the OECD using the ordinary least squares method.

1 More new countries increase international trade without global income rising.

International trade is very important to the Danish economy

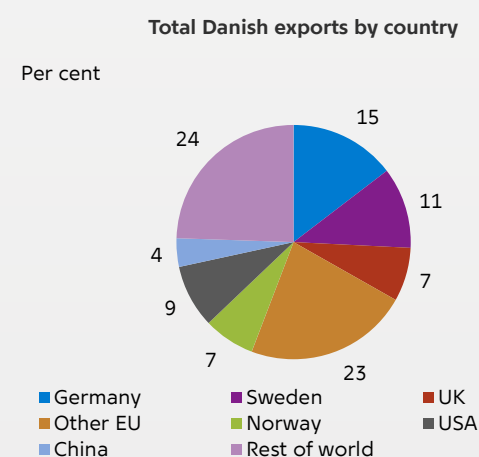
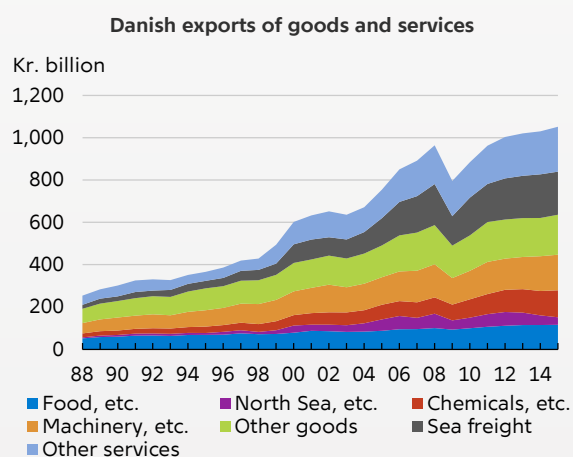
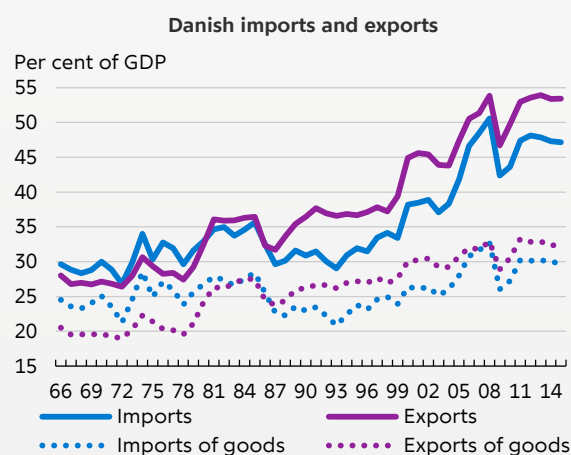
Box 2

International trade in goods and services is very important to the Danish economy. The shares of both imports and exports of GDP have shown a rising trend over the last 50 years, but have flattened at around 50 per cent since 2011, cf. the chart (top left). Services account for a large part of the increase in Denmark's international trade. Particularly trade in sea freight, which has e.g. benefited from the more pronounced cross-border division of production processes, has risen over the years. But trade in pharmaceutical products and North Sea commodities has also contributed to Denmark's export growth, cf. the chart (top right). Danish exports thus contain both relatively cyclically stable components, such as pharmaceuticals, and very cyclically sensitive components, such as sea freight. Recent years' declining North Sea production is part of the explanation of the stickiness in Denmark's export growth and is expected

to continue putting downward pressure on Danish exports in the coming years.

Denmark's foreign trade is concentrated on a limited number of large trading partners. Three quarters of Danish exports thus go to EU member states, Norway, China and the USA, cf. the chart (bottom left). Changed trade patterns in these countries may thus impact the Danish economy. This should be viewed in light of the large number of jobs associated with exports of goods and services. In 2011, almost 800,000 jobs in Denmark were thus linked to exports of goods and services, almost equally distributed between jobs directly and indirectly linked to exports, cf. Nellemann and Nissen (2016). Moreover, exports account for a relatively large share of Denmark's GDP, also in relation to Denmark's normally comparable countries. As a result, Denmark may be vulnerable to protectionist measures from other countries.

Denmark's foreign trade in goods and services



Note: Top left: Current prices.

Top right: Food, etc. covers foodstuffs, live animals, beverages, tobacco, animal and vegetable oils, fats and wax. North Sea, etc. covers minerals, fuels and lubricants. Chemicals, etc. also covers chemical products. Machinery, etc. also covers transport equipment. Other goods covers inedible crude materials except fuels, manufactured goods (primarily intermediate inputs), finished goods and other goods. Current prices.

Bottom left: Country shares of Danish exports in current prices in 2014. Other EU covers the other 24 member states: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Hungary, Netherlands, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia and Spain.

Source: Statistics Denmark and own calculations.

SLOWER DEVELOPMENT IN GLOBAL VALUE CHAINS

The strong dynamics of global value chains contributed particularly to the increasing trade intensity throughout the 1990s and in the early 2000s, cf. Nellesmann and Nissen (2016). Global value chains arise when activities for the production of finished products are distributed among firms across national borders. During periods of extensive growth in global value chains, growth in international trade will, all else equal, outpace GDP growth.²

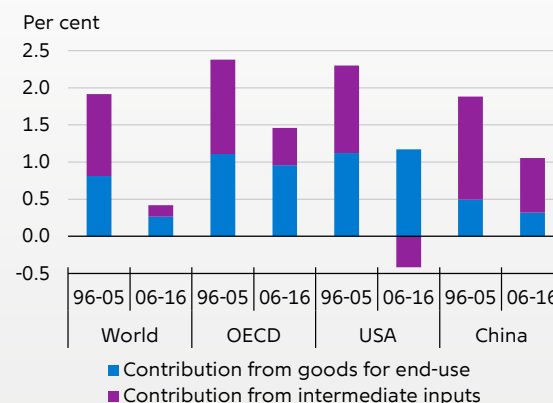
In the period 1996-2005, growth in world trade was predominantly driven by increased trade in intermediate inputs, cf. Chart 3, reflecting the more pronounced prevalence of global value chains. Since the mid-2000s the growth contribution from intermediate inputs has dropped by more than half in many countries and is even negative in the USA, while the growth contribution from finished goods has been roughly unchanged. The development of global value chains thus seems to have slowed down over the last decade. For example, the deepening of global value chains has subsided in China and the USA, cf. Constantinescu et al. (2015). One reason is that China is now producing more intermediate inputs in its own value chain. Previously, the country undertook mainly labour-intensive production processes. As a result, the share of import components in China's total exports has declined from 60 per cent in the mid-1990s to approximately 35 per cent today.

SHIFTS IN THE DEMAND COMPOSITION

The declining growth in world trade also reflects shifts in the composition of aggregate demand. This is due to the variation in the import content of the individual sub-components of demand. The import content is typically high for investment and exports, while it is slightly lower for private consumption. The relatively large share of services

Total import growth decomposed by contributions from goods for end-use and intermediate inputs

Chart 3



Note: Luxembourg and Slovakia are not included in the OECD countries.

Source: OECD, World Input-Output Database (WIOD) and own calculations.

in public consumption means that the import content is mostly low.³

A demand series, taking into account the import content of the various sub-components, is constructed in order to shed light on the effects of shifts in the demand composition.⁴ The decrease in trade intensity in the OECD countries after the crisis is partly attributable to the steeper fall in sub-components with a high import content, e.g. investment, cf. Chart 4. In recent years the two series have shown almost the same growth patterns. Consequently, the composition of GDP does not explain the weakness of world trade in the period 2012-15.

On the other hand, growth in the import-adjusted GDP was higher than growth in the total GDP in the second half of the 1990s and the mid-2000s. This means that during these periods demand for imported goods was higher than indicated by GDP. The trade elasticity for these

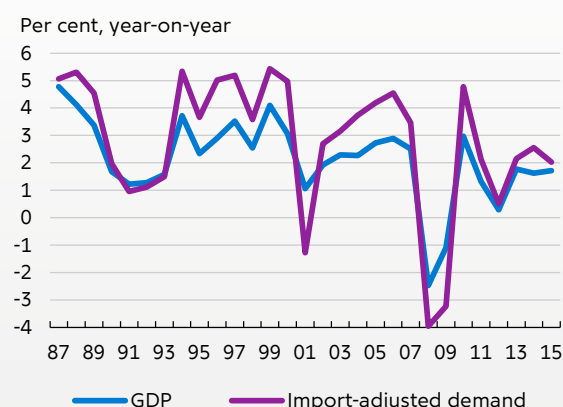
² The reason is that global trade is calculated in gross terms, thus including both trade in intermediate inputs between firms and goods and services for end-use. Conversely, total value added (measured in terms of GDP), i.e. the difference between the value of the products manufactured by the firm and the costs of intermediate inputs, remains the same whether the product creation activities take place in one country or across national borders.

³ Both direct and indirect import content is taken into account. The direct import content is contained in the end-use of a product or service, while the indirect import content is contained in the derived demand, resulting from the demand for domestically manufactured goods or services. Hence, exports have no direct import content but a relatively substantial indirect import content.

⁴ The import-adjusted demand is calculated by weighting each sub-component by its relative import content as performed in Busière et al. (2013).

GDP growth and import-adjusted demand, OECD

Chart 4



Note: In the chart, the OECD countries are: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Korea, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, the UK and the USA. These economies' imports account for more than 80 per cent of the OECD's total imports. The countries have been weighted on the basis of their shares of total imports. The import content has been linearly interpolated on a quarterly basis.

Source: Bussière et al. (2013), OECD and own calculations.

periods will thus be overestimated if GDP is used as a measure of demand. This also applies to the assessment of the decline in trade elasticity in recent years.

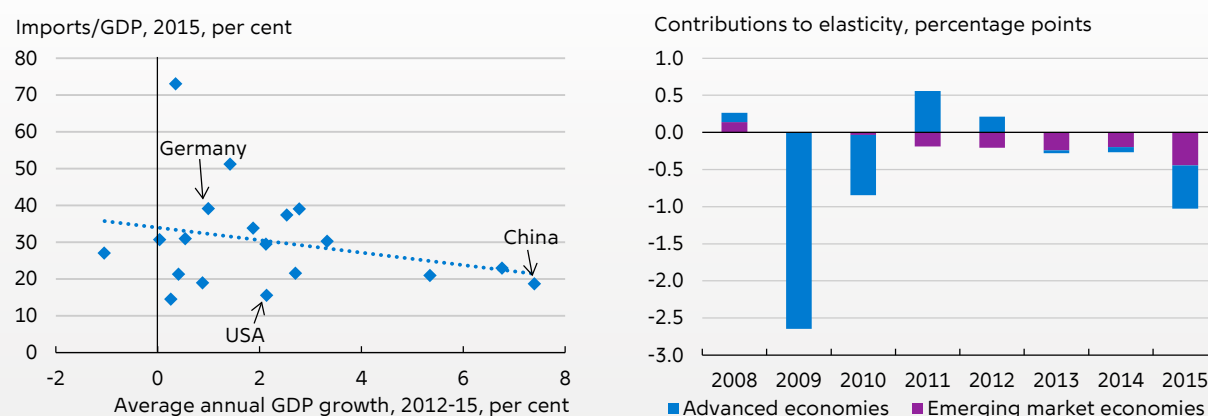
It should be noted that only the advanced OECD countries are included in the above and China is therefore not included. China and other emerging market economies are going through a structural transition these years where growth is to be driven more by consumption and less by investment. Viewed in isolation, this will exert downward pressure on the trade intensity.

GROWTH COMPOSITION ACROSS COUNTRIES CONTRIBUTES TO LOWER TRADE INTENSITY

The shifts in the geographical composition of growth have also contributed to lower global trade elasticity. Trade intensity and elasticity are typically lower in emerging market economies than in advanced economies, cf. Chart 2. A shift towards stronger growth in emerging market economies can thus put a damper on global trade elasticity even if trade elasticities are unchanged at the national level. In recent years global economic growth has been driven by economies with low trade intensity, cf. Chart 5 (left). This reflects low growth over a number of years in several European countries which generally have a high import ratio. This development may reflect cyclical factors to a certain extent. Given that growth will also be higher in the emerging market economies than in the advanced economies in future, this will, viewed in

Growth and trade intensity and regional contributions to global trade elasticity

Chart 5



Note: Left-hand chart: The dots show the countries Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Netherlands, Russia, Spain, Switzerland, Turkey, the UK and USA. The dotted line shows the trend line.

Right-hand chart: Shows the contribution to trade elasticity compared with a counterfactual scenario where each country's elasticity corresponds to the average for 1995-2007. Due to substantial year-on-year fluctuations, the elasticities of the individual countries have been calculated as 5-year moving averages.

Source: OECD, World Bank and own calculations.

isolation, dampen the development in the global trade intensity.

In order to illustrate the importance of geography in explaining the weak trade dynamics, actual global trade elasticity is compared with the elasticity that would have applied if the elasticities of the individual countries had corresponded to the pre-crisis average, cf. Chart 5 (right). The results show that the downturn in global trade in the first years after the crisis was attributable to developments in the advanced economies, indicating that it can be regarded as a cyclical phenomenon. Since 2012, however, the decline has been driven primarily by the emerging market economies, especially China. This development is probably partly due to structural factors, such as slower deepening of value chains, etc., as mentioned earlier.

SLOWER LIFTING OF TRADE BARRIERS

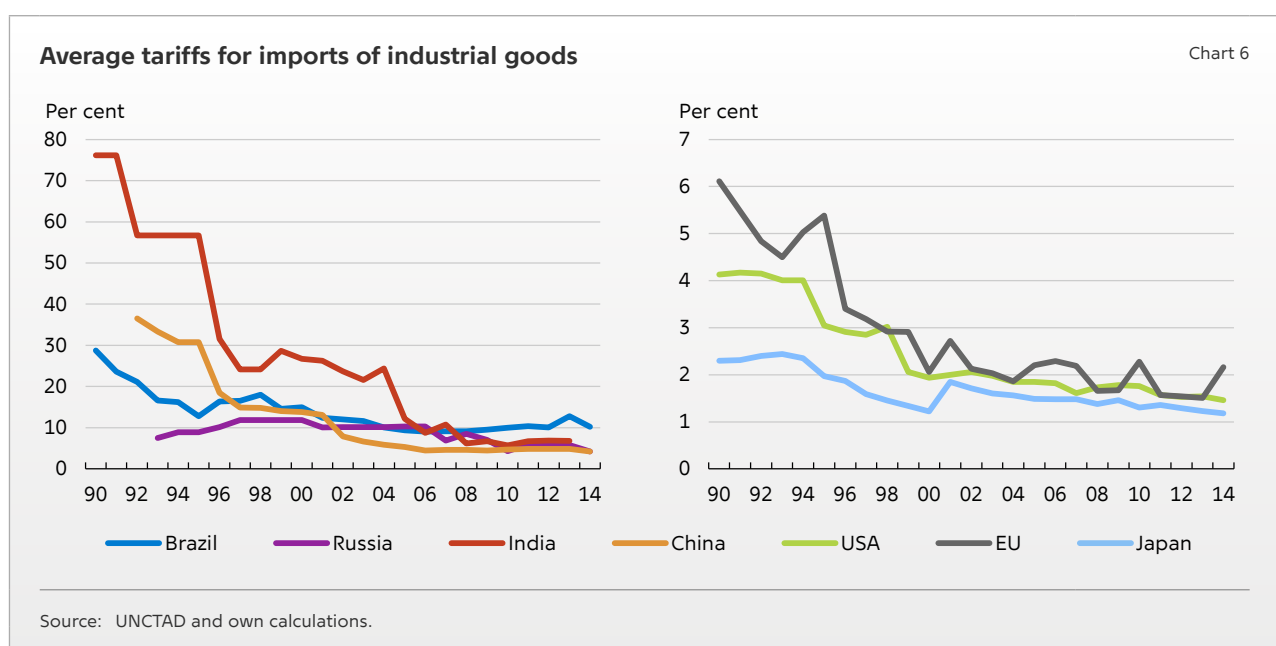
The increasing internationalisation throughout the 1990s was very much supported by measures aimed at lifting import quotas, reducing tariff rates and deregulating the internal market. This has contributed to enhancing prosperity. The average tariff rates for industrial goods fell considerably in both advanced economies and large emerging market economies from 1990 until the early 2000s, cf. Chart 6.

Since 2000, average tariff rates have declined at a slower pace. This partly reflects the current

relatively low tariff level, especially in western countries whose potential for further tariff cuts is smaller than previously. However, lifting of non-tariff trade barriers such as national product standards, administration and authorisations, etc., still offers great potential. The internal market in the EU has played a key role in this respect over a number of years, as harmonisation of product standards has enabled exporters to export the same product to several countries. There is still scope for continued deregulation and harmonisation and for lifting barriers for trade with non-EU countries.

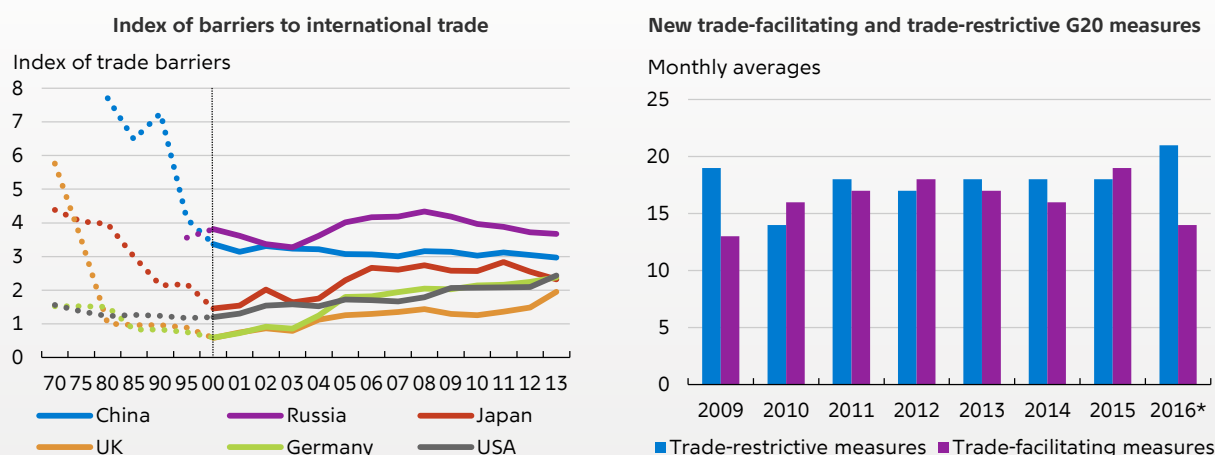
The international focus on liberalisation of international trade has been less pronounced in recent years. This is partly reflected in a slight increase in the Fraser Institute's index for international trade barriers for a wide range of countries in recent years, cf. Chart 7 (left). This index, which covers both tariff and non-tariff trade barriers and restrictions on the mobility of capital and labour, has risen for Germany, the UK and the US, among other countries.

According to the WTO the number of new trade barriers has also risen in recent years, cf. Chart 7 (right). The statistics show the number of new trade measures, irrespective of nature and scope, which makes it difficult to calculate the extent to which new protectionist initiatives dampen growth in world trade. Bown (2009), Kee et al. (2013) and Constantinescu et al. (2015) find that



Index of barriers to international trade and new trade-facilitating and trade-restrictive G20 measures

Chart 7



Note: Left-hand chart: The index contains tariffs, regulatory trade barriers, barriers to the mobility of capital and labour, and exchange rates on the black market. This index is the inverse of the Fraser Institute's index, which may have a value of between 0 and 10. An increase in the index indicates increased international trade restrictions. Right-hand chart: * 2016 covers the months from October 2015 to May 2016. The measures include both tariff-related and non-tariff trade barriers.

Source: WTO (2016), Fraser Institute and own calculations.

new trade barriers account for a very small part of the weaker growth in world trade. One reason is that these measures affect a relatively limited share of global imports.⁵ On the other hand, the slower lifting of trade barriers in the last 15 years, relative to the 1990s, may have made a larger contribution to weaker growth in global trade. In so far as world trade is dampened by protectionist tendencies, this constitutes a problem as it is associated with a loss of welfare.

FREE TRADE HAS SIGNIFICANT ADVANTAGES

Overall, international trade has a positive economic effect via increased productivity and prosperity. Especially small, open economies like Denmark stand to benefit from trading with other countries. One reason is that free trade intensifies competition and gives access to larger markets and hence opportunities for economies of scale, specialisation and knowledge sharing. The possibility of importing a number of products from abroad releases resources and labour for use in

Classical trade theory

Box 3

The basic principle of economic trade theory is the principle of comparative advantage, cf. Ricardo (1817). As illustration of the principle, the original article operates with two economies, each capable of producing two types of goods. Comparative advantage is when an economy is able to produce a product relatively cheaply measured by the number of other goods which are thus not produced domestically. Both countries in the example will benefit economically from specialising in production of the goods for which their productivity is relatively highest and then trade with each other. Comparative advantages will persist even if one economy has a higher level of productivity for all types of goods (absolute advantage). This explains why it will be an advantage for both advanced and developing economies to trade with each other. The result can be generalised as an example with several countries and several traded goods, cf. Dornbusch et al. (1977).

Comparative advantage, and hence which goods an economy wants to export, is determined by several factors. For example, an economy with a large capital stock tend to export goods, the production of which is relatively capital-intensive, while countries with a relatively large labour force and a limited capital stock tend to export goods, the production of which is relative labour-intensive. This also applies to countries with large deposits of raw materials, cf. Ohlin (1993).

⁵ WTO (2016) estimates that around 5 per cent of the world's imports are affected by the trade-restrictive measures introduced since 2008.

Economic gains from free trade – a review of recent studies

Box 4

The access to data concerning more than 50 years has formed the basis for many empirical analyses throwing light on the economic gains from increased free trade. In general, there is broad consensus on the advantages of trade liberalisation. Increased free trade is expected to entail productivity growth and thus improved prosperity. Moreover, free trade may lead to higher wages via higher productivity, although this effect should be expected to be unevenly distributed across sectors.

A relatively new study, OECD (2011), estimates that global halving of tariffs would boost GDP by up to 7 per cent, depending on country-specific characteristics. The gains are strongest in the long term when especially the developing economies stand to gain from fewer trade barriers. The World Bank, too, emphasises the benefits of increased free trade. On the basis of data for more than 100 countries over almost 50 years, it is evidenced that in economies with trade-liberalising policies real growth was, on average, 1.5 percentage points higher than before the liberalisation measures (Wacziarg and Welch, 2008). A recent IMF Working Paper takes a more specific approach to potential productivity gains from lifting trade barriers in a number of advanced economies. It finds that countries which decide unilaterally to remove all tariffs will be able to boost total productivity and prosperity by around 1 per cent, cf. Ahn et al. (2016).

There is also general consensus that increased free trade will have positive effects on employment. For example, OECD (2011) finds that lifting of half of the trade barriers in the G20 countries (both tariff and non-tariff barriers) will boost employment across emerging market and advanced economies by around 0.9-3.0 per cent. Felbermayr et al.

(2011) also estimate that a 10 per cent increase in the trade openness of the OECD countries can reduce unemployment by approximately 1 percentage point. Furthermore, they find that the positive employment effect stems from productivity increases resulting from free trade. In the short term, however, the consensus about the employment effects of free trade is less pronounced. For example, Dutt et al. (2009) find that an average permanent trade liberalisation in the period 1950-2001 was associated with an immediate increase in unemployment, which was more than offset after three years, however, at which time it can be expected to decline by 3.5 per cent.

Moreover, empirical studies often find that free trade may lead to higher wages, especially in export-oriented sectors. In an extensive case study, Mayer and Ottaviano (2007) find that in Western European countries, export-intensive industries pay wages that are, on average, 2-20 per cent higher than those in non-export-intensive industries. Riker (2015) finds, after examining the US labour market, that exporters, on average, pay around 16 per cent higher wages. The study is adjusted for level of education, experience, geography and demographics.

Despite the broad consensus about positive effects of free trade, it is important to emphasise that the empirical studies are subject to some uncertainty and methodological challenges in connection with defining and measuring trade barriers, identifying causality (higher-growth countries tend to trade more openly with other countries) and isolating the effect of free trade (trade-liberalising policies are often associated with concurrent implementation of other structure-enhancing economic policies).

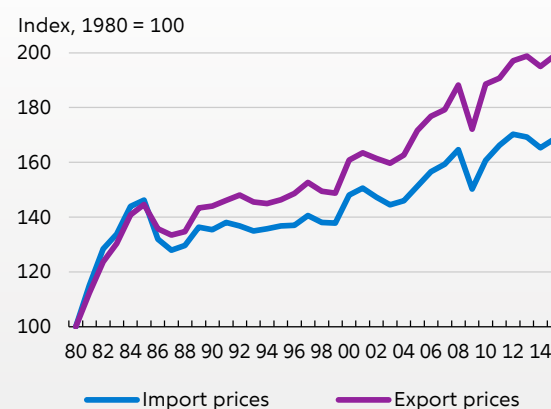
sectors where Denmark has a comparative advantage, e.g. the pharmaceutical industry. If two countries that used to be closed instead manufacture and export goods and services in their respective areas of relatively highest productivity, the level of prosperity increases in both countries, cf. Box 3. New empirical analyses support the positive effects of free trade, cf. Box 4. According to these studies, increased free trade generates productivity, employment gains and higher wages.

Not only does free trade ensure greater variation in the goods and services that are accessible for Danish consumers. Intensified competition and a global division of labour also contribute to ensuring welfare gains through greater purchasing power. This is because the prices of imported goods are lower than if the goods had to be manufactured domestically.

Moreover, Denmark's international terms of trade have improved considerably, cf. Chart 8. Over the last decade the total increase in export prices has been twice the increase in import prices

Danish import and export prices

Chart 8



Note: The chart shows the respective deflators for imports and exports of goods and services in the national accounts.
Source: OECD, Statistics Denmark.

es. This helps to improve consumption opportunities for Danish consumers. Denmark's improvement of the terms of trade contrasts with several neighbouring countries whose terms of trade have either been constant or falling. According to the Productivity Commission (2013), this development reflects primarily differences in industry composition. For example, Denmark imports electronics, for which prices have been falling, while this is not the case for a number of export industries, such as the pharmaceutical industry.⁶

However, liberalisation of international trade may also entail adjustment costs. These costs tend to be concentrated, while gains are broad-based. For example, intensified international competition – like domestic competition – can be expected to cause firms with low productivity to close down. Increased free trade may thus lead to sectoral shifts, which may result in higher unemployment for the labour groups concerned in the adjustment phase. Over time, such available resources will be used in more competitive firms where wage levels are higher. Similar dynamics apply in connection with technological advances, e.g. automation of certain job functions. No systematic rise in unemployment across the OECD countries has been observed during the period of strong globalisation.

Free trade may also make Danish firms more vulnerable to periods of slowdown in the export markets. However, access to international markets also means that firms are more robust against negative shocks, as they do not only depend on domestic demand, cf. Gamberoni et al. (2010). This is particularly important to a country like Denmark, whose exports account for a large share of GDP.

The potential adjustment costs resulting from increased free trade emphasise the need for a dynamic economy and a flexible labour market. The Danish labour market is one of the most flexible in the EU, characterised by a high degree of job mobility, cf. the article *Geographical job mobility and wage flexibility* in this Monetary Review. Accordingly, it is relatively easy to fire and hire employees, while the opportunities of further edu-

cation and training enhance the Danes' prospects of finding a new job. This enables the necessary adjustment to take place as quickly as possible, realising the economic benefits.

Given the economic advantages of international trade it is crucial for a small, open economy like Denmark to have economic policy supporting free trade via international cooperation and other channels.

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CURRENT TRENDS IN THE FAROESE ECONOMY

INTRODUCTION AND SUMMARY

The boom that began in 2013 seems to be gathering strength in 2016. In its most recent projection, from September, the Economic Council for the Faroe Islands, ECFI, has made an upward adjustment to its forecast of growth in the output value (gross domestic product, GDP) in 2016 and 2017. Both employment and wage expenditures are rising compared with last year, and wage earners' purchasing power is further boosted by falling consumer prices. In March 2016, the Faroese government assessed output to be above the capacity of the economy, which is expected to be 4.3 per cent of GDP in 2016, measured by the output gap. Hence, there is a risk of overheating, especially in the construction sector. At the same time, central and local government and publicly owned companies are planning massive investments in e.g. infrastructure and hospitals. Investment in 2016 is expected to total kr. 1.3 billion (7.3 per cent of GDP), which is 20 per cent higher than in 2014. Public sector investment is expected to rise by a

further 34 per cent until 2018. Consequently, there is a risk that the public sector and publicly owned companies contribute to pushing the economy further beyond its capacity limit.

There are indications of growth in public and private consumption in 2016. The rise in employment is distributed across nearly all sectors, but is particularly pronounced in aquaculture. Unemployment is approaching a record-low level. Growth in fisheries seems to have peaked, but the aquaculture industry is trying to expand its production capacity by investing heavily in onshore facilities.

The Finance Act operates with a central government surplus for the first time in eight years. However, this is mainly attributable to budget effects of the strong cyclical position. The Faroese government expects the structural deficit in 2016 to be 1.1 per cent of GDP. Add to this considerable demographic challenges that will gradually intensify over the next 40 years. In 2015, the ECFI

The Faroese government should tighten fiscal policy and ensure long-term sustainability

After several years of rising export earnings, driven by e.g. high prices for farmed salmon and good catches of mackerel and herring, the boom is gathering strength in 2016. The Economic Council for the Faroe Islands expects that growth in the next couple of years will be driven by both domestic and foreign demand, especially very large investments in the public sector and in publicly owned companies. There is a risk that the economy will overheat, particularly in the construction sector. Against that background, Denmark's

Nationalbank assesses that

- the structural government deficit should be replaced by a surplus sooner than planned,
- the long-term challenges to fiscal sustainability should be addressed now, and
- central and local government budgets should be coordinated better so as to ensure coherent management of government finances.

estimated that fiscal policy must be permanently tightened by 5 per cent of GDP if the government debt is to be stabilised in the long term.

Historically, public consumption and investment have at times contributed to amplifying cyclical fluctuations. There is a risk that the government will repeat this pattern in the current boom, and it should consider postponing some of the very large investments until the economy has shifted to a lower gear. In addition, the Faroese government should replace the structural deficit by a surplus sooner than planned. With a booming economy and large profits in the fisheries-related industries, now is also a good time to tackle the long-term challenge of fiscal sustainability. This can be achieved via reforms to increase the supply of labour, e.g. by gradually postponing the retirement age, and by giving the central government a larger share of the “economic rent” from the fisheries-related industries. This will reduce higher-than-normal profits and high wages in parts of the fisheries sector. But in the assessment of the ECFI, these two measures will address only two thirds of the challenge.

THE UPSWING IS ACCELERATING IN 2016

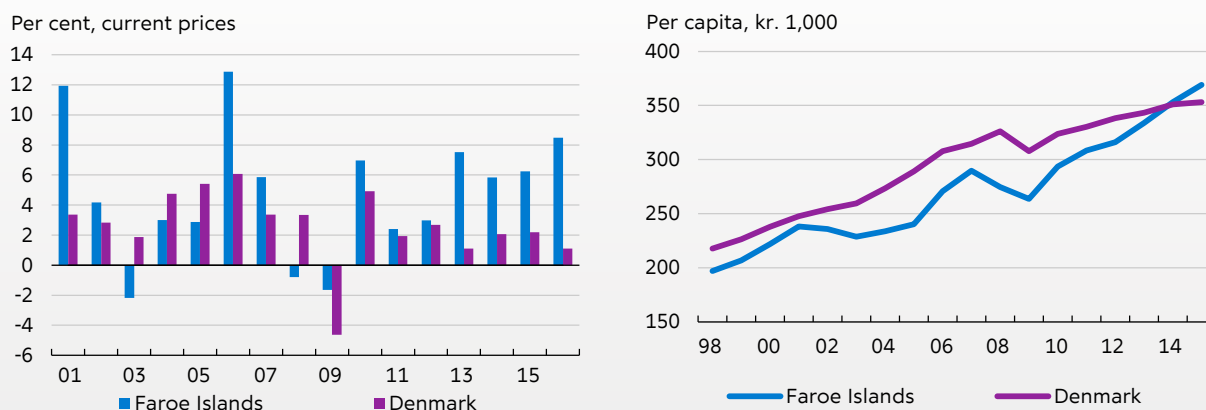
According to the most recent estimate, the output value rose by 6.2 per cent in 2015, which is more or less the same as in recent years, cf. the national

accounts table in the Appendix and Chart 1. The Faroese national accounts are compiled in value terms only (current prices), so all figures in this article are in current prices. Overall output has increased by 21 per cent since the upswing began in 2013. According to the ECFI’s most recent projection, from September 2016, the upswing is expected to accelerate in 2016 and output is forecast to rise by 8.5 per cent. In its spring projection, the ECFI expected growth of 5.3 per cent in 2016. However, dependence on aquaculture and fisheries, where activity varies with the size of stocks, implies strong volatility in the economy. Since the financial crisis, growth in output has been higher than in Denmark, and output per capita in the Faroe Islands matched the Danish level in 2015. But gross national disposable income per capita was higher than in Denmark due to the block grant from the Danish government and net wage income from people working abroad but living in the Faroe Islands.

While the upswing was initially driven mainly by exports, economic growth over the last year has been fuelled primarily by domestic demand, and especially by higher private consumption. Car sales are usually a good indicator of developments in private consumption. The number of new passenger cars rose by almost 12 per cent in 2015 and by more than 13 per cent year-on-year in the first seven months of 2016. As the value of imported passenger cars rose by more than 25 per cent in 2015, people are also buying more expensive cars.

Output growth has led to higher prosperity in the Faroe Islands than in Denmark

Chart 1



Note: GDP and gross national income in current prices. Figures for 2014-15 are preliminary, figures for 2016 are projections.
Source: Hagstova Føroya, Statistics Denmark, Danmarks Nationalbank and own calculations.

The level of investment decreased further in 2014, reflecting lower purchases of new aircraft and ships, which are to a large extent imported and therefore have no immediate impact on activity. Wage expenditures in the construction sector rose by more than 10 per cent in 2015 and a good 12 per cent year-on-year in the 1st half of 2016, indicating that fixed investments are still rising. Following a 3.5 per cent increase in 2013, public consumption remained unchanged in 2014. Public sector wage expenditures point to a substantial increase in public spending in 2015 and the 1st half of 2016, which will boost economic activity.

According to the ECFI, central and local government and publicly owned companies are planning a series of large investments totalling kr. 1.3 billion (7.3 per cent of GDP) in 2016. This is 20 per cent higher than in 2014. Investments are expected to rise by a further 34 per cent until 2018. For example, two new tunnels at a total price of kr. 2.1 billion (13 per cent of GDP) are planned for the period 2016-21. In a Danish context this would correspond to more than four Fehmarn Belt tunnels.¹ Many of these investments have a large import content, but on account of their total size they will contribute substantially to economic growth and increase the risk of bottlenecks, especially within the construction sector, where there are already signs of overheating. Seven in ten construction firms say that shortage of labour is an impediment to growth. Hence, the magnitude of the public investments and investments in publicly owned companies could further push the economy beyond its capacity limit.

Further growth in fish exports in 2015 meant that the value of exports of goods, excluding ships and aircraft, rose by just over 7 per cent in 2015. Imports of goods, excluding ships and aircraft, fell by 2.6 per cent. The main underlying factor was a decline of more than 30 per cent in the import value of fuel, primarily because of lower oil prices in the world market. Preliminary data for the 1st half of 2016 shows that the value of exports, excluding ships and aircraft, has risen strongly. The price of salmon, which accounts for 45 per cent of exports, has risen considerably

since the turn of the year. Imports of goods, excluding ships and aircraft, have risen by 7 per cent year-on-year, mainly due to imports of machinery.

The surplus on the balance of trade in goods was kr. 757 million in 2015 (4.6 per cent of GDP), while the balance of services should be expected to have been negative. It has been negative by around kr. 1 billion in the most recent years for which figures are available. Add to this a positive contribution of kr. 700-800 million from wage income from people living in the Faroe Islands but working abroad (including in Denmark). Finally, there are transfers of approximately kr. 800 million, mainly in the form of the block grant from the Danish government. So the current account surplus for 2015 is expected to be considerable.

The biannual confidence indicators show that firms and consumers are generally not as optimistic about the economy as they have been in previous years. Especially the consumers take a less positive view of their own finances and the Faroese economy one year ahead. Thinner order books, expectations that sales prices will fall and reduced international competitive strength has caused industrial expectations to decline to a lower, but still positive, level. This is in line with the most recent ECFI projection, which shows that growth will fall to 4.1 per cent in 2017. But retail trade and especially the construction sector have very positive expectations.

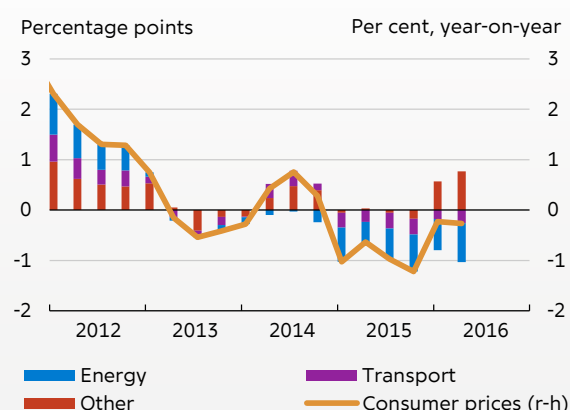
OIL PRICES ARE REDUCING THE PRICE LEVEL

Consumer prices have basically been falling since the spring of 2013, cf. Chart 2. In the 2nd quarter of 2016 they were 0.3 per cent lower than in the same quarter of 2015. Especially the falling oil prices in the world market in 2015 have had a downward impact on energy prices. Conversely, food, clothing and footwear are pushing the price index upwards. The low rate of consumer price inflation boosts household purchasing power and hence private consumption.

1 By comparison, the tunnel under the Fehmarn Belt between Denmark and Germany, which is to be built over 12 years, costs approximately kr. 65 billion, including onshore facilities, or 3.3 per cent of Denmark's GDP in 2015.

Falling energy prices are reducing consumer prices

Chart 2



Note: The weight of components on which oil and energy prices have a direct impact is more or less the same for Denmark and the Faroe Islands. However, the volatility of price indices for the energy components in connection with changes in oil prices is substantially higher in the Faroe Islands, partly reflecting a different taxation system. Unlike the Danish consumer price index, the Faroe price index includes interest expenses for housing instead of an imputed rental value of an owner-occupied dwelling. In the chart, the growth contribution from interest expenses for housing has been eliminated. "Other" includes rounding.

Source: Hagstova Føroya and own calculations.

RISING EMPLOYMENT

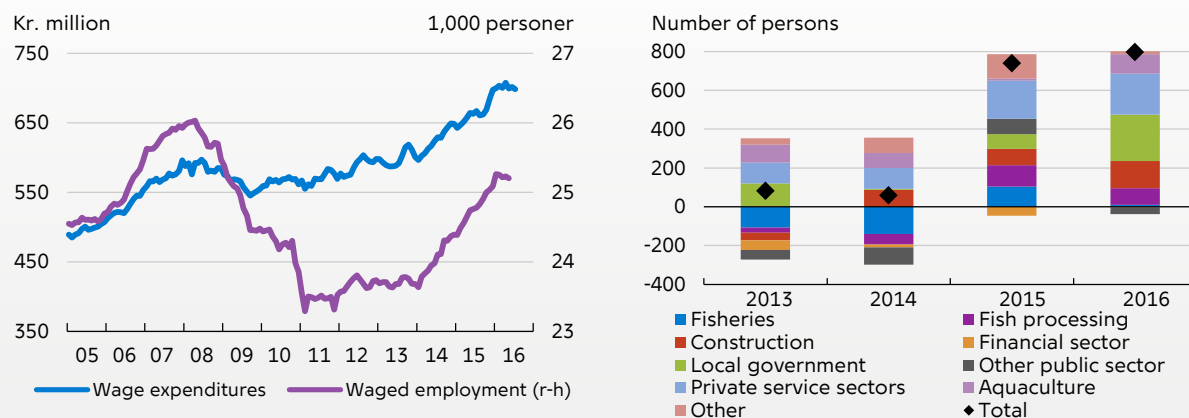
After having been stable in the preceding years, the number of wage earners rose for the third year running, cf. Chart 3. However, the rate of increase has declined a little so that the number of wage earners was 1.9 per cent higher in May 2016 than in May 2015. One year earlier, the annual growth rate had been 3.3 per cent. Growth in wage expenditures is high, but has subsided slightly, to 5.3 per cent year-on-year. In recent months the curve has flattened, however.

The rise in employment from 2015 to 2016 was broad-based across sectors, but measured by the number of persons it was highest in local government and in private service sectors, which have created more than half of all new jobs. The last year's increase in aquaculture has led to a sharp rise of approximately 11 per cent in employment. Productivity is high in this industry, which normally requires relatively little labour.²

Employment in construction has risen by more than 8 per cent due to e.g. the large public sector projects commenced recently. This more or less corresponds to the level seen in 2005, before

Especially the public sector and the private service sectors are taking on new employees

Chart 3



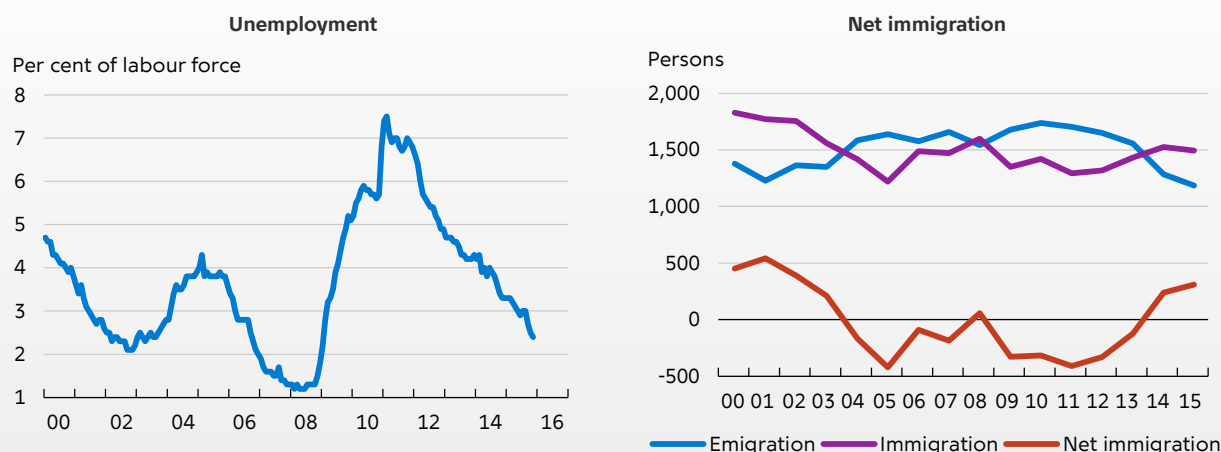
Note: Left-hand chart: Seasonally adjusted monthly data. 3-month moving averages for wage expenditures. The most recent observation is from May for waged employment and July for wage expenditures. Right-hand chart: Change in average employment in the 1st quarter of the period in question relative to the preceding year.

Source: Hagstova Føroya and own calculations.

² Aquaculture employs less than 4 per cent of wage earners, but generates around 7 per cent of gross value added.

Strong growth in employment boosts net immigration and reduces unemployment

Chart 4



Note: Seasonally adjusted monthly data for the unemployment rate. The most recent observation is from November 2015.
Source: Hagstova Føroya.

surging house prices at the peak of the business cycle led to a building boom.

Unemployment has decreased steadily since 2011, standing at 2.4 per cent of the labour force (seasonally adjusted) in November 2015. This means that it is approaching the record-low level seen during the most recent boom in 2007-08, cf. Chart 4. The low rate of unemployment is a sign of mounting capacity pressures and highlights the need for central and local government to avoid increasing the level of activity. At the same time, reforms should be introduced to boost the labour force.

A large number of Faroese people, especially skilled workers and builders, live in the Faroe Islands but work abroad, attracted by higher wages and tax benefits. The Faroese government may to some extent counter the shortage of labour by reducing the tax benefits. Besides dampening the risk of overheating, this would increase tax revenue. The level of unemployment is not directly comparable with the level in other economies, in that the Faroese population is relatively mobile and responds to high unemployment by emigrating. For example, the labour force shrank during the crisis as a result of net emigration, while the recent economic recovery has led to net immigration of people of working age and also to a higher participation rate.

THE VALUE OF FISH EXPORTS CONTINUES TO RISE

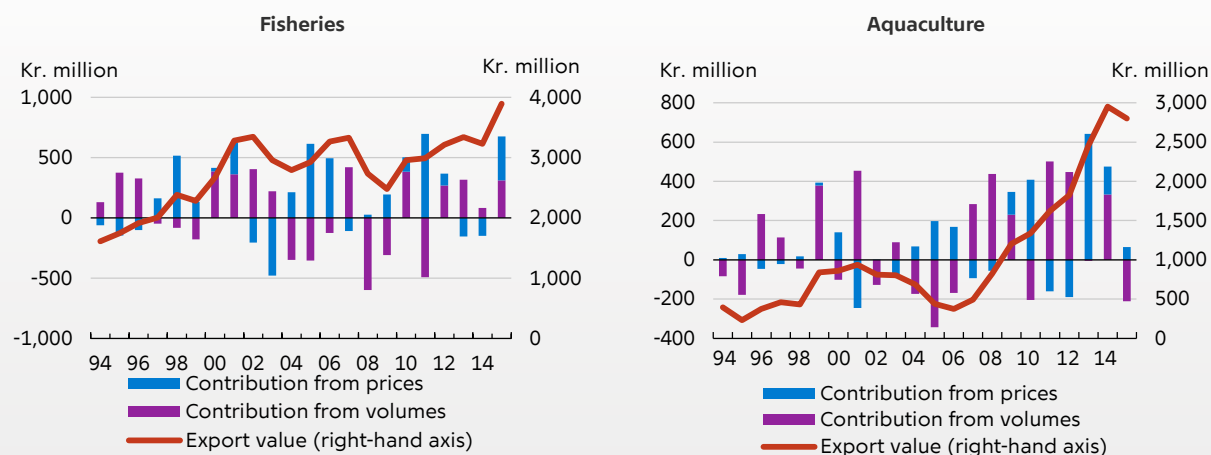
Fisheries and aquaculture account for around one sixth of total gross value added in the Faroe Islands and approximately 98 per cent of exports of goods, excluding ships and aircraft. This means that the Faroese economy is highly dependent on developments in catch volumes and fish prices. Both fluctuate considerably over time, but not necessarily in the same direction for the various branches of fisheries and species. The fact that earnings have increasingly been diversified across different branches of fisheries to some extent helps to reduce the vulnerability of the economy overall.

Fisheries saw substantial growth in 2015 and export values rose by more than 20 per cent, cf. Chart 5. This was attributable to a combination of rising prices and larger catches. Pelagic fishing for, inter alia, herring and mackerel is most profitable, while traditional demersal fishing, primarily for cod, saithe and haddock around the Faroe Islands, is still financially squeezed.

Demersal fishing is characterised by local stocks which do not migrate the way pelagic species do. So regulation is a local issue. Stocks of demersal fish are critically low for several species, and catches have been higher than recommended by marine biologists for many years, cf. Hegland and Hopkins (2014).

Growth in fisheries in 2015, but a small decline in aquaculture

Chart 5



Source: Hagstova Føroya and own calculations.

Earnings from pelagic fishing have risen strongly over the last five years, primarily because larger stocks of mackerel around the Faroe Islands have led to quadrupling of catches, which have also been sold at higher prices. In 2014, the Faroe Islands concluded a 5-year agreement with the EU and Norway that made it possible to catch the same volume of mackerel as in the preceding years. In 2010-13 the Faroe Islands had determined its own mackerel quota due to disagreement with the other countries.

In 2015, especially catches of herring increased, and in combination with substantially higher prices this boosted export values by more than 60 per cent. However, the export value of herring is only just over half the export value of mackerel. The Faroe Islands are not a party to the agreement between the EU, Norway, Iceland and Russia and kept their own herring quota at just over 40,000 tonnes in 2015, corresponding to the level in 2014. The Faroe Islands did not sign the agreement because of dissatisfaction with the share of just over 5 per cent allocated to the Faroe Islands in the agreement. So far, no agreement has been reached on herring and blue whiting quotas for 2016 and the Faroe Islands have unilaterally set a quota of 56,000 tonnes for herring and just over 347,000 tonnes for blue whiting (approximately 71,500 tonnes have been transferred from the 2015 quota).

Following eight years of continuous growth, aquaculture saw a small decline in 2015 due to

falling sales volumes. In 2016 to date, salmon prices have risen notably compared with 2015 prices. Lower expected catches of wild salmon in Alaska and algae in Chilean aquaculture facilities may reduce the supply of salmon in the 2nd half of 2016 so that prices will remain high in the short term.

Since Russia introduced a trade embargo on food from, inter alia, the EU, the Faroe Islands have achieved sales prices for salmon in the Russian market³ that are higher than the world market prices. The good sales opportunities meant that in 2015 Russia accounted for more than 25 per cent of the total value of Faroese exports, up from 17 per cent the year before. This makes Russia by far the largest single export market for the Faroe Islands, followed by the USA and the UK at just under 9 per cent each. Overall, the EU member states taken as one are still the Faroe Islands' primary trading partner, with a share of 41 per cent.

After several good years for pelagic fishing and aquaculture, it is doubtful whether the high growth rates can continue. Aquaculture production is close to its current capacity limit if disease is to be avoided. The largest Faroese firm, Bakka-frost, is planning investments of more than kr. 2 billion in onshore facilities over the next five years. According to the firm, this will make it possible to let the salmon grow larger before they are intro-

3 The Faroe Islands are not part of the EU.

duced into the fjords, thereby increasing capacity in the long term. In addition, it will make aquaculture less vulnerable to disease. As regards the pelagic sector, future growth will depend on the distribution of quotas between countries and the overall sustainability of fishing in the North East Atlantic Ocean. According to figures from the Faroe Marine Research Institute, the inflow of young demersal fish remains very low, which indicates that fishing activities cannot be increased for some time to come.

In January, the Faroese government set up a working group to prepare proposals for reforming the system for allocating fishing licences in the Faroe Islands when the current licences expire at the end of 2017. An important element of its terms of reference is that the new system is to do away with political allocation of fishing rights in favour of allocation on market terms. It is important that the process is transparent and ensures multi-year licensing, which will support investment in the industry. The reform should improve the government budget considerably. In recent years, the pelagic sector has been posting substantial higher-than-normal profits of around kr. 500 million p.a., known as “economic rent”, according to Ellefsen and Rógvi (2015). The authors note that the sum may very well have increased since then due to the mackerel fishing agreement.

INCREASING CUSTOMER FUNDING SURPLUSES IN FAROESE BANKS

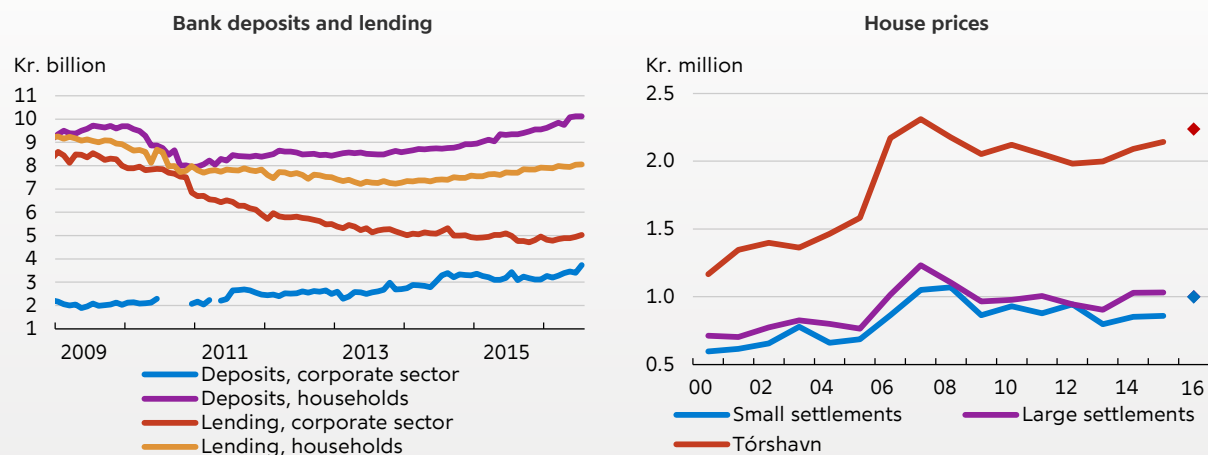
Lending by Faroese banks to the corporate sector has risen since the turn of the year, but remains lower than last year, while deposits continue to increase, cf. Chart 6. According to the banks, the development in lending is primarily attributable to very low demand. But the banks’ leverage, i.e. the sum of assets relative to equity capital, is relatively high compared with previous years.

The fisheries sector, which previously raised many loans and was a source of substantial credit losses for banks in crisis periods, borrows only little from banks now. Large investments are made mainly in pelagic fisheries and aquaculture. Both these sectors are currently operating with sizeable surpluses so that most investments can be funded by the firms themselves or repaid over a short period of time. Some of the loans for the largest investments in e.g. aquaculture are granted by foreign banks.

Household deposits increased by 8 per cent year-on-year in July. Household deposits exceeded kr. 10 billion in July, which is approximately 20 per cent higher than three years ago. At the same time, bank lending for housing purposes has risen by just under 5 per cent year-on-year in July, which is slightly higher than the growth rate seen

Increase in lending to households should be seen in the light of higher house prices in Tórshavn

Chart 6



Note: Left-hand chart: In September 2013, a new set of statistics was introduced, which is linked to the old set. Data for households and non-profit institutions serving households (NPISH) have been merged. The most recent observations are from July 2016. Right-hand chart: Data for the 1st quarter of 2016 only.

Source: Danmarks Nationalbank, Hagstova Føroya, Eik Bank and own calculations.

last year. This should be viewed in the light of an increase in house prices, especially in Tórshavn, of more than 8 per cent year-on-year in the 1st quarter of 2016. This means that prices have almost reached the 2008 level.⁴ The housing market is being driven by rising disposable income and low interest rates. This is also reflected in increased turnover in the housing market, which has risen by more than 25 per cent p.a. in the last two years. The Faroese housing market is generally characterised by shorter amortisation periods than in e.g. Denmark. This makes homeowners more resilient to shocks and dampens price developments. On the other hand, no land taxes or property value taxes are paid, and, all else equal, this reduces the user cost, thereby buoying up prices. Tax deductibility of interest on housing loans points in the same direction. The ceiling on and percentage rate of support for homeowners' interest costs have both been reduced gradually since 2009 so that in 2016, 35 per cent of interest

costs are refunded up to a ceiling of kr. 110,000. The ceiling will be lowered to kr. 100,000 p.a. in 2018.

FISCAL POLICY SHOULD BE TIGHTENED

Faroese government finances have shown deficits from 2008 to 2015, but the deficit is shrinking due to the economic boom. The deficits have mainly been attributable to the central government, while local governments have posted small surpluses. In 2015, the central government increased the surplus on its current budget to kr. 343 million as operating costs fell by more than revenue. But as in previous years, the current, investment and lending (CIL) balance was negative by 0.1 per cent of GDP, cf. Table 1. The 2016 Finance Act budgets for a CIL surplus of kr. 9 million (0.1 per cent of GDP), which is expected to be countered

Main items of the government accounts

Table 1

Kr. million	2013	2014	2015	2016	2017
Taxes and duties, etc.	3,686	4,014	3,884	3,919	..
Other revenue	63	62	51	68	..
Block grant from the Danish government	632	635	642	642	642
Total income	4,381	4,712	4,577	4,629	4,795
Operating costs	4,463	4,588	4,234	4,418	4,462
Fixed investments	237	360	341	186	280
Net interest expenses	94	18	84	16	3
Total expenses	4,794	4,966	4,659	4,620	4,745
Balance (CIL) central government	-413	-254	83	9	50
<i>Memo (per cent of GDP):</i>					
Balance (CIL) central government	-2.8	-1.6	-0.5	0.1	0.3
Structural government balance	-1.7	-1.6	-1.2	-1.1	-0.5
Balance (CIL) for central and local government	-3.1	-1.2	0.4	-1.2	..

Note: Data for 2013-15 is accounts data, data for 2016 is from the Finance Act and data for 2017 is proposed allocations from Economic Survey I. Net interest expenses includes e.g. transferred profits from Danmarks Nationalbank. The structural government deficit is for central and local government as well as social security funds.
Source: Faroese Ministry of Finance.

⁴ The number of trades per quarter is relatively low, which makes average prices sensitive to individual transactions.

by a large deficit of kr. 218 million (1.2 per cent of GDP) on the local government CIL balance due to higher operating costs and investment. The marked easing of local government budgets emphasises the need for better coordination with the central government's economic policy. According to the central government's economic survey from March 2016, the central government surplus is expected to rise a little, to 0.3 per cent of GDP, in 2017. Government debt has been rising since 2008 on account of the deficits of the central government in particular, but gross debt remains low in an international perspective, cf. Autrup 2015.

The budget surpluses for this year and next year are limited although the Faroe Islands are experiencing a boom with annual growth rates of 6 to 9 per cent over the last four years. According to the Faroese Ministry of Finance, output exceeds the capacity limit with an output gap of 4.3 per cent of GDP in 2016, falling to 2.5 per cent of GDP next year. The central government has not been able to improve public finances sufficiently during the boom. Hence, it expects public finances to show a structural deficit in 2017, i.e. for the 10th year in a row, although it has improved by 1 per cent of GDP in the last five years. This means that necessary adjustments are being postponed and may have to be introduced in a weaker economic environment.

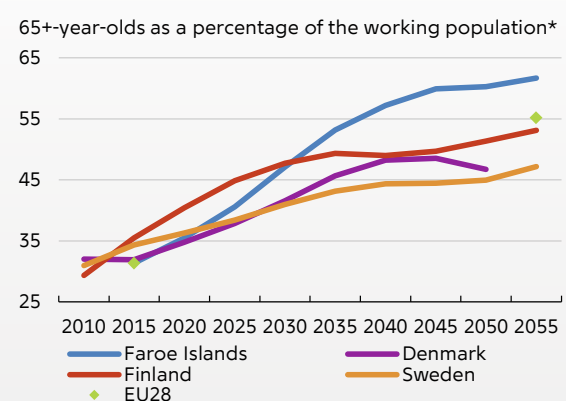
Calculations by the ECFI show that public sector consumption and investment have typically risen when government revenue has increased due to an improved cyclical position. This has had a procyclical effect. With the large planned increases in investments by the public sector and publicly owned companies, the central government risks a repetition of this pattern. At the same time, tax proceeds have, all else equal, been eroded by tax cuts in connection with the 2012 tax reform, which introduced lower taxes on incomes at the high end of the scale. In the same connection, the central government brought forward taxation of pension contributions in return for tax-free future disbursements. These measures have contributed to worsening the structural deficit. From 2016, the present government has given tax cuts to people with low and medium incomes for kr. 123 million (including dynamic effects), corresponding to approximately 1 per cent of GDP. This is expected to be funded via increased resource taxes and a trial period with fish quota auctions in

2016. Particularly the revenue from these auctions will vary from year to year. The auctions have given the expected aggregate revenue in 2016.

Public sector fixed investments will be very large in the next few years, including considerable investments in publicly owned companies. Investments in e.g. infrastructure will in some cases not be stated in the central government budget, as many of them will be funded via loans raised by separate publicly owned companies. The central government should avoid amplifying the upswing via increased public spending and excessive investment. It should be considered whether some of these investments can be postponed.

Like many other economies, the Faroese economy is facing large demographic challenges with more old people and fewer people of working age, cf. Chart 7. However, the challenge is greater in the Faroe Islands than in the other Nordic economies and the EU overall. While there were six people of working age to provide for two senior citizens in 2015, there will be only three Faroese people under the age of 65 to shoulder this burden in 40 years. The fertility rate of Faroese women is high, but in the projections the last 10 years' net annual *emigration* of just under 0.4 per cent of the population is expected to contin-

The adverse demographic development in the Faroe Islands will accelerate in the coming decades Chart 7



Note: *Working population is defined as the population aged 20-64 years. The last observation for the Faroe Islands is 2014. Note that the retirement age in the Faroe Islands is 67 years, but the line has been drawn at 65 years to ensure comparability across countries where the retirement age has generally been lower.

Source: Hagstova Føroya, secretariat of the Nordic Council of Ministers and own calculations.

ue. Projections of population figures are obviously subject to uncertainty, especially when it comes to fertility and net immigration, but nevertheless signs point to strong demographic headwinds for the Faroese economy. In Denmark, reforms – such as a higher retirement age that is indexed to life expectancy – has led to fiscal sustainability in the long term. So far the Faroese government has not prepared government finances for the future. Without reforms, Faroese government finances will meet strong challenges. In 2015, the ECFI calculated that the government deficit would increase steadily towards 2050. There is a need for permanent fiscal tightening of around 5 per cent of GDP (kr. 750 million) in order to stabilise net government debt in the long term.

In the assessment of the ECFI, a gradual increase of the retirement age from 67 to 72 years until 2048 will account for only 1.9 percentage points of this challenge, while higher revenue from fisheries and aquaculture for use of the nation's shared resources will add up to 1.5 percentage points. This means that other measures must be introduced to find the remaining 1.5 percentage points.

The Faroese government has presented a bill to re-establish Landsbanki Føroya, which was closed in 2013, to the Løgting (parliament). The aim is that the Landsbanki should undertake debt and liquidity management on behalf of central and local government and public funds, as well as providing financial and macroeconomic advice to the authorities. Danmarks Nationalbank remains the monetary policy authority of the Faroe Islands.

Growth rates. national accounts in value terms

Table 2

Per cent	Share of GDP (2014)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Private consumption	51.6	8.0	5.8	-0.2	-1.4	-1.6	9.6	1.2	1.3	5.1	5.7	5.9	4.9
Public consumption	28.1	3.3	8.2	10.5	1.8	3.7	1.9	0.9	3.3	0.5	1.5	3.8	2.5
Total gross investment	19.7	42.0	28.4	-34.6	-17.4	20.7	-3.3	61.1	-7.5	-16.2	2.9	4.6	10.5
Exports of goods and services	51.9	11.2	6.5	7.8	-11.0	15.2	12.9	2.2	11.7	8.5	8.1	12.7	-0.9
Final consumption equal to total addition	151.3	12.5	10.3	-3.0	-5.7	6.8	7.2	8.6	3.2	1.9	5.4	7.8	3.0
Imports of goods and services	51.3	11.9	18.7	-6.8	-13.2	6.6	17.2	18.8	-3.6	-4.9	3.8	6.4	0.8
Gross domestic product (GDP)	100.0	12.9	5.9	-0.8	-1.7	7.0	2.4	3.0	7.5	5.8	6.2	8.5	4.1
Gross national income	..	12.8	5.7	-2.9	-3.6	11.2	3.3	3.8	5.9	5.6	6.2	8.4	4.2
Gross national disposable income	..	12.3	7.3	-5.1	-3.3	11.0	5.0	2.0	5.3	6.0	5.5	8.0	4.1
Memo: Consumer prices	..	1.5	3.6	6.3	-1.0	0.4	2.3	2.2	-0.6	-1.0	-1.7

Note: For 2014-15 the national accounts are estimates. for 2016-17 they are projections.

Source: Hagstova Føroya.

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