

# Monetary Policy Report

April 2016





## Monetary policy report

The Riksbank's Monetary Policy Report is published six times a year. The report describes the deliberations made by the Riksbank when deciding what would be an appropriate monetary policy to conduct.<sup>1</sup> The report includes a description of the future prospects for inflation and economic activity based on the monetary policy that the Riksbank currently considers to be well-balanced.

The purpose of the Monetary Policy Report is to produce background material for monetary policy decisions, and to spread knowledge about the Riksbank's assessments. By publishing the reports, the Riksbank aims to make it easier for external parties to follow, understand and assess its monetary policy.

The Riksbank must submit a written report on monetary policy to the Riksdag (Swedish Parliament) Committee on Finance at least twice a year (see Chapter 6, Article 4 of the Sveriges Riksbank Act (1988:1385)). During the spring, special material is submitted as a basis for the evaluation of monetary policy. During the autumn, the current Monetary Policy Report is submitted as an account of monetary policy.

The Executive Board made a decision on the Monetary Policy Report on 20 April 2016. The report may be downloaded in PDF format from the Riksbank's website [www.riksbank.se](http://www.riksbank.se), where more information about the Riksbank can also be found.

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<sup>1</sup> See "Monetary policy in Sweden" on the next page for a description of the monetary policy strategy and what can be regarded as an appropriate monetary policy.

# Monetary policy in Sweden

## MONETARY POLICY STRATEGY

- According to the Sveriges Riksbank Act, the objective for monetary policy is to maintain price stability. The Riksbank has specified this as a target for inflation, according to which the annual change in the consumer price index (CPI) is to be 2 per cent.
- At the same time as monetary policy is aimed at attaining the inflation target, it is also to support the objectives of general economic policy for the purpose of attaining sustainable growth and a high level of employment. This is achieved through the Riksbank, in addition to stabilising inflation around the inflation target, endeavouring to stabilise production and employment around paths that are sustainable in the long term. The Riksbank therefore conducts what is generally referred to as flexible inflation targeting. This does not mean that the Riksbank neglects the fact that the inflation target is the overriding objective.
- It takes time before monetary policy has a full impact on inflation and the real economy. Monetary policy is therefore guided by forecasts for economic developments. The Riksbank publishes its own assessment of the future path for the repo rate. This repo-rate path is a forecast, not a promise.
- In connection with every monetary policy decision, the Executive Board makes an assessment of the repo-rate path needed, and any potential supplementary measures necessary, for monetary policy to be well-balanced. It thus normally a question of finding an appropriate balance between stabilising inflation around the inflation target and stabilising the real economy.
- There is no general answer to the question of how quickly the Riksbank aims to bring the inflation rate back to 2 per cent if it deviates from the target. A rapid return may in some situations have undesirable effects on production and employment, while a slow return may have a negative effect on confidence in the inflation target. The Riksbank's ambition has generally been to adjust monetary policy so that inflation is expected to be fairly close to the target in two years' time.
- According to the Sveriges Riksbank Act, the Riksbank's tasks also include promoting a safe and efficient payment system. Risks linked to developments in the financial markets are taken into account in the monetary policy decisions. With regard to preventing an imbalance in asset prices and indebtedness, the most important factors, however, are effective regulation and supervision. Monetary policy only acts as a complement to these.
- In some situations, as in the financial crisis 2008–2009, the repo rate and the repo-rate path may need to be supplemented with other measures to promote financial stability and ensure that monetary policy is effective.
- The Riksbank endeavours to ensure that its communication is open, factual, comprehensible and up-to-date. This makes it easier for economic agents to make good economic decisions. It also makes it easier to evaluate monetary policy.

## DECISION-MAKING PROCESS

The Executive Board of the Riksbank usually holds six monetary policy meetings per year at which it decides on monetary policy. A Monetary Policy Report is published in connection with these meetings. Approximately two weeks after each monetary policy meeting, the Riksbank publishes minutes from the meeting, in which it is possible to follow the discussion that led to the current decision and to see the arguments put forward by the different Executive Board members.

## PRESENTATION OF THE MONETARY POLICY DECISION

The monetary policy decision is presented in a press release at 9.30 a.m. on the day following the monetary policy meeting. The press release also states how the individual Executive Board members voted and provides the main motivation for any reservations entered. A press conference is held on the day following the monetary policy meeting.

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## CHAPTER 1 – Monetary policy considerations

There is still considerable uncertainty about the global economic outlook and several central banks are conducting highly expansionary monetary policies to support economic developments and to get inflation to rise. However, in Sweden the strengthening of the economy is continuing and resource utilisation is now considered to be roughly normal. GDP growth was faster than anticipated during the fourth quarter of 2015 and inflation was also a positive surprise at the start of the year. In the forecast, CPIF inflation stabilises around 2 per cent in 2017.

The Riksbank's expansionary monetary policy, with repo-rate cuts and purchases of nominal government bonds, has contributed to the positive development in the Swedish economy, with high growth and rising inflation. However, inflation has been low for a long time and, although it is rising, the upturn is unstable. Continued expansionary monetary policy is needed to safeguard the rising trend in inflation. The Executive Board has decided to continue to buy securities, for a further SEK 45 billion, so that the purchases will amount to SEK 245 billion in total by the end of 2016. This will reduce the risk of the krona appreciating faster than in the forecast and of a break in the upturn in inflation. To have a broad impact on different interest rates, the purchases will include both nominal and real government bonds. The strong development of the Swedish economy justifies these purchases taking place at a somewhat slower pace than previously. The repo rate is being left unchanged at -0.50 per cent and will start to be raised slowly in the middle of 2017, when CPIF inflation is expected to be close to 2 per cent. There is still a high level of preparedness to make monetary policy even more expansionary if this is needed to safeguard confidence in the inflation target.

### Stronger economic activity in Sweden but global recovery fraught with risks

Uncertainty increased on the financial markets at the start of the year. Stock indexes on the world's stock exchanges and oil prices fell. However, since mid-February, the stock markets have recovered and the price of oil has risen. The fluctuations on the financial markets are reflecting uncertainty over global economic developments. In addition, indicators of economic and political uncertainty in both Europe and China remain on a high level.

Global GDP growth was weak in 2015 and the recovery in developed countries, which are important for Swedish trade, was moderate. The recovery of the United States and euro area is expected to become slightly stronger in the period ahead, in light of expansionary monetary policies, low commodity prices and other factors. However, compared with the forecast from February, international growth is a little lower, which is primarily due to cyclical risks being deemed to have increased slightly. This assessment is based on factors including the increased uncertainty over cooperation in the EU, primarily as concerns the United Kingdom's membership of the EU and the management of refugee flows. In addition, there are questions surrounding

**Table 1:1.**

Important factors for monetary policy
Global economic developments are fraught with risks. The recovery is continuing but inflation is low and monetary policy continues to be very expansionary. The ECB adopted new monetary policy stimulation in March.
The competition-weighted exchange rate, KIX, has become somewhat stronger than in the Riksbank's February forecast. A slow appreciation is expected in the period ahead.
Continued broad strengthening of the Swedish economy. GDP is expected to grow by almost 3 per cent on average per year in 2016–2018.
Inflation expectations are continuing to rise.
Slightly higher than expected inflation in recent months, but the rise is still uneven.
Conclusion: continued expansionary monetary policy so that inflation stabilises around 2 per cent in 2017.

**Table 1:2.**

Important revisions to the forecast
The inflation forecast has been revised upwards for 2016 due to higher outcomes and higher expected energy prices, but remains largely unchanged for 2017 and 2018.
The forecasts for growth and inflation abroad have been revised downwards as cyclical risks are deemed to have increased slightly. Policy rates abroad are expected to be lower.
The population forecast has been revised downwards and thus so too has the employment forecast. Unemployment has also been revised downwards due to the changed composition of the labour force.

the European banks' balance sheets. KIX-weighted international growth, the aggregate growth of the countries with which Sweden trades, is expected to rise from about 2 per cent in 2015 and 2016 to just below 2.5 per cent in the following two years.

Inflation abroad is low and recent years' falling prices for oil and other commodities mean that it will remain low in 2016. As economic activity improves, KIX-weighted inflation will rise and reach approximately 2 per cent in 2017.

Monetary policy abroad has been expansionary for a long time. The continued high uncertainty over economic developments and low inflation mean that it will also be highly expansionary in the period ahead. In March, the ECB adopted new monetary policy stimulation in the form of a lower refi rate, deposit rate and lending rate, an expanded asset purchase programme and new long-term loans to the banks. The Federal Reserve held the policy rate unchanged and communicated that, over the period ahead, the rate will be raised at a slower rate than previously expected.

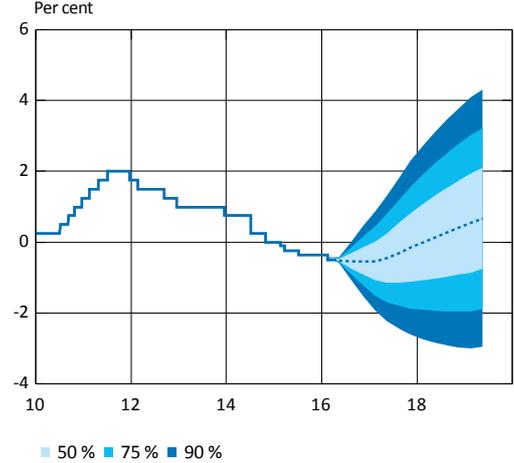
Despite the increased cyclical risks, the highly expansionary monetary policy and the low commodity prices mean that the conditions for the continued recovery of global economic activity are good. GDP growth and international inflation are therefore expected to rise in the years ahead, albeit at a slightly slower rate than was forecast in February.

**Strong development of the Swedish economy**

Growth in the Swedish economy is strong, underpinned by an expansionary monetary policy (see Figure 1:1 and 1:2). GDP grew by 4.1 per cent over the whole of 2015 and growth in the fourth quarter was higher than expected. Domestic demand has been high and exports have increased rapidly despite the weak development of world trade and the Swedish export market. Even if growth will gradually become lower over the forecast period, the average GDP growth is expected to become higher than normal.

Resource utilisation is judged to be approximately normal now and is expected to increase over the coming years to become higher than normal. The situation on the labour market is continuing to improve and employment will rise at the same time as unemployment will fall in 2016 and 2017. However, as in previous forecasts, the entry of recent immigrants onto the labour market means that unemployment will increase as of 2018. Statistics Sweden has revised its population forecast downwards due to the downwardly-adjusted forecast for immigration. This means that the forecasts for both employment and the labour force are lower during the latter part of the forecast period when compared with the assessment in February. As many new immigrants initially have a low rate of employment and a high level of unemployment, and they are now expected to be fewer than earlier forecasts had suggested, unemployment has also been revised downwards.

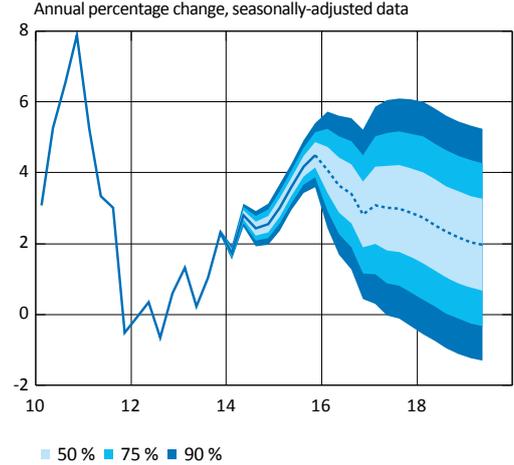
**Figure 1:1. Repo rate with uncertainty bands**



Note. The uncertainty bands for the repo rate are based on the Riksbank's historical forecasting errors and the ability of risk-premium adjusted forward rates to forecast the future repo rate for the period 1999 up to the point when the Riksbank started to publish forecasts for the repo rate during 2007. The uncertainty bands do not take into account the fact that there may be a lower bound for the repo rate. Outcomes are daily rates and forecasts refer to quarterly averages.

Source: The Riksbank

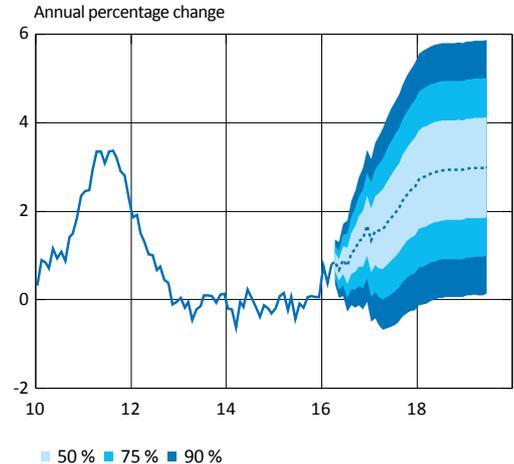
**Figure 1:2. GDP with uncertainty bands**



Note. The uncertainty bands are based on the Riksbank's historical forecasting errors. There is also uncertainty for the outcomes for GDP, as the figures in the National Accounts are revised several years after the preliminary publication.

Sources: Statistics Sweden and the Riksbank

**Figure 1:3. CPI with uncertainty bands**



Note. The uncertainty bands are based on the Riksbank's historical forecasting errors.

Sources: Statistics Sweden and the Riksbank

### CPIF inflation rising towards 2 per cent, 2017

Inflation measured in terms of the CPI has been restrained by falling interest costs and continues to be low (see Figure 1:3). In contrast, CPIF inflation has shown a rising trend since the beginning of 2014 (see Figure 1:4). Inflation has become slightly higher than expected at the start of the year. The inflation forecast has also been revised slightly upwards for the near future, which, apart from unexpectedly high outcomes, is primarily due to the upward revision of the oil price forecast (see Figure 1:5–1:7). Inflation will nevertheless remain low for some time to come as the result, among other reasons, of earlier large energy price falls and dampened price increases for imported goods due to the recent appreciation of the krona. However the conditions for rising inflation in the period ahead are deemed to be good. The Swedish economy is growing quickly and resource utilisation is rising. With the stronger development of the labour market, wages are expected to increase more rapidly and higher demand will make it easier for companies to raise their prices. CPIF inflation is expected to stabilise around 2 per cent during 2017.

The earlier depreciation of the Swedish krona is an important explanation for why inflation has been rising since the start of 2014. Since February, the krona has become slightly stronger than in the Riksbank's forecast, which is due to the strong development of the Swedish economy, among other things. In the period ahead, the krona is expected to slowly appreciate (see Figure 1:8).

## Current monetary policy

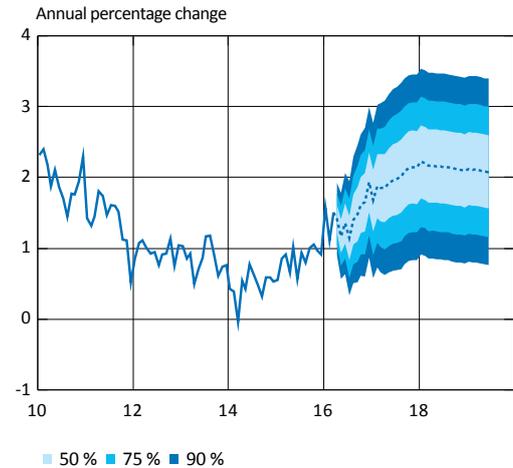
To safeguard the role of the inflation target as nominal anchor for price-setting and wage formation, monetary policy in Sweden, as in other countries, has become gradually more expansionary. In 2015, the Riksbank cut the repo rate from 0.0 per cent to -0.35 per cent, adjusted the repo-rate path downwards, made extensive purchases of government bonds and announced additional bond purchases during the first half of 2016. In February 2016, the repo rate was cut further to -0.5 per cent. These measures have led to lower interest rates and a weaker krona than otherwise have been the case.

The aim of this monetary policy is to push up inflation and stabilise it around the target of 2 per cent and help bring inflation expectations in line with the inflation target. Continued high confidence in the inflation target is creating the conditions for efficient price-setting and wage formation, as well as good economic growth in Sweden.

### Important to safeguard confidence in the inflation target

The Riksbank's highly expansionary monetary policy has helped to strengthen the economy and reduce unemployment, and has contributed to the upturn of inflation expectations (see Figure 1:9). Inflation has shown a rising

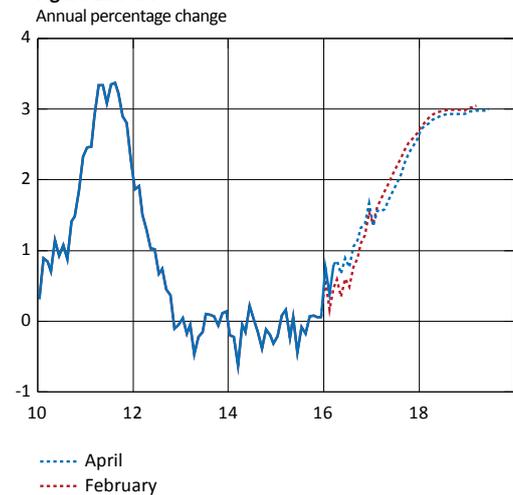
**Figure 1:4. CPIF with uncertainty bands**



Note. The uncertainty bands are based on the Riksbank's historical forecasting errors. The CPIF is the CPI with a fixed mortgage rate.

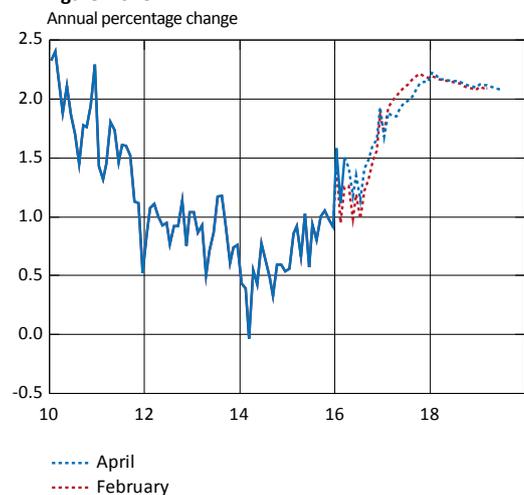
Sources: Statistics Sweden and the Riksbank

**Figure 1:5. CPI**



Sources: Statistics Sweden and the Riksbank

**Figure 1:6. CPIF**



Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

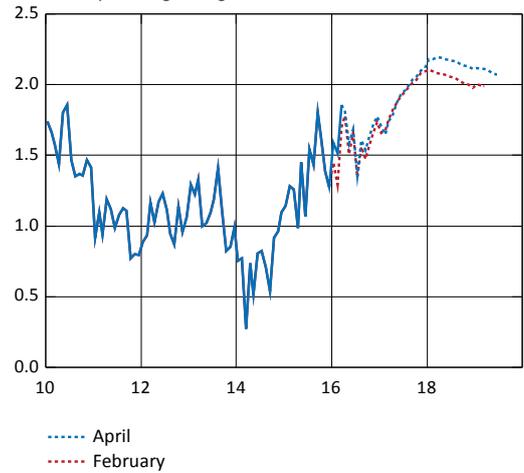
trend since the start of 2014 and resource utilisation is now deemed to be about normal. GDP growth for the fourth quarter of 2015 was higher than expected and inflation was also a positive surprise at the start of the year. Compared with the forecast in February, inflation is expected to be slightly higher in 2016. But it remains uncertain how quickly it may rise. Inflation has been low for a long time and is also expected to be lower than target in 2016. In the forecast, CPIF inflation stabilises around 2 per cent in 2017. At the same time, uncertainty remains over international developments and several central banks are conducting highly expansionary monetary policies so that economic activity improves and inflation rises.

Over the last year, the Riksbank has complemented its repo-rate cuts with purchases of nominal government bonds. This has led to a broad impact on several different interest rates and has contributed to the positive development of the Swedish economy. However, inflation has been low for a long time and, although it is now rising, the upturn continues to be unstable and price development is still not in line with the target.

A highly expansionary monetary policy abroad can be added to this. For example, in March, the ECB decided to cut its policy rates and extend its already comprehensive purchases of securities. In addition, the Federal Reserve has communicated that the policy rate in the United States will rise at a slower rate than previously expected. With the continued expansionary monetary policy abroad, there is a risk that the krona will appreciate earlier and faster than in the forecast. This could have negative consequences for both growth and inflation and could impact confidence in the inflation target. The previously decided purchases of securities expire at the end of June 2016. To ensure the positive development of the Swedish economy and that the trend in inflation continues, the Riksbank's Executive Board has decided to continue purchasing securities for a further SEK 45 billion in the second six months of 2016, so that the purchases will total SEK 245 billion at the end of 2016 (see Figure 1:10). The strong development of the Swedish economy justifies these purchases taking place at a somewhat slower pace than previously. To achieve a broad impact on different interest rates, the purchases will include both nominal and real government bonds corresponding to SEK 30 billion and SEK 15 billion respectively. At the end of the year, the Riksbank's purchases will correspond to 7 per cent of GDP, which can be compared to the ECB's total purchases, which are calculated to amount to about 17 per cent of GDP by the end of March 2017 (see Figure 1:11). As per cent of current outstanding stocks of Swedish nominal and real government bonds the Riksbank's purchases correspond to about 37 and 9 per cent, respectively.<sup>2,3</sup> The ECB's

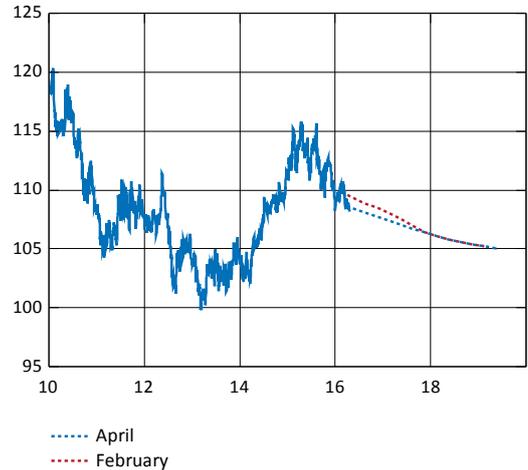
<sup>2</sup> As the market value of the government bonds currently exceeds their nominal amount, the total purchases of a nominal amount of SEK 245 billion correspond to an actual

**Figure 1:7. CPIF excluding energy**  
Annual percentage change



Note. The CPIF is the CPI with a fixed mortgage rate.  
Sources: Statistics Sweden and the Riksbank

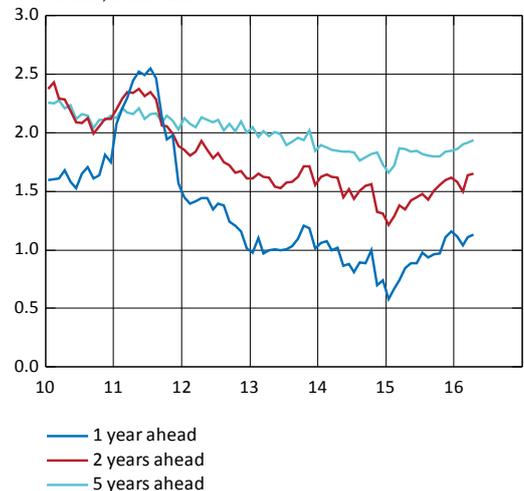
**Figure 1:8. KIX-weighted nominal exchange rate**  
Index, 1992-11-18 = 100



Note. Outcomes are daily rates and forecasts refer to quarterly averages. KIX refers to an aggregate of countries that are important for Sweden's international transactions.

Sources: National sources and the Riksbank

**Figure 1:9. Inflation expectations among money market participants**  
Per cent, mean value



Source: TNS Sifo Prospera

government bond purchases are calculated to form about 20 per cent of current outstanding stocks (see Figure 1:12). The repo rate is being left unchanged at -0.50 per cent and, just as in February, slow repo-rate increases are expected to start in the middle of 2017, when CPI inflation is expected to be close to 2 per cent (see Figure 1:13).

All in all, monetary policy is very expansionary and will remain so in the coming years. The real repo rate will, for example, remain negative throughout the whole of the forecast period (see Figure 1:14).

**Monetary policy alternatives**

The formulation of monetary policy depends on a number of factors and considerations. This time, the monetary policy discussion has primarily focused on whether purchases of securities should expire at the end of June 2016 or whether they should continue.

The Swedish economy is currently characterised by high growth and an ever-stronger labour market. GDP growth for 2015 became higher than in the Riksbank's February forecast and inflation was surprisingly positive in January, February and March. In addition, inflation expectations have turned upwards. Resource utilisation is deemed to be about normal and is expected to increase during the forecast period. This is creating good conditions for the continuation of the rising trend in inflation. Neither has the inflation forecast changed particularly much since the forecast in February. These circumstances suggest that there is little need for both a lower repo rate and continued securities purchases.

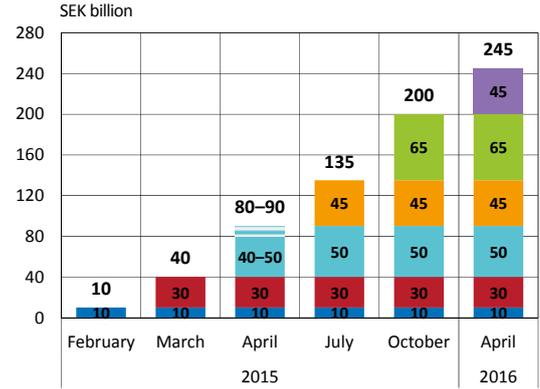
But the rising inflation is unstable and could be impacted by setbacks. The fact that inflation has been rising since 2014 largely depends on the weak krona, which has contributed to a rise in the prices of goods and services with a higher degree of imported content.

Several central banks are pursuing a very expansionary monetary policy aimed at pushing up inflation towards their respective targets. For example, in March, the ECB decided to extend its already comprehensive purchases of securities. In addition, the Federal Reserve has communicated that the policy rate in the United States will rise at a slower rate than previously expected. International monetary policy affects the krona exchange rate and thereby also Sweden's monetary policy. Inflation forecasts are thus highly sensitive to various international factors. If the Riksbank were to refrain from continuing to purchase securities, there would be an increasing risk that the krona would appreciate too rapidly. A stronger krona would lead to demand for Swedish exports becoming lower and to prices for imported goods and services increasing more slowly. The period of low inflation

purchase price of about SEK 290 billion. It is this actual purchase price that is used in the calculations.

<sup>3</sup> Until further notice, maturities and coupon payments will be reinvested in the government bond portfolio.

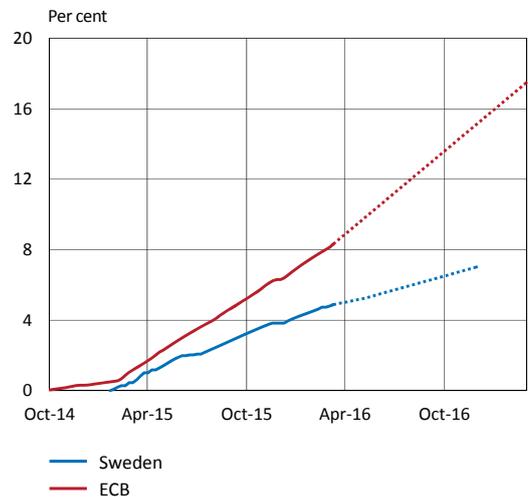
**Figure 1:10. Purchases of government bonds decided by the Riksbank**



Note. Government bond purchases will continue until the end of 2016. As the Riksbank intends to reinvest coupon payments on holdings of government bonds, the nominal amount will not total exactly SEK 245 billion.

Source: The Riksbank

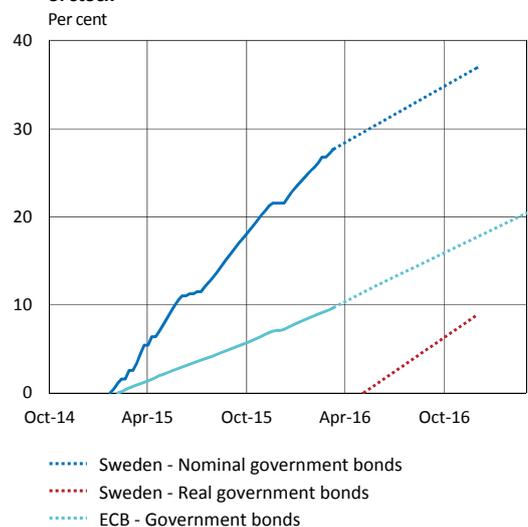
**Figure 1:11. Purchases of government bonds as a percentage of GDP**



Note. The purchases are shown as a percentage of GDP in 2015. With regard to the ECB, all programs in their extended asset purchase program (APP) are included. The projections are linear from today's level and do not necessarily reflect the actual rate of purchase.

Sources: ECB and the Riksbank

**Figure 1:12. Purchases of government bonds as a percentage of stock**



Note. For the ECB it is assumed here that 70 per cent of the total purchases will comprise nominal and real government bonds and the current stock with maturities of 2-30 years is calculated at around EUR 6,100 billion. The projections are linear from today's level and do not necessarily reflect the actual rate of purchase.

Sources: ECB, Reuters and the Riksbank

would thereby be extended and the risk of weakening confidence in the inflation target would increase. In a less favourable scenario, the combined negative effects on the Swedish economy could be substantial. This argues in favour of continued securities purchases for a time.

The Executive Board's overall assessment is that, even if the Swedish economy is doing increasingly well, the purchases of securities are still needed. This is to avoid jeopardising the recovery in economic activity and to reduce the risk of inflation becoming too low.

**Still prepared to do more**

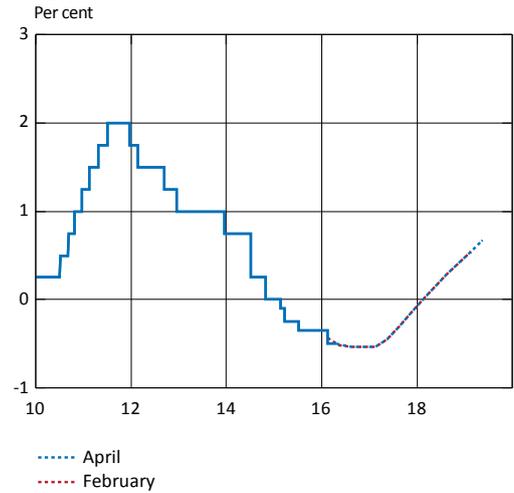
Even if it is less likely that further monetary policy stimulation will be needed in the period ahead, as economic activity strengthens and inflation approaches the target, negative surprises may lie ahead. Whether, and if so how, monetary policy will then react depends on the causes of such surprises and how they are deemed to influence the outlook for inflation. The important thing for monetary policy is for the trend in inflation to come closer to the target and for confidence in the inflation target not to be weakened.

In light of this, the Executive Board is still highly prepared to make monetary policy even more expansionary if necessary. This also applies between the ordinary monetary policy meetings. There is still scope to cut the repo rate further, which is reflected in the repo-rate path. If necessary, the Riksbank could also adopt measures in the framework for the implementation of monetary policy to support the monetary policy conducted. In addition, security purchases can be extended, for example by further purchases of nominal and real government bonds. The Riksbank is also prepared to intervene on the foreign exchange market if the krona appreciates so quickly as to threaten the upturn in inflation. Furthermore, there is scope to launch a lending programme to companies via the banks, even if the good funding opportunities of companies indicate that this is currently unnecessary.

**Uncertainty and risks**

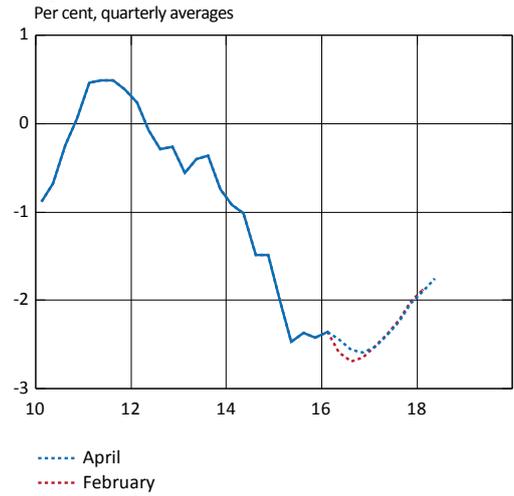
Forecasts of future economic developments are always uncertain. This is illustrated in a general way by the uncertainty bands around the forecasts in Figure 1:1–1:4. The Riksbank's forecasts are formulated so that the risks of a worsened outcome are, in principle, as large as the risks of a more favourable outcome. However, it is difficult to put a figure on uncertainty and risks. Consequently, our monetary policy deliberations may need to pay particular attention to certain risks, the consequences of which may have a severe impact on economic development.

**Figure 1:13. Repo rate**



Note. Outcomes are daily data and the forecasts refer to quarterly averages.  
Source: The Riksbank

**Figure 1:14. Real repo rate**



Note. The real repo rate is a mean value of the Riksbank's repo rate forecast for the year ahead minus the inflation forecast (CPIF) for the corresponding period.  
Sources: Statistics Sweden and the Riksbank

### Uncertainty about the inflation forecast

It is uncertain how quickly inflation will rise to 2 per cent. Since cost and price trends depend on several factors, both foreign and domestic, there are many sources of uncertainty.

At the start of the year, uncertainty on the financial markets increased and stock indexes on the world's stock exchanges fell, as did the price of oil. However, since mid-February, the stock markets have recovered and the price of oil has risen. Unease over a poorer outcome for the Chinese economy is playing a major role in uncertainty in the global economy. However, developments in Europe are also fraught with various risks. Many European banks have weak balance sheets and any further weakening could lead to a tightening of credit granting. There are also political risks that could lead to confidence in the European Union weakening. Factors that could affect this include how the EU manages refugee immigration from Syria and other parts of the world and the outcome of the referendum on the United Kingdom's EU membership on 23 June. It is difficult to assess the probability of the United Kingdom leaving the EU and the possible consequences of this outcome. But it is likely that it would lead to turbulence on the financial markets and negative effects on the real economy for both the United Kingdom and other countries in Europe (see Chapter 4).

In a scenario in which the economies of Sweden's neighbours are growing significantly more slowly than expected, demand for Swedish exports may be dampened considerably, and confidence among Swedish companies and households may deteriorate. There is then a risk that unemployment may rise and that the rate of inflation in Sweden may fall again. Weaker international economic activity could also impact inflation in Sweden more directly via lower commodity prices.

The development of the krona is also uncertain, as described above. A more rapid appreciation of the krona than forecast would dampen this inflation and it would thereby be more difficult to attain the inflation target (see the article "Risks inherent in a rapid appreciation of the krona" in the MPR from February).

If the inflation prospects were to deteriorate and confidence in the inflation target were to weaken, monetary policy may need to be even more expansionary. Preparedness to act is high should such a scenario materialise. Given the generally good economic growth, there are also factors that could lead to inflation rising more quickly than expected. But inflation has been below target for a long time and, if it were temporarily to exceed the target by more than in the Riksbank's forecast, this would not necessarily involve monetary policy being made less expansionary in the near future.

### CPI, CPIF and HICP

The most common measure of inflation in Sweden is the Consumer Price Index, CPI. The CPI is the target variable for monetary policy, but the aim of the measure is also to calculate the impact of price fluctuations on households' living costs and it is used, among other things, to calculate the price base amount.<sup>4</sup> The CPI includes households' mortgage costs which are directly, and "in the wrong direction", affected by the Riksbank's repo rate. Instead, it is therefore sometimes appropriate to use the CPIF, in which mortgage rates are held constant. The EU-harmonised inflation measure HICP is not directly affected by changes in mortgage rates either, as households' housing costs are largely excluded. In contrast to the CPI, the HICP is not intended to be a cost of living index but is instead intended to be a measure that is good for monetary policy purposes. The HICP is therefore often referred to as an inflation index and forms a target variable for monetary policy in the euro area, United Kingdom and elsewhere. The different purposes for the CPI and HICP mean that they are calculated in different ways, with a number of goods and services being excluded from the different measures. Despite the differences in construction, there are similarities between inflation according to the HICP and according to the CPIF, while CPI inflation varies more.

<sup>4</sup> For a discussion on different price indices as target variable for monetary policy, see M. Apel, H. Armelius och C-A Claussen, "Price index for the inflation target", *Economic Commentaries* No 2, 2016, Sveriges Riksbank.

**Risks of low inflation**

Extended periods where inflation deviates from the target risk having a negative effect on long-term inflation expectations, making it more difficult for monetary policy to stabilise inflation around the target. Excessively low inflation and falling inflation expectations risk becoming self-fulfilling prophecies and may, in this case, extend the period of very low interest rates. This increases the risks associated with low interest rates and highlights the need to push up inflation. Without a benchmark for price-setting and wage formation, it will also be more difficult for households and companies to make financial decisions. A wide spread of expectations over prices and wages makes it more difficult for individual companies to predict how their own costs and revenues will develop, which may inhibit investments and new recruitment. In the long term, this will negatively affect economic activity across the whole economy.

In addition, a low rate of inflation makes it more difficult to adjust real wages, as nominal wages usually rise and are seldom adjusted downwards. This could lead to higher unemployment.

**Risks inherent in low and negative interest rates**

The low global interest rates are partly due to an underlying downward trend in real interest rates but also due to expansionary monetary policies (see Figure 1:15). The expansionary monetary policy in Sweden and other countries is needed to stimulate economic growth and counteract the risks of excessively low inflation. The low interest rate level could however also create greater vulnerability in the financial system if it leads to assets becoming overvalued or different types of risk not being priced in full. According to the Riksbank's analysis, the valuations on several asset markets are high from a historical perspective. That is especially true on the housing market.

The fact that the repo rate is now in negative territory and that certain market rates have turned negative may, in itself, cause problems on certain financial markets and for certain financial institutions.<sup>5</sup> However, it is the Riksbank's assessment that the negative interest rates have not yet led to any impaired functionality in the financial system.

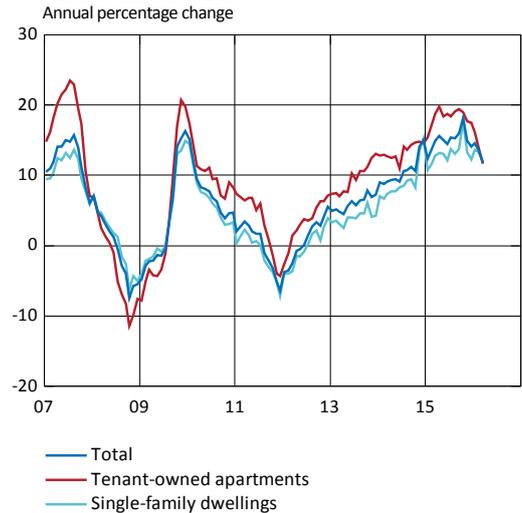
The low interest rates have also contributed to the continuing rise in housing prices and household debt (see Figure 1:16 and 1:17). As in the previous forecast, household debts as a share of disposable income are expected to increase to just over 190 per cent at the end of the forecast period (see Figure 1:17). If negative surprises were to occur, for example if rates were to increase in a way that households were not expecting, heavily indebted households may choose to rapidly increase their saving and hence reduce their consumption. In such a scenario, an economic slowdown

**Figure 1:15. Real interest rates**



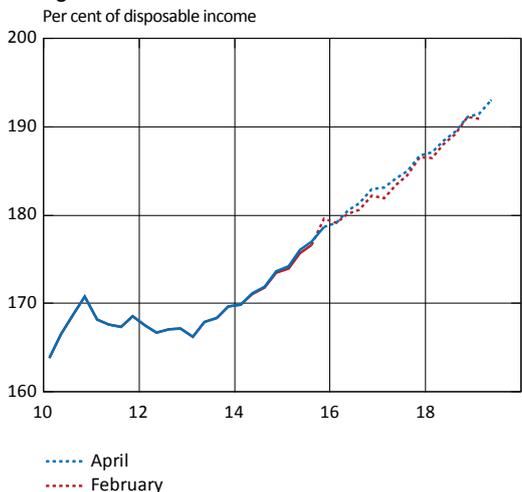
Note. 10-year yield on real government bonds in Sweden, the United Kingdom and the United States. Swedish real interest rate is zero coupon yields interpolated from bond prices using the Nelson-Siegel method. Sources: Bank of England, Federal Reserve, Thomson Reuters and the Riksbank

**Figure 1:16. Housing prices**



Source: Valueguard

**Figure 1:17. Household debt ratio**



Note. Households' total debts as a share of their disposable incomes totalled over the past four quarters.

Sources: Statistics Sweden and the Riksbank

<sup>5</sup> See J. Alsterlind, H. Armelius, D. Forsman, B Jönsson och A-L Wretman, "How far can the repo rate be cut?", *Economic Commentaries* No 11, 2015, Sveriges Riksbank.

could be heavily exacerbated, particularly if housing prices also start to fall.

**The risks associated with household indebtedness remain – ever-greater need for urgent action**

Rising housing prices and ever higher household indebtedness are contributing to increasingly greater risks to both financial and macroeconomic stability, the Riksdag Committee on Finance has taken certain measures such as an amortisation requirement, a loan-to-value limit and a risk-weight floor for mortgages. The Riksbank welcomes these initiatives.

However, further measures need to be adopted to reduce the risks, particularly in a situation characterised by low and negative interest rates. For example, measures are needed that target the housing market in order to create a better balance between supply and demand. Reforms that make households less willing or able to take on debt are also important, such as a gradual reduction of the tax relief on interest expenditure. The responsibility for such reforms lies with the Riksdag and the Government. As it may take time before the effects of a number of these measures are felt, it is important that macroprudential policy measures are also taken to manage the risks in the near future. For example, a debt-to-income limit could be introduced.

It is also of great importance that the framework for macroprudential policy in Sweden be reviewed. The drafting of the amortisation requirement clearly emphasises that the framework does not function satisfactorily. This is something that was also highlighted by the Riksdag Committee on Finance and in the review of the Riksbank's monetary policy 2010–2015 conducted by Marvin Goodfriend and Mervyn King on behalf of the Riksdag Committee on Finance.<sup>6</sup> In conjunction with the announced review of the Sveriges Riksbank Act, it is therefore desirable that the framework for macroprudential policy also be reviewed. As this will take time, it is important that the Riksdag Committee on Finance is now given the decision-making power needed to be able to adopt the necessary measures. The Riksdag Committee on Finance should be able to decide independently on macroprudential issues, since this is a prerequisite for pursuing an effective macroprudential policy.

If no measures are taken, this, in combination with the low interest rate level, will further increase the risks, which may potentially lead to economic imbalances and in the long term be very costly for the national economy. A heavily-increased interest rate would certainly slow down the build-up of debts, but at the cost of a rapid appreciation of the krona, lower inflation, lower growth and higher unemployment. For these reasons, it is extremely important

<sup>6</sup> See the Riksbank's opinions of the investigation in *"The Executive Board's consultation response on the report Review of the Riksbank's Monetary Policy 2010-2015 (2015/16:RFR7)"*.

that macroprudential policy and other measures restrict the accrual of debt by households.

## CHAPTER 2 – Financial conditions

After an unsettled start to the year, most stock exchanges have risen and the interest rate differential between higher-risk and safe assets has decreased. Despite a recovery in higher-risk assets, there have been small movements in government bond yields. In Sweden, financial conditions remain expansionary. Households and companies are paying low interest rates and credit growth remains high. In competition-weighted terms, the Swedish krona has strengthened slightly compared with the Riksbank's forecast in February.

### Monetary policy and government bond yields

#### More stimuli from the world's central banks

Since the Monetary Policy Report in February, stock exchanges have risen after the fall that characterised the start of the year and the interest rate differential between higher-risk and safe assets has fallen. To support this economic development, several central banks have conducted a more expansionary monetary policy than previously. Despite this, financial markets are continuing to be characterised by unease over global economic activity.

In the euro area, the ECB chose to present renewed easing in March. The deposit rate was lowered by 0.1 percentage points to -0.4 per cent and the refi rate and lending rate were cut by 0.05 percentage points to 0.0 and 0.25 per cent respectively. The current asset purchase programme was extended from 60 to 80 billion euros per month and the purchases may now include bonds from non-financial corporations. The ECB will also offer four new, longer-term loans, giving the banks the opportunity to borrow from the ECB at a rate that could be as low as the deposit rate if they increase their lending to the private sector. Although the ECB presented more new stimuli, the euro appreciated after the announcement, as market participants interpreted the ECB's communication as an indication that the policy rate would not be cut further. Forward rates also increased slightly after the decision but still suggest that participants believe that the policy rate may be lowered further.

Table 2:1.

Developments on financial markets since the February Monetary Policy Report	
Government bond yields	Small fluctuations in government bond yields. Swedish and US yields have risen compared with German yields.
The foreign exchange market	In competition-weighted terms, the Swedish krona has appreciated slightly compared with the Riksbank's forecast.
The stock market	Recovery of the world's stock exchanges after large falls at the start of the year.
Interest rates for households and companies	Low interest rates for households and companies, some indications of slightly less impact after interest rate cuts in February.
Credit growth	Continuing high credit growth to households. Slightly lower growth rate in corporate bank loans, but the growth rate in securities loans is rising.

#### The transmission mechanism - from the repo rate to interest rates for households and companies

The repo rate has a direct effect on short-term interbank rates and government bond yields via the overnight rate. Expectations regarding the future repo rate and government bond purchases affect the development of long-term government bond yields, which are also affected by foreign yields. Government bond yields act as an anchor for other types of bond yields, which in turn affect the banks' funding costs. This ultimately affects the interest rates offered to households and companies.



In the United States, the Federal Reserve held its policy rate unchanged in March. According to forecasts from members of the Federal Reserve’s monetary policy committee, the policy rate is expected to be raised by 0.5 percentage points in 2016, which is a lower rate of increase than in previous forecasts. Forward rates fell slightly in conjunction with the Federal Reserve’s decision but, all in all, there have been small changes in forward rates since the middle of February (see Figure 2:1). Forward rates indicate that the policy rate will be raised at a slower rate than shown in the Federal Reserve’s forecasts.

Since the monetary policy decision in February, Norges Bank has also cut its policy rate to 0.5 per cent and plans to cut the interest rate further over the year.

Expectations ahead of the Riksbank’s monetary policy decision in February were that the repo rate would be cut by about 0.1 percentage points. The decision to cut the repo rate by 0.15 percentage points to –0.5 per cent was therefore a slightly larger cut than expected. Forward rates are now largely in line with the repo rate path, which means that the market sees a small probability that the repo rate may be cut further in the period ahead (see Figure 2:1). According to Prospera’s survey from March, the repo rate is expected to be held unchanged in April. However, according to current market newsletters, several participants expect the Riksbank to extend government bond purchases in April.

**Small fluctuations in government bond yields**

Despite a recovery in higher-risk assets, there have been small fluctuations in government bond yields since the Monetary Policy Report was published in February (see Figure 2:2). In the United States, longer government bond yields have risen slightly while corresponding yields in Germany have fallen. In both countries, yields are lower than at the end of 2015, which is probably due to lower policy rates and more asset purchases from several central banks, as well as expectations of lower global growth and inflation.

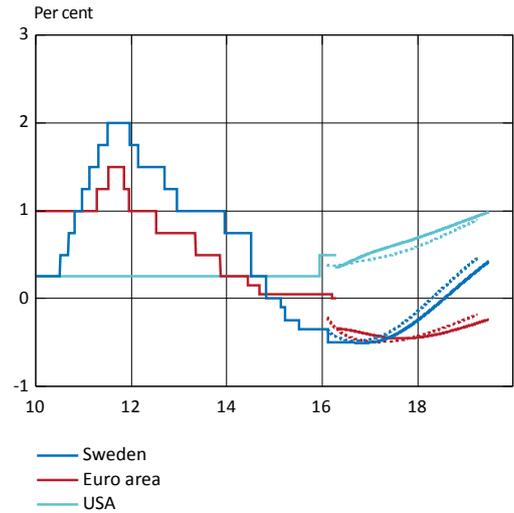
In Sweden, shorter government bond yields have fallen slightly due to the Riksbank’s decision to cut the repo rate in February. Longer government bond yields have increased slightly, in line with developments in the United States. The differential in relation to German yields has been largely unchanged for 2 year maturities but has risen slightly for 10 year maturities (see Figure 2:3). Strong Swedish macro statistics are judged to be the reason Swedish yields have not fallen like German yields.

**The foreign exchange market**

**Some appreciation in the Swedish krona since mid-February**

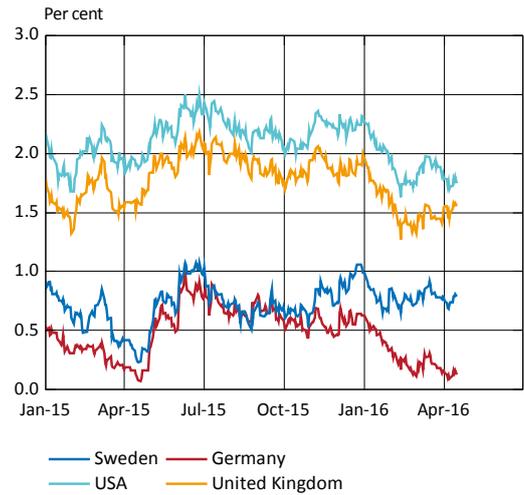
In recent years, periods of increased financial uncertainty have led to the euro becoming stronger. The relationship can

**Figure 2:1. Policy rates and rate expectations according to forward rates**



Note. Forward rates describe the expected overnight rate, which does not always correspond to the policy rate. There is no published overnight rate in Sweden, but it normally follows the repo rate closely. Unbroken lines are estimated on 18 April 2016, broken lines on 10 February 2016. Sources: Macrobond and the Riksbank

**Figure 2:2. Government bond rates with 10 years left to maturity**



Source: Macrobond

**Figure 2:3. Yield differential in relation to Germany**



Note. The yield curve is zero coupon yields interpolated from bond prices in accordance with the Nelson-Siegel method. Sources: Macrobond, Thomson Reuters and the Riksbank

be explained by investors, in normal periods, having borrowed money at low interest rates in the euro area to then invest in higher-risk assets in other currencies. When uncertainty increases, investors sell these assets and change the money back to euros, which tends to strengthen the euro. In conjunction with the financial unease at the start of the year, the euro also appreciated against most currencies. This trend was broken in the middle of February when unease on the financial markets subsided and expectations of new stimulation from the ECB grew. However, the euro has appreciated again following the decisions in March from the ECB and Federal Reserve.

Since the middle of February, the krona has appreciated in competitiveness-weighted terms and grown stronger than predicted in the Riksbank's latest forecast (see Figure 1:8). The greatest contribution comes from an appreciation against the euro, dollar and sterling (see Figure 2:4). The development is judged to be due partly to international currency fluctuations, including the weak development of the dollar and sterling against many currencies, but also to strong Swedish macrostatistics.

## Global asset prices

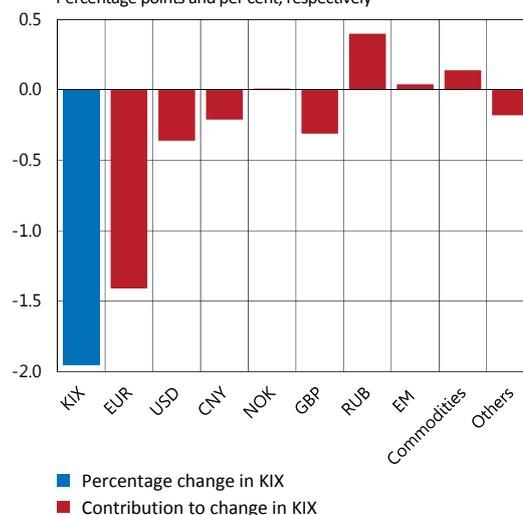
### Recovery of global asset prices

Following relatively substantial stock market falls at the start of the year, the world's stock markets have recovered since the middle of February (see Figure 2:5). Stock exchanges in developed countries have followed another relatively closely but, in the emerging market economies, the differences have been greater. Among other things, the stock exchanges in oil-producing countries such as Russia and Brazil have risen sharply, while the recovery in China has been more subdued.

Stock exchange movements in Europe, the United States and Japan have also been characterised by large fluctuations in bank shares in recent months. This follows speculation that the negative policy rates are undermining profitability among the banks. A great deal of this uncertainty remains, above all in the euro area, where it is linked to the fact that many banks have a large proportion of bad loans and thereby low earnings and high costs (see the article "How do low and negative interest rates affect banks' profitability?").

The credit market has also recovered and risk premiums for corporate bonds have fallen in Sweden and abroad. However, risk premiums on higher-risk bonds have risen overall in the last year. The main reason is probably increased unease over the global economy, which is causing investors to leave higher-risk securities and instead invest in government securities. In the United States in particular, this development is also due to the low oil price, which has pushed profitability down among companies in the oil industry.

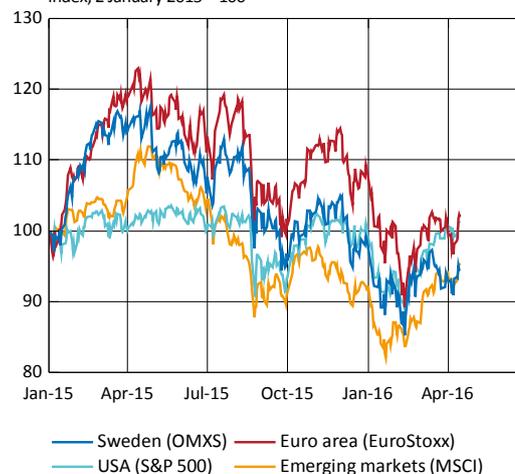
**Figure 2:4. Contribution and changes to KIX exchange rates**  
Percentage points and per cent, respectively



Note. The figure shows change in KIX and contributions from different currencies between 10 February 2016 and 18 April 2016. EM refers to Brazil, Hungary, India, Mexico, Poland and Turkey. Commodities refer to Australia, Canada and New Zealand. Others refers to Czech Republic, Denmark, Iceland, Japan, South Korea and Switzerland.

Sources: Thomson Reuters and the Riksbank

**Figure 2:5. Stock market movements**  
Index, 2 January 2015 = 100



Sources: Macrobond and Thomson Reuters

## The financial situation for companies and households

### Continued good funding conditions for Swedish banks

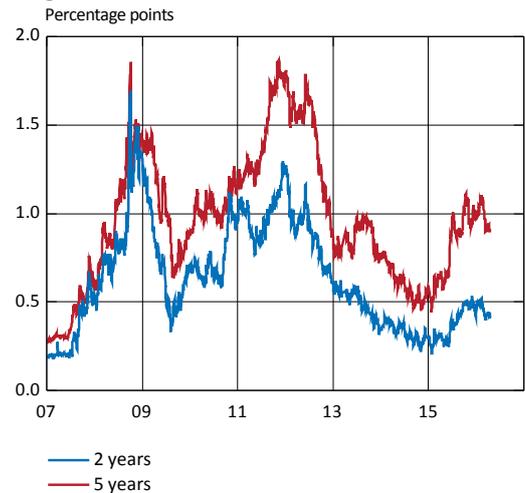
Increased uncertainty in the banking sector in the euro area has also partly spilled over to Swedish banks, in the form of, for example, slightly higher borrowing costs in February. Unease over the Swedish banking sector has been significantly lower, which is connected to the Swedish banks having continued good profitability and good funding conditions (see the article “How do low and negative interest rates affect banks’ profitability?”). Despite a recent recovery, the interest rate differential between Swedish mortgage bonds and government bonds has increased over the last year, which may in the long run lead to higher funding costs for the banks (see Figure 2:6). Some of the increase is probably linked to developments on the international credit market. The Riksbank’s purchases of government bonds are also deemed to have contributed to the increased yield differential. However, all in all, Swedish banks are deemed to have favourable funding conditions, which creates good preconditions for lending to households and companies.

### Low interest rates for households and companies

Households and companies are continuing to borrow at very low interest rates. In February, the average mortgage rate for new agreements fell to 1.6 per cent. For non-financial corporations, the interest rate for bank loans has increased slightly in recent months to 1.5 per cent. Deposit rates for households and companies have remained largely unchanged since the middle of last year and have been very close to zero (see Figure 2:7).

Lending rates to households and companies have been cut more or less in line with the repo rate since it became negative in February 2015. It is too early to evaluate the effects of the Riksbank’s decision in February to cut the repo rate to –0.5 per cent, as there is still no complete data on final interest rates from the financial market statistics.<sup>7</sup> The banks’ mortgage rates indicate, however, that they have chosen not to cut lending rates to the same extent as following previous interest rate decisions. This could be an indication that the impact has decreased slightly as the repo rate has gone further into negative territory. A possible explanation is that the banks’ funding costs have not fallen to the same extent as the repo rate over the past year, which can partly be explained by the banks, in most cases, having decided not to let deposit rates turn negative.<sup>8</sup> Another contributory factor

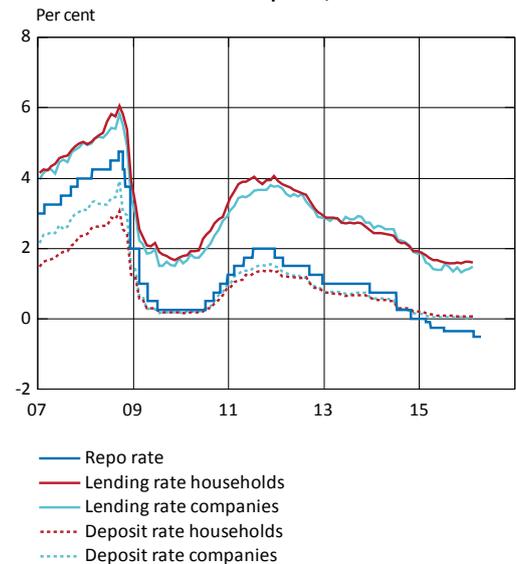
**Figure 2:6. Yield differential between mortgage bonds and government bonds**



Note. Mortgage bond and government bond yields are zero coupon yields interpolated from bond prices using the Nelson-Siegel method.

Sources: Macrobond and the Riksbank

**Figure 2:7. Repo rate together with the deposit and lending rate to households and companies, new contracts**



Note. MFIs’ average deposit and lending rates for households and companies.

Sources: Statistics Sweden and the Riksbank

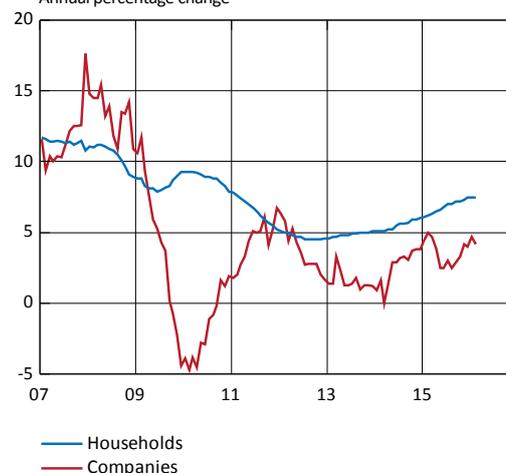
<sup>7</sup> Financial market statistics are available for up to the end of February. These statistics provide a certain indication of how final interest rates were affected by the Riksbank’s decision in the middle of February, but, as the statistics are an average for the month, the average is also affected by the interest rate that applied before the decision.

<sup>8</sup> See, for example, J. Alsterlind, H. Armelius, D. Forsman, B. Jönsson och A-L Wretman, “How far can the repo rate be cut?”, *Economic Commentaries* No 11, 2015, Sveriges Riksbank.

may be the increase in the yield differential between mortgage bonds and government bonds over the past year, which may, in the long run, lead to higher funding costs.

Lending to household and companies continues to increase at a rapid rate and, in February, the annual growth rate in bank loans to households was unchanged at 7.5 per cent, while the rate of increase to companies fell slightly to 4.2 per cent (see Figure 2:8). Households are continuing to take loans with tenant-owned apartments and single-family houses as collateral and, in March, housing prices increased by 14 per cent as an annual rate. SEB's housing price indicator has also risen in recent months and increasing numbers of households expect housing prices to continue to rise. In addition, for companies, lending via securities is increasing and, in February, the growth rate in securities borrowing was 8.5 per cent.

**Figure 2:8. Bank lending to households and companies**  
Annual percentage change



Note. MFIs' lending to households and non-financial companies according to financial market statistics adjusted for reclassifications and traded loans since 2006. Money supply is M3 outstanding amount.

Source: Statistics Sweden

#### **Negative deposit rate for certain companies and municipalities**

Since the repo rate became negative, the banks have, for various reasons, chosen not to introduce negative deposit rates for households and most companies. But certain major companies and municipalities are now being charged a negative interest rate for their deposits. This concerns actors with relatively high deposit volumes or those able to obtain funding themselves on the financial markets at negative interest rates. For example, certain major companies and municipalities can borrow over the short term at negative interest rates. If such actors can invest money at banks at a zero interest rate, it provides an opportunity for risk-free profits. For most actors, deposits are relatively small compared with how much they borrow from the banks. For municipalities and county councils, for example, deposits correspond to approximately one-sixth of their total borrowing and, when the Riksbank cuts the repo rate, their borrowing costs also fall. The expansionary monetary policy has also helped improve the economy and strengthen demand, which equates to higher profits for companies and greater tax revenues for municipalities. So even if certain major companies and municipalities have to pay to deposit their money with the banks, the overall effect is positive for most of them.

## ARTICLE – How do low and negative interest rates affect banks' profitability?

To push inflation up, the Riksbank and several other central banks have introduced negative interest rates. Critics say that negative rates counteract their purpose in that they are said to squeeze banks' profitability, which could then lead to higher lending rates and lower credit supply. This discussion has arisen in the euro area in particular, where banks are already burdened with low profitability. The Riksbank's assessment is that the overall effect of negative interest rates on banks' profitability is limited and may even be positive, and that the function of Swedish banks in the monetary policy transmission mechanism is maintained even at a negative policy rate level.

### Efficient credit supply presupposes a well-capitalised banking system

To be able to lend to households and companies, banks need to have capital.<sup>9</sup> A good capitalisation implies in turn reasonable profitability, as new capital is in most cases built up via retained earnings.

Many banks in the euro area have been burdened by weak profitability for a long time. This has a negative effect on their capital situation and limits their scope for supplying the economy with loans. By extension, a banking system with weak profitability impairs monetary policy transmission.

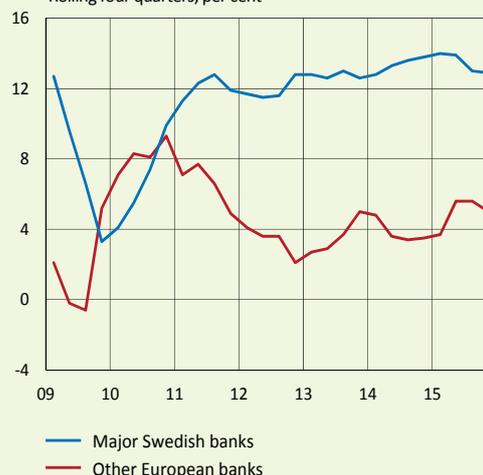
Even if profitability among banks in the euro area has been weak for some time, fresh concerns have recently emerged regarding their scope for improving profitability in a situation with low, and, in particular, negative interest rates.

The overall effect of low and negative interest rates on banks' profitability is not obvious in advance, however. Profitability can be affected in several ways, for instance as a result of falling lending rates and funding costs, but also due to changes in lending volumes, credit losses and commission income.<sup>10</sup>

### Low profitability in the euro area, high profitability in Sweden

In contrast to Swedish banks, the banks in the euro area have been burdened with weak profitability for some time, when measured in terms of return on equity (see Figure 2:9). This is primarily due to that many banks there have high credit losses and hence lower earnings. In addition, they have relatively high costs.

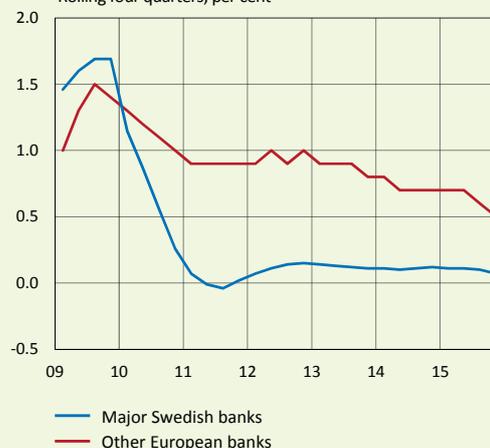
**Figure 2:9. Return on equity**  
Rolling four quarters, per cent



Note. Unweighted average. The red line represents a sample of large European banks.

Sources: Banks' interim reports and SNL Financial

**Figure 2:10. Loan losses in relation to lending to the public**  
Rolling four quarters, per cent



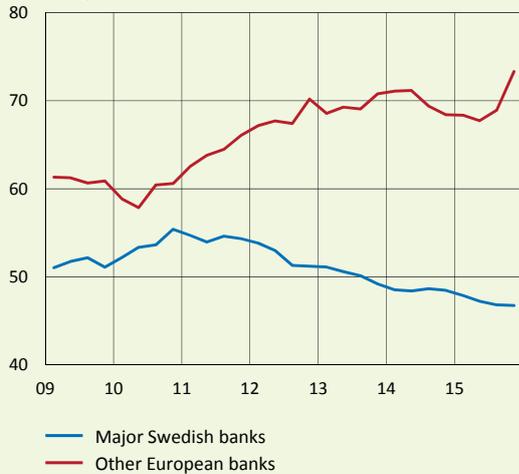
Note. Unweighted average. The red line represents a sample of large European banks.

Sources: Banks' interim reports and SNL Financial

<sup>9</sup> See, for example, H.S Shin, "Bank capital and monetary policy transmission", Panel remarks at The ECB and its Watchers XVII Conference, Frankfurt, 2016.

<sup>10</sup> See the article "Swedish financial institutions and low interest rates" in Financial Stability Report 2015:2.

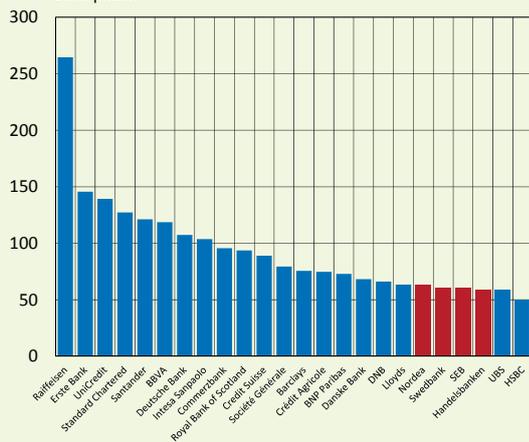
**Figure 2:11. Cost-to-income ratio**  
Rolling four quarters, per cent



Note. Unweighted average. The red line represents a sample of large European banks.

Sources: Banks' interim reports and SNL Financial

**Figure 2:12. Indicative funding cost for a sample of European banks**  
Basis points



Note. Measured as five-year CDS premiums and refers to the average over the last year.

Sources: Macrobond and the Riksbank

Swedish banks, on the other hand, have had low credit losses over a longer period of time (see Figure 2:10). In addition, their cost efficiency is high (costs in relation to revenue) and they have also implemented several savings plans in recent years that have further improved the cost efficiency (see Figure 2:11). Furthermore, Swedish banks have low funding costs, which is positive for profitability (see Figure 2:12).

**Low interest rates squeeze deposit margins**

Banks' profitability is affected by the difference between the lending rate and the interest with which they fund their lending, known as the interest margin. Since both the lending rate and the interest rate on funding normally follow the policy rate, the interest margin ought not to be

affected by the level of interest rates. But at low and negative rates, the interest rate for funding might not fall

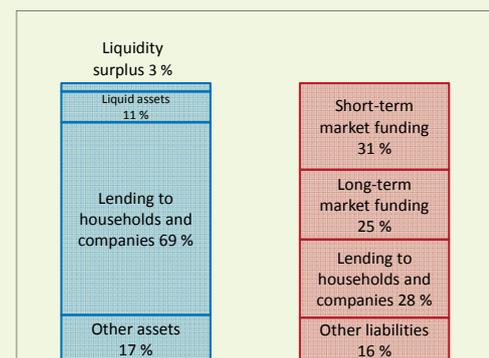
**Figure 2:13. Stibor and the deposit rate**  
Per cent



Note. Refers deposit rates for households and companies.

Sources: Statistics Sweden and the Riksbank

**Figure 2:14. Swedish banks' balance sheets in SEK**  
Allocation in per cent



Note. The balance sheet refers to Swedish banks' operations in Swedish kronor. The balance sheet total in Swedish kronor amounts to SEK 8,000 billion. Other liabilities also includes equity.

Sources: Statistics Sweden and the Riksbank

as much as the lending rate. This is because banks in Sweden and the euro area have so far chosen not to expose households and companies to a negative deposit rate. This means in turn that banks' "deposit margins", that is the difference between a market rate and the interest on deposits, are squeezed (see Figure 2:13). This has a negative impact on profitability.

But the extent to which the deposit margin affects profitability depends on how much a bank is dependent on deposit funding. In Sweden, banks largely obtain financing through wholesale funding (see Figure 2:14). Low and negative interest rates therefore lead to a fall in costs for a large share of the funding. In the euro area,

however, banks' funding comes from deposits to a greater degree.<sup>11</sup>

### Lower interest rates lead to fewer bad loans and lower credit losses

With lower funding costs, banks can offer lower lending rates to existing customers without a reduction in the interest margin. This strengthens the customers' debt-servicing ability, which in turn reduces credit losses and the need to make provisions for anticipated credit losses. In addition, lower interest rates lead to better macroeconomic conditions, which boost corporate profitability. This allow for higher wages, which further improves the conditions for borrowers in the management of their interest payments. Low and negative interest rates thereby make it easier for many banks in the euro area that have been burdened by large credit losses for a long time.<sup>12</sup> But this effect is less for Swedish banks since they have not been burdened by bad loans and credit losses during the current cycle of interest rate cuts.

### Limited costs of the liquidity surplus

In both Sweden and the euro area, the banking systems have a liquidity surplus in relation to the central bank, that is they need to place liquidity at the central bank. The surplus has also increased concurrently with the Riksbank's and ECB's purchases of securities, known as "quantitative easing". The surplus is placed in the central bank, at an interest rate either equal or close to the policy rate. If the policy rate is negative, banks therefore have to pay interest on these placements. But banks can largely fund their liquid assets at a currently negative interest rate. The surplus is also very small in relation to the banks' total assets both in Sweden (see Figure 2:14) and in the euro area. Overall, the effect on banks' income of investing the surplus at a negative interest rate is therefore very small.

### No unequivocal effect on banks' profitability

Low and negative interest rates affect banks' profitability in different ways. Table 2:2 shows the effect of low and negative interest rates on a bank's income statement.<sup>13</sup> As falling interest rates lead to lower funding costs, banks' interest margins should, in most cases, only be effected to a limited extent. On the other hand, a squeezed deposit margin means less net interest income. At the same time, however, the demand for loans increases at low interest

rates, which can lead to larger lending volumes. Increased lending volumes improve earnings. It also contributes positively to profitability if the lending takes

**Table 2:2. Effect of low and negative interest rates on banks' earnings**

Income item	Effect
Net interest income	
Interest margin	Varies
Deposit margin	–
Increased volumes	+
Net commission income	+
Net results from item at fair value	+
Costs*	–
Loan losses	+
Profit	Varies

Note. + and – specify the effect on banks' earnings. \*The costs are specific to negative interest rates and do not apply to low rates in general.

place at a greater interest margin than previously. Fee and commission income also tend to rise in low interest rate environments. This is in part due to the fact that the demand for capital management and investment banking services may increase when interest rates are low. Low interest rates also have a positive effect on the market for Swedish corporate bonds, which generates higher fee income for the major Swedish banks that have significant underwriting and advisory activities.

Debt securities often increase in value when interest rates fall. Therefore, falling interest rates can also boost bank's profitability as a result of increased valuation profits (known as "net results from items at fair value" in the income statement).

For certain banks, there may, however, be costs specifically linked to negative interest rates. These include costs for IT systems that may have limited scope for dealing with negative interest rates, leading to extra costs for manual administration. They also include costs associated with dealing with legal and contractual problems that arise when interest rates are negative. The extent of these costs is difficult to assess, however. As already discussed, low interest rates may also lead to lower credit losses and hence have a positive effect on banks' income.

The overall effect of low and negative interest rates on banks' profitability both in Sweden and the euro area is mixed, and may differ from one bank to another. Swedish banks' profitability has been high and stable during the cycles of interest rate cuts in recent years, while profitability among banks in the euro area has increased during the corresponding period. There is therefore nothing to suggest that low and negative interest rates have so far had a negative effect on banks' profitability. The profitability problems among banks in the euro area

<sup>11</sup> See, for example, H.S Shin, "Bank capital and monetary policy transmission", Panel remarks at The ECB and its Watchers XVII Conference, Frankfurt, 2016.

<sup>12</sup> European Central Bank, Annual Report 2015, "Box 3: What do low interest rates mean for banks and savers?"

<sup>13</sup> A bank's earnings is not the same as its profitability. Profitability defined as return on equity refers to earnings in relation to equity. How the volume of equity has developed is therefore significant when evaluating profitability for a given period.

can instead be explained by more fundamental problems with a large proportion of bad loans in combination with high costs.

The Riksbank's assessment is that the function of Swedish banks in the monetary policy transmission mechanism has been maintained despite a negative repo rate. The banks' stable profitability therefore continues to create the prerequisites for efficient credit supply in Sweden. The prevailing low level of interest rates may, however, contribute to the build-up of financial imbalances, particularly in the form of ever-greater indebtedness and higher credit risks among Swedish households and companies, which, in the longer term, may have a negative effect on the economy and banks' profitability.<sup>14</sup>

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<sup>14</sup> For further discussion, see the article "Swedish financial institutions and low interest rates" in Financial Stability Report 2015:2.

## CHAPTER 3 – The current economic situation

Global growth was restrained towards the end of 2015, but indicators suggest that overall growth in those economies that are important for Sweden's foreign trade has moved in a positive direction since then. Instead, GDP growth in Sweden was surprisingly high in the fourth quarter of 2015. It is deemed to have shifted down slightly since then, partly due to export growth easing off. Nevertheless, resource utilisation in the Swedish economy continues to rise, which is reflected by falling unemployment, among other developments. The rising trend in inflation has continued, partly because the earlier depreciation of the krona is still pushing certain prices up. Inflation is, however, expected to move sideways in the months ahead. The exchange rate's contribution to inflation is diminishing although rising resource utilisation is gradually having a greater impact.

### Inflation

#### Gradually higher inflation

Inflation is higher now than last year, even though the trend from one month to the next is uneven. Despite a slight increase in the past months, CPI inflation is still very low as both households' interest expenses and energy prices have fallen. But a number of measures of underlying inflation indicate a rising rate of increase for consumer prices. Together with the growth of other prices in the economy, this ensures that CPI inflation will also rise gradually (see the article "A broader picture of price development in Sweden").

Outcomes in early 2016 were slightly higher than expected (see Figure 3:1). Clothes and shoe prices, for instance, have increased unusually quickly. A likely explanation is that the depreciation of the Swedish krona between 2014 and 2015 is still contributing to faster price rises. Parts of clothes and shoe collections are purchased long before they reach the shops and this is one reason why exchange rate fluctuations tend to affect these prices with a particularly long time lag.

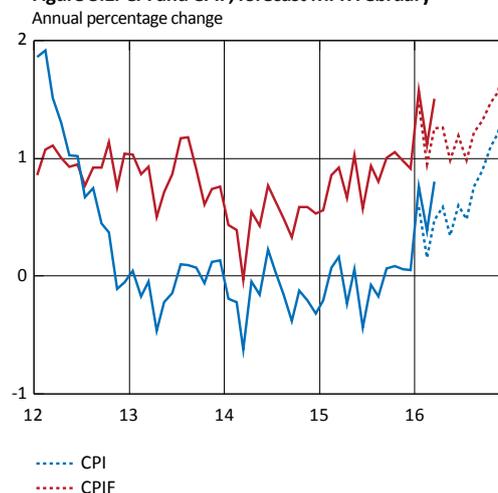
The surprising inflation outcomes were also due to positive contributions from services, whose prices seldom change, for example banking services and publicly financed services, such as medical care. On the one hand, prices of these services tend to change so rarely that further positive surprises from here cannot be expected in the short term. On the other hand, contributions to inflation emanating from this type of service in recent months are likely to remain for an entire year. All in all, the inflation outcomes since the February Monetary Policy Report suggest that inflation will be slightly higher over the next few months than previously forecast.

Table 3:1.

Expected development in MPR February	Actual development
CPIF inflation 1.2 per cent in first quarter.	Stronger than expected, CPIF inflation was 1.4 per cent.
GDP growth 3.5 per cent in fourth quarter	Stronger than expected. GDP growth was 5.3 per cent.
Unemployment falls to 6.9 per cent in first quarter.	Monthly outcome and indicators suggest that unemployment will be 7.0 per cent.
GDP growth in the euro area 1.5 per cent, fourth quarter.	Weaker than expected. GDP growth was 1.3 per cent.
GDP growth in the United States 0.7 per cent in fourth quarter.	Stronger than expected. GDP growth was 1.4 per cent.

Note. Monetary Policy Report (MPR). The CPIF is the CPI with a fixed mortgage rate. CPIF inflation is measured as annual percentage change. GDP growth refers to the quarterly change as a percentage, calculated as an annual rate.

Figure 3:1. CPI and CPIF, forecast MPR February



Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

### Divided inflation indicators

At the same time, it is difficult to obtain a uniform picture of developments in the near future based on inflation indicators. Commodity prices for items such as food are falling on the global market. And after a few years of increases, the import price index for consumer goods has stopped rising, mainly as a result of the krona starting to appreciate. It is perhaps not surprising, therefore, that the Riksbank's Business Survey indicates that consumer-related companies are currently finding it difficult to further raise their prices.

But there are also indicators that suggest faster price rises in the period ahead. In the producer sector, domestic market prices of consumer goods are rising, albeit gradually. The Economic Tendency Survey indicates that companies in the retail sector expect to increase their prices to a greater extent than a historical average (see Figure 3:3). Producers are also planning price increases. And even though the level is still low in a historical perspective, the business sector's inflation expectations for the next 12 months have risen. This tendency can also be found among other actors in society. According to Prospera's survey, the inflation expectations continue to rise (see Figure 1:9).

One way of considering the mixed signals is to follow a more formal model analysis. Such an analysis indicates that the growth rate in CPIF excluding energy will slow down over the next six months (see Figure 3:4). With the exception of April, the model forecast is basically in line with the Riksbank's assessment. In April, the model forecast is higher than the assessment, as it does not completely take into account the fact that prices of foreign travel have probably fallen considerably compared with March when they rose in connection with holidays around Easter. All in all, this still implies a marginal upward revision of the judgemental forecast since the February Monetary Policy Report. The upward revision is clearer in the CPIF, as energy prices look like they will be higher than in the previous forecast. CPI inflation has also been revised up.

## Global and Swedish economic activity

### Slight slowdown in global growth at the end of last year

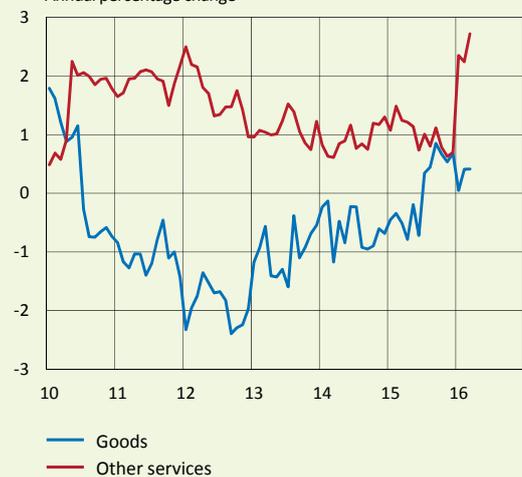
Global growth was subdued towards the end of 2015. This was due not least to the fact that growth in developed economies was weak or stagnant. For example, GDP growth in several of the Nordic countries fell during the fourth quarter of 2015. At the same time, the recession continued in several emerging market economies, including Russia and Brazil. Global trade slowed and indicators such as the global PMI for new export orders suggest that trade also increased slowly at the beginning of 2016.

Despite lower global growth, GDP did not fall in the euro area during the fourth quarter of 2015, but was the same as

### Break in time series of CPI breakdown of goods and services

To better analyse inflation, the Riksbank breaks the CPI down into sub-aggregates such as goods and services, while Statistics Sweden primarily emphasises divisions based on consumption purposes. At the start of the year, a break occurred in the time series of the Riksbank's breakdown, as Statistics Sweden had removed the product group telephones from telephony in the sub-aggregate services and moved it to home electronics, among goods. This led to an apparent boost for the price development of services and a corresponding dampening of prices for goods, which may complicate the interpretation of the statistics. The prices of several kinds of service are showing a trend increase (see Figure 3:14). But the break in the time series gives the incorrect impression that the rate has now increased considerably (see Figure 3:2). Changes in taxation also make a considerable contribution to the faster price increases since January.

**Figure 3:2. Goods and other services in the CPI**  
Annual percentage change



Note. Other services here refers to services in the CPI excluding foreign travel, rents and property tax. The sub-aggregate goods does not include food. The weight of the sub-aggregates are 31 and 25 per cent respectively of the total CPI basket.

Sources: Statistics Sweden and the Riksbank

**Figure 3:3. Sales prices in the retail trade, expectations**  
Net figures, seasonally-adjusted data



Note. The broken line is the average from May 2003 up to and including the most recent outcomes. The National Institute of Economic Research asks about expected sales prices in the coming three months.

Source: The National Institute of Economic Research

in the third quarter. There are signs, however, that the positive effects on growth, both from the lower oil price and from earlier depreciations of the euro exchange rate, have begun to wane. The growth rates for both household consumption and exports fell towards the end of last year. Instead, GDP was maintained by public consumption, which grew more quickly than for many years. This can partly be linked to the increased number of refugees.

In the United States, GDP growth fell slightly during the fourth quarter of last year – to a great extent due to a strong dollar amplifying the effect of weaker global demand. The slowdown was also caused by slow investment growth, even outside the energy sector, which was hit hard by the low oil price. GDP growth in the United States was, however, higher than the forecast in the February Monetary Policy Report.

**Indicators suggest global growth to pick up again**

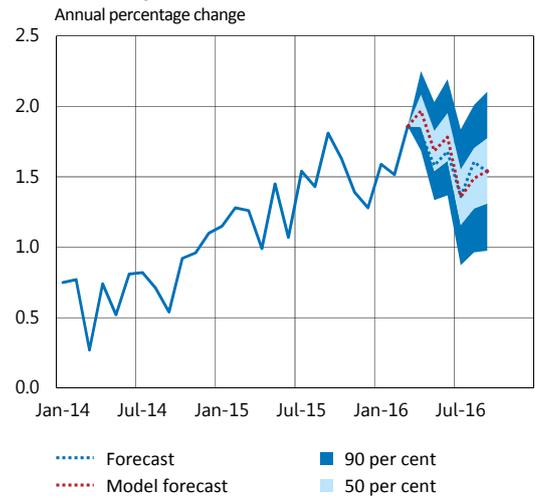
The beginning of the year saw a broad decline in corporate confidence around the world (see Figure 3:5). Households confidence has also decreased. In March, it seems that many indicators have stabilised or picked up again. At the same time, other statistics, such as retail sales and industrial output, have created a mixed impression of developments. In the euro area, these data have mostly pointed to rising growth, although the opposite is true in the United States. China’s economy had a partly tentative start to the year with subdued growth in both the retail and industrial sectors in January and February. However, growth in both these sectors turned up in March. At the same time, investment in fixed assets rose more quickly than towards the end of last year. Indicators of GDP growth in the economies that are most important for Sweden’s foreign trade suggest overall that the slowdown in the fourth quarter of 2015 was temporary, and that the growth rate increased slightly in the first quarter of 2016.

**Oil price still subduing inflation abroad**

The oil price has risen from a low level as financial markets have improved. According to the International Energy Agency (IEA), the oil price may have bottomed out, indicating that supply is decreasing more quickly than previously in the United States and other non-OPEC countries. Nor has supply from Iran increased as much as many people thought it would. But even if the oil price has risen recently, the level is still significantly lower than it was one year ago (see Figure 4:1).

Inflation in many of the economies that are important for Sweden’s foreign trade has begun to increase from low levels. This is partly due to the negative contribution of energy prices to inflation gradually waning. But underlying inflation has also risen, although it is still low in several countries (see Figure 3:6). An important exception is the United States, where inflation is markedly higher.

**Figure 3:4. Model forecast CPIF excluding energy with uncertainty bands**



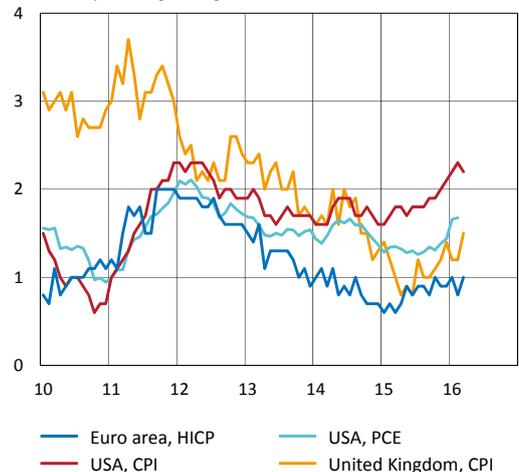
Note. The uncertainty bands are based on the models’ historical forecasting errors. The CPIF is the CPI with a fixed mortgage rate. Sources: Statistics Sweden and the Riksbank

**Figure 3:5. International purchasing managers index**  
Index, seasonally-adjusted data



Note. Index above 50 indicates growth. Source: Markit

**Figure 3:6. Core inflation in various countries and regions**  
Annual percentage change



Note. HICP excluding energy and unprocessed food is shown for the euro area. CPI and PCE excluding energy and food is shown for the United States, and CPI excluding energy, food, alcohol and tobacco is shown for the United Kingdom.

Sources: Macrobond and national sources

**Swedish GDP growth slowing slightly after a very strong 2015**

The Swedish economy grew very quickly in 2015, especially during the fourth quarter. Several indicators suggest continued favourable growth in the first half of 2016, although growth is slowing down somewhat compared to last year.

GDP grew by just over 5 per cent in the fourth quarter compared to the third quarter, calculated in annualised terms, which was clearly more than expected. The high growth rate is due to both favourable development of domestic demand and high export growth. Some of the growth in the fourth quarter is deemed to be due to temporary factors, which resulted in an unusually rapid rise in both service exports and investments in reconstruction. These factors are expected not to have continued during the first quarter of 2016 and GDP growth is therefore expected to have dampened somewhat.

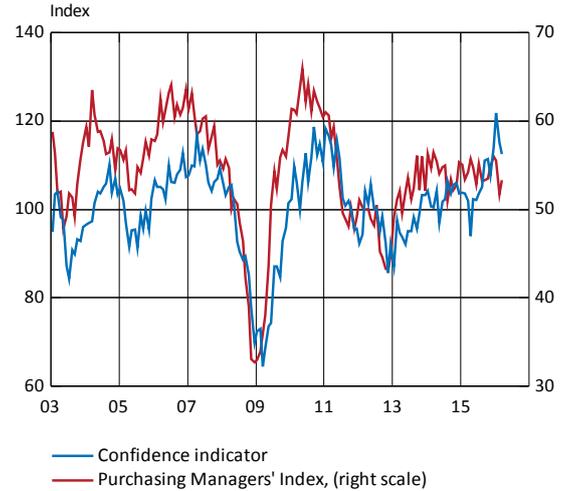
The strong growth in 2015 has not been unequivocally reflected in the most key confidence indicators. This pattern continues. The Economic Tendency Survey continues to signal optimism in all business sector industries and particularly in the manufacturing industry, but according to the Purchasing Managers' Index, confidence in the manufacturing sector is not as strong (see Figure 3:7). The picture of consumer confidence also continues to be difficult to interpret. According to the Economic Tendency Survey, consumer confidence is close to the historical norm, but consumers are more positive as regards the outlook for their own financial situation than for the Swedish economy. Indicators for the retail sector and new car registrations are developing favourably, however, and household consumption is expected to grow quickly, in a historical context during the first half of 2016.

Swedish export growth was high in 2015, despite only moderate growth in demand on Swedish export markets. The relatively rapid export growth is probably at least in part due to the krona's depreciation between 2014 and 2015. At the beginning of 2016, new export orders were subdued according to both the Economic Tendency Survey and the Purchasing Managers' Index. All in all, export growth is deemed to be slowing slightly to a pace that is closer to the historical norm.

Growth in public consumption was high in 2015, partly as a result of the increase in the number of asylum seekers last year. Despite the rise in expenditure, the central government financial balance improved significantly. This was due in part to the fact that the favourable economic development led to higher tax revenues but has also been affected by a one-off event.<sup>15</sup>

<sup>15</sup> A single corporate group in the business sector paid additional corporate tax amounting to SEK 15 billion. There are many indications that this payment was a one-off event. In addition to this, the Swedish Tax Agency has highlighted large payments into tax accounts

**Figure 3:7. Indicators for the manufacturing industry**

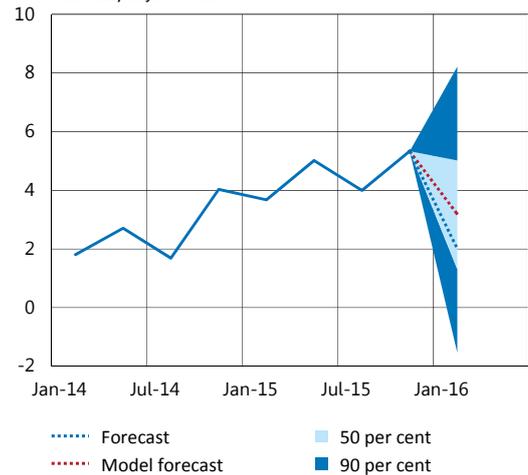


Note. The confidence indicator has been standardised so that the mean value is 100 and the standard deviation is 10. The purchasing managers' index is a diffusion index in which values above 50 indicate growth.

Sources: The National Institute of Economic Research and Swedbank/Sif

**Figure 3:8. Model forecast GDP with uncertainty bands**

Quarterly changes in per cent, calculated as an annual percentage change, seasonally-adjusted data



Note. The model forecast is an average of forecasts from different statistical models that take into account monthly statistics for demand and production and survey data in the Business Tendency Survey and Purchasing managers index. The uncertainty bands are based on the models' historical forecasting errors.

Sources: Statistics Sweden and the Riksbank

**Figure 3:9. Employment and unemployment rate**

Per cent of population and labour force, respectively, 15–74 years



Sources: Statistics Sweden and the Riksbank

The information in the short-term indicators of GDP growth can also be summarised in statistical models. For the first quarter, the model forecasts indicate a slowdown in growth since the end of last year (see Figure 3:8). But the Riksbank’s final forecast is not just based on the model forecasts but also on assessments of factors that are not included in or not properly captured by the models. The high GDP growth during the fourth quarter is partly due to such factors. Since these, as mentioned above, are not deemed to have continued into the first quarter, the Riksbank’s forecast is lower than the model forecasts. Swedish GDP is therefore expected to grow by just over 2 and 3 per cent respectively during the first two quarters of 2016, compared with the previous quarter and when calculated as an annual rate.

**Resource utilisation is approximately normal**

Developments on the Swedish labour market continue to be favourable. The rapid growth in GDP has increased the demand for labour. The employment rate has risen steadily for several years and last year unemployment also fell relatively quickly (see Figure 3:9).

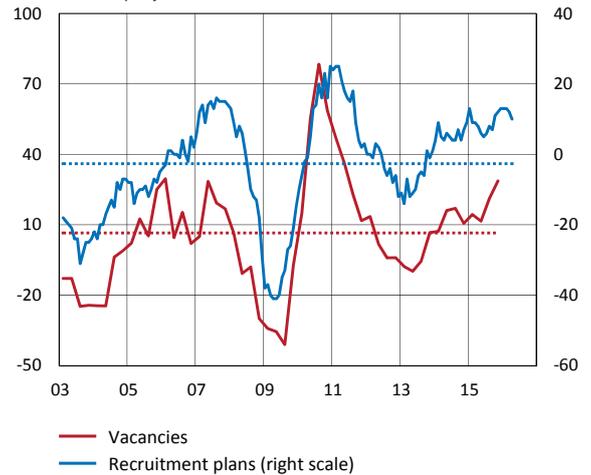
Business surveys from Statistics Sweden, and the National Institute of Economic Research continue to paint a bright picture (see Figure 3:10). At the same time, more job vacancies have been reported to Arbetsförmedlingen (Swedish Public Employment Service). Overall, indicators show that the employment rate will continue to rise and that unemployment will continue to fall in the next quarter.

Indicators suggest that resource utilisation on the labour market, after many years of depression, has increased and is now approximately normal (see the article “Resource utilisation on the labour market is roughly normal, but the assessment is uncertain”). For example, the Economic Tendency Survey shows that the share of companies experiencing a labour shortage has been increasing for several years (see Figure 3:11). In a broader perspective, for the Swedish economy as a whole, the Riksbank also considers resource utilisation to be approximately normal. A sign of this is that the Riksbank’s RU indicator has risen since the beginning of 2013 and is now close to its historical average (see Figure 3:12).<sup>16</sup> Current resource utilisation is an important factor in forecasting work, since it affects the outlook for GDP growth and wage and price trends in the slightly longer term. The amount of spare capacity cannot be measured directly, however, but must instead by

that do not refer to actual tax. Such payments are not included in the calculation of the general government net lending, but do affect the budget balance.

<sup>16</sup> The RU indicator is a statistical measure based on statistics from, above all, the Economic Tendency Survey and the Labour Force Surveys. The indicator provides an estimate of how far resource utilisation has deviated from its mean value since 1996. This historical mean value is given the value 0 when constructing the indicator. If the RU indicator shows a value of 0 at a point in time, it is not necessarily a sign that resource utilisation is exactly normal, but that it is average. According to the Riksbank’s overall assessment, resource utilisation has been slightly lower than normal since 1996. This might suggest that the current 0 value in the RU indicator is a signal that resource utilisation in the economy is not completely normal, but slightly lower than normal.

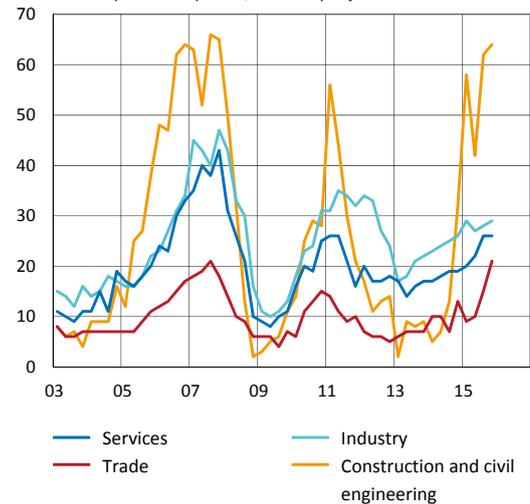
**Figure 3:10. Vacancies and recruitment plans**  
Annual percentage change and net figures, respectively, seasonally-adjusted data



Note. Recruitment plans refer to expectations of the number of employed in the business sector. Broken lines refer to averages from 2003 up to and including the most recent outcomes.

Sources: The National Institute of Economic Research and Statistics Sweden

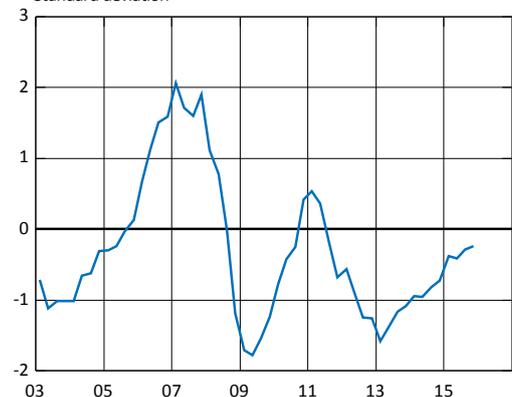
**Figure 3:11. Labour shortage**  
Share of positive responses, seasonally-adjusted data



Note. Construction and civil engineering refers to the proportion of firms that have quoted a labour shortage as their main obstacle to increased construction. Other industries refers to the proportion of firms responding yes to the question of whether there is a labour shortage.

Source: The National Institute of Economic Research

**Figure 3:12. RU indicator**  
Standard deviation



Note. The RU indicator is a measure of resource utilisation. It is normalised so that the mean value is 0 and the standard deviation is 1.

Source: The Riksbank

approximated. The Riksbank uses a broad set of indicators for this purpose.

In the period ahead, resource utilisation in the Swedish economy is expected to rise, since GDP and the number of hours worked is increasing more rapidly than the Riksbank's assessment of the trend growth rate over the next few years.

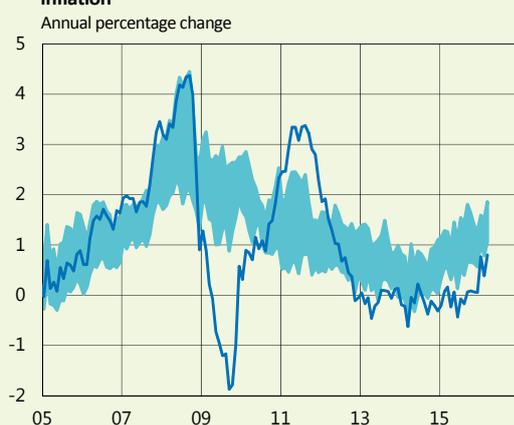
## ARTICLE – A broader picture of price development in Sweden

The Riksbank's target is an inflation rate measured in terms of the Consumer Price Index (CPI) of 2 per cent. This article provides a broader perspective on price developments in Sweden. CPI inflation is still low, but a faster rate of price increase can be seen in underlying inflation, among CPI sub-groups and in prices in the distribution chain earlier than at the consumer stage. This is deemed to be partly linked to the depreciation of the Swedish krona in recent years. But a faster rate of increase in more domestically determined prices is an indication of the fact that rising resource utilisation has begun to affect the rate of price increase.

### Underlying inflation rising

CPI inflation has been low in recent years and amounted to 0.8 per cent in March. Adjusted for the effect of falling mortgage rates, however, inflation is higher and the rate of increase in the CPI with a fixed interest rate (CPIF) amounted to 1.5 per cent. The rate of increase in many consumer prices has shown a rising trend over the past two years. This is visible in, for instance, developments in various measures of so-called underlying inflation (see Figure 3:13). The weakening of the krona since the beginning of 2014 gives one important explanation for this, but the rising resource utilisation is also thought to have some significance.

**Figure 3:13. The CPI and different measures of underlying inflation**



Note. The field shows the highest and lowest outcomes among different measures of underlying inflation. The measures included are the CPIF, the CPIF excluding energy, the CPIF with constant tax, UND24, Trim85, HICP excluding energy and unprocessed food, persistence-weighted inflation, factors from principal component analysis and weighted mean inflation.

Sources: Statistics Sweden and the Riksbank

Underlying inflation is not a uniform concept and can be calculated in different ways. One common method is to exclude certain predetermined components from CPI inflation that are considered to reflect more temporary and short-term price changes. The CPIF excluding energy is an example of such a measure. Another way of

measuring underlying inflation is to use statistical methods to systematically exclude or lessen the significance of groups of goods and services whose prices fluctuate sharply.<sup>17</sup>

In the past year, all the measures of underlying inflation have indicated higher inflation than the rate of increase in the CPI. It is primarily falling mortgage costs for households that have contributed to this. Households' interest costs are included in the CPI but have not affected underlying inflation to the same degree over the past 12 months.<sup>18</sup>

Among the CPI sub-groups, the clearest rise can be seen in the rate of price increase in goods and food. These increased significantly faster in 2015 than in 2014 (see Figure 3:14). The depreciation of the Swedish krona during 2014 and up until mid-2015 is considered an important cause of the increase as many of these goods have a relatively high import content. Since mid-2015, however, the krona has appreciated and the rate of price increase has therefore slowed somewhat regarding the prices of both goods and food.

There has, however, been a gradual rise in more domestically determined service prices. This is particularly clear if we look at a measure that has been adjusted for rents, foreign travel and the effects of tax changes.<sup>19</sup> This

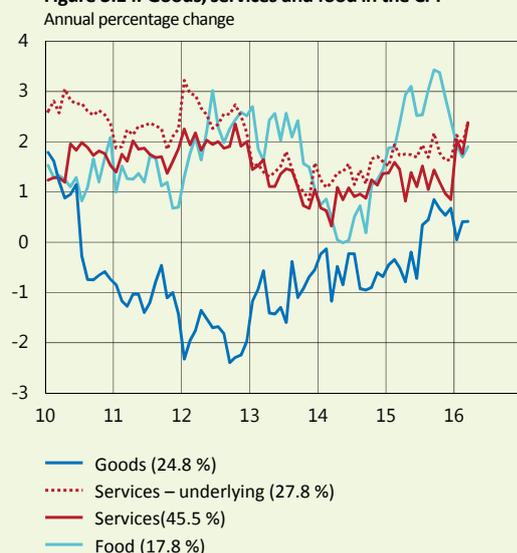
<sup>17</sup> In UND24, the CPI is weighed together using weights in relation to the standard deviation in the respective sub-group's rate of increase over the last 24 months. The higher the standard deviation, the lower the weight. In Trim85 and weighted median inflation, 15 and 99 per cent, respectively, of the highest and lowest price changes are excluded. Persistence-weighted inflation is weighed together using weights from estimated autoregressive parameters for the various CPI sub-groups. The higher the persistence, the greater the weight. In principal component analysis, the first principal component is estimated from the annual rate of increase in the various sub-groups.

<sup>18</sup> Changes in households' interest expenses are not included in the CPIF, the CPIFXE or the HICP and have not been included in the aggregate for Trim85 or the weighted median in the past year. Interest expenses are included in UND24, the factor from the principal component analysis and the persistence-weighted measure but with a lower weight than in the CPI.

<sup>19</sup> The reason why rents have been excluded is that the rental market is regulated and a change in demand probably only has a marginal effect on changes in the rent. Foreign travel is not only affected by domestic factors but also, to a large extent, by the development of the exchange rate. In addition to rents, foreign travel and tax changes, property tax and telecom prices have also been excluded from service prices. The prices of both telecom services and telephones were included in the

measure indicates more of a trend upturn in the rate of price increase in recent years (see Figure 3:14). This upturn is considered to be due to rising resource utilisation in the Swedish economy.

**Figure 3:14. Goods, services and food in the CPI**



Note. The sub-groups in the figure together constitute around 88 per cent of the CPI. The figures in brackets give the weight of the respective sub-groups in the CPI. Also included are energy prices and household interest expenditure. The measure services – underlying refers to prices of services excluding rents, foreign travel, property tax and telecommunications. The measure is also adjusted for the effects of changes in indirect taxes.

Sources: Statistics Sweden and the Riksbank

### Faster rate of price increase in early stages of distribution

Developments in consumer prices are affected by, among other factors, the way prices of imports and domestic output develop.

In recent years an upturn in the rate of price increase in the business sector and the entire domestic output has been visible (see Figure 3:15). These rates of price increase are calculated from implicit price indices (deflators) that can be obtained by dividing statistics from the National Accounts in current prices by statistics in fixed prices.

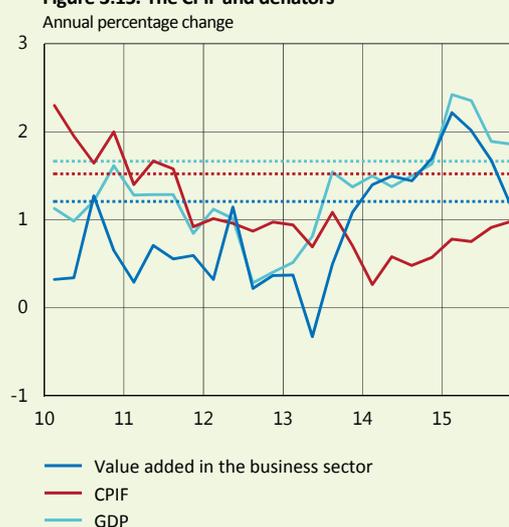
Among the components of GDP, it is primarily the implicit price indices for exports and investment that have increased at a faster pace. In the business sector, the fastest rate of price increase has been in the manufacturing industry and in retail. The rate of price increase in the business sector and overall GDP has been higher over the past year than its historical average and higher than the rate of increase in the CPIF.

A faster rate of price increase can also be seen in producer prices over the past two years. Import prices for consumer goods increased at a faster pace than their historical averages during 2014 and 2015 (see Figure

3:16). Prices on the domestic market, that is prices of goods produced and sold in Sweden, have increased more slowly than their historical average since 2013 although a certain upturn in the rate of price increase has occurred in the last six months.

The depreciation of the krona from 2014 to the middle of 2015 is assessed as an important explanation for the increasingly rapid increase in prices at an earlier stage than the consumer channel in recent years.<sup>20</sup> A downturn has accordingly been seen in the rate of price increase during the autumn of 2015, when the krona stopped depreciating and instead began to strengthen. However, the increase in domestic resource utilisation is also assessed to have contributed to a rise in the rate of price increase over the past year.

**Figure 3:15. The CPIF and deflators**



Note. Broken lines refer to average rate of increase since the year 2000.

Sources: Statistics Sweden and the Riksbank

service price aggregate until the end of December 2015, but as from January 2016, telephones have been included in the goods price aggregate. This complicates the picture.

<sup>20</sup> Import prices are not included in the implicit price indices for the business sector and GDP as these aim to measure prices for domestic output. Export prices are included, however, and these are directly affected by a change in the krona's exchange rate. Export prices are measured in Swedish kronor and as the price of exports is often set on an international market, a depreciation of the krona gives scope for higher prices measured in kronor.

**Figure 3:16. Producer prices for consumer goods**

Annual percentage change



- Domestic market prices
- Import prices
- Price index for domestic supply

Note. Broken lines refer to average rate of increase since the year 2000.

Sources: Statistics Sweden and the Riksbank

## ARTICLE – Resource utilisation on the labour market is roughly normal, but the assessment is uncertain

The Swedish economy is growing rapidly and unemployment is falling. Lower unemployment indicates that resource utilisation on the labour market has risen. However, the composition of the labour force changes over time, which may mean that the level of unemployment compatible with normal resource utilisation may also change. Consequently, it is also important to examine other indicators of resource utilisation. The Riksbank's overall assessment is that resource utilisation on the labour market has risen and is presently more or less normal.

### The spare capacity in the labour market has decreased

The amount of spare capacity in the economy will affect the assessment of GDP growth in the coming periods as well as the development of wages and prices in the slightly longer term. The assessment of resource utilisation in the economy is therefore important for deciding the monetary policy stance.

Supported by monetary policy, the high growth in the Swedish economy has contributed to unemployment falling since the end of 2014. In February, unemployment was 7.1 per cent (see Figure 3:17). The employment rate has risen continually since 2010 and amounted to 67 per cent in February, which is almost as high as before the financial crisis (see Figure 3:9).<sup>21</sup> Falling unemployment and a rising employment rate indicate that resource utilisation on the labour market has risen. However, using unemployment as a measure of resource utilisation is complicated by the fact that the composition of the labour force changes over time and that different groups become established on the labour market with varying ease. The unemployment level deemed compatible with normal resource utilisation can thus vary over time.

### Indicators support this view

Other indicators also suggest rising resource utilisation on the labour market. For instance, the number of companies in the Economic Tendency Survey reporting a labour shortage has risen and was above the historical average at the end of 2015 (see Figure 3:17). The rise is on a broad front, but the proportion is particularly high in the construction industry (see Figure 3:11). According to Arbetsförmedlingen (the Swedish public employment service), there are also significant recruitment problems in

the public sector.<sup>22</sup> One further indication that resource utilisation on the labour market has risen is that the number of persons of working age who wish to work in relation to the number of vacant jobs has decreased (see Figure 3:18). However, this development is due both to the number of job-seekers being fewer and to there being more vacant jobs.

**Figure 3:17. Unemployment and labour shortage**

Per cent of labour force 15–74 years and net figures, respectively



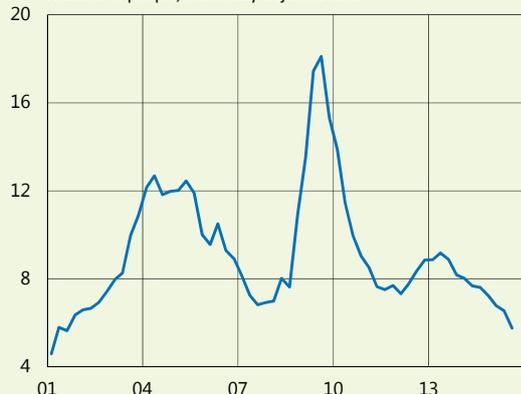
Note. The broken line is the average of labour shortage from 1996 up to and including the latest outcome.

Sources: The National Institute of Economic Research and Statistics Sweden

<sup>21</sup> Demographic developments over the last 10 years have entailed an increased proportion of older people and immigrants, who have a lower average employment rate, in the Swedish population. The Riksbank deems the simultaneous trend increase in the labour force participation rate and the employment rate to largely be an effect of the reforms made to the labour market.

<sup>22</sup> See "Labour market prospects, autumn 2015", Arbetsförmedlingen, 2015.

**Figure 3:18. Job-seekers per job vacancy**  
Number of people, seasonally-adjusted data



Note. The figure shows the number of job-seekers and the number of latent job-seekers per job vacancy according to Statistics Sweden.

Sources: Statistics Sweden and the Riksbank

At the same time, there are signs that matching between job-seekers and vacant jobs has deteriorated. It normally takes longer for companies to recruit staff when unemployment is low, as they have fewer job-seekers to choose from. At present, however, the average recruitment time in the business sector is much longer than has previously been associated with the current level of unemployment (see Figure 3:19). However, recruitment times are also affected by the type of people currently unemployed and this has changed over the last decade.

**Figure 3:19. Average recruitment time in the business sector and unemployment**  
Months and per cent of labour force 15–74 years, respectively



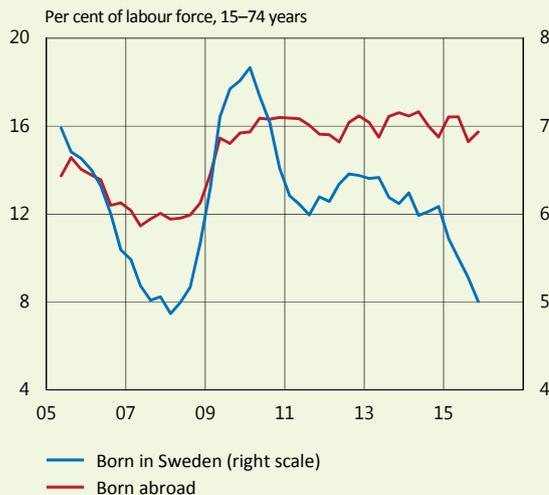
Sources: Statistics Sweden and the Riksbank

**Many unemployed people were born abroad or are long-term unemployed**

Over the last year, the main decrease in unemployment has been among those born in this country (see Figure 3:20). Among those born abroad, unemployment has been around 16 per cent since 2010. Unemployment is significantly higher in certain groups, in particular among

those born outside Europe and without an upper secondary education. One important explanation for why unemployment among those born abroad has not fallen is that there has been a large inflow of people born abroad into the labour force and, for many such people, it takes time to find work.<sup>23</sup> The labour market for those born abroad is also more sensitive to economic fluctuations.<sup>24</sup> The protracted economic downturn has thus probably made their entry onto the labour market more difficult.

**Figure 3:20. Unemployment among those born in Sweden and those born abroad**  
Per cent of labour force, 15–74 years



Source: Statistics Sweden

Chances of moving from unemployment to employment fall as the period of unemployment increases, among other reasons due to the tendency among companies to reject job applicants with long periods of unemployment.<sup>25</sup> The proportion of long-term unemployed has recently decreased, but amounted to just over 30 per cent at the start of the year. The average time in unemployment has also risen since the financial crisis to on average around 34 weeks (see Figure 3:21).<sup>26</sup>

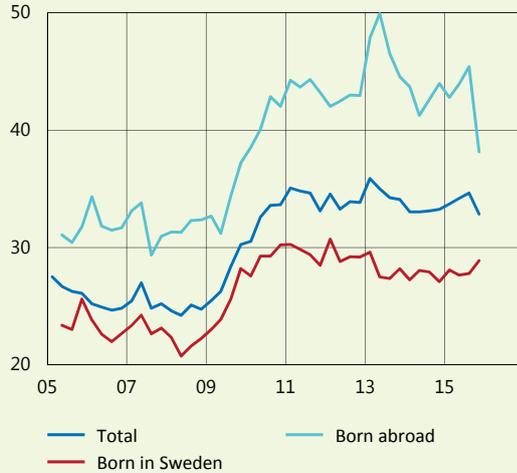
<sup>23</sup> Between 2006 and 2015, the number of people born abroad increased in the labour force by about 350,000 people. According to the labour force surveys (AKU), the average job-finding rate (going from unemployed to employed) was 28 per cent per quarter last year. For those born abroad, it was 18 per cent per quarter. According to Arbetsförmedlingen's statistics, only 2.4 per cent of those born outside Europe go from unemployment to unsubsidised work each month.

<sup>24</sup> See D-O Rooth, and O. Åslund, "Spelar när och var någon roll? Arbetsmarknadsläget betydelse för invandrarers inkomster" [Does it matter when and where? The significance of the labour market situation for immigrants' incomes], Report 2003:5, IFAU (Institute for Evaluation of Labour Market and Education Policy).

<sup>25</sup> See S Eriksson and D-O Rooth, "Do employers use unemployment as a sorting criterion when hiring? – Evidence from a field experiment", *The American Economic Review*, 104(3), 2014. The time of unemployment can also affect the job-seeker's search intensity, see for instance A Krueger. And A Mueller, "Job Search, Emotional Well-Being and Job Finding in a Period of Mass Unemployment: Evidence from High-Frequency Longitudinal Data", *Brookings Papers on Economic Activity*, 42 (1), 2011.

<sup>26</sup> The average period of unemployment in 2015 was around 43 (28) weeks among those born abroad (in Sweden).

**Figure 3:21. Average period unemployed**  
Weeks



Source: Statistics Sweden

### Resource utilisation is judged to be roughly normal

After an extended economic downturn, labour market statistics and indicators overall are now indicating that resource utilisation on the labour market is roughly normal. The improved economic situation is also expected to facilitate to some extent establishment on the labour market for those born abroad. However, the assessment of the resource utilisation and especially the labour market situation of those born abroad for the coming period, is uncertain. Rising resource utilisation normally means a higher rate of increase in wages and prices, after a certain delay, which is also in the Riksbank's forecast.

## CHAPTER 4 – The economic outlook and inflation prospects

The recovery in the global economy is continuing, but there is considerable uncertainty, particularly with regard to developments in Europe. The expansionary monetary policy will contribute to Swedish GDP growth remaining high in the coming years, to employment continuing to rise and to resource utilisation being higher than normal. Unemployment will fall until 2017, after which it will rise slightly as the composition of the labour force changes. Inflation will rise and stabilise around 2 per cent in 2017.

### International developments

#### Weak recovery in the global economy

Global GDP growth was at a low level at the end of 2015, weighted down by a slowdown in the developed economies and weak developments in some emerging economies.

However, over the coming years a continued recovery is expected in the global economy, with a GDP growth just above its historical average. The recovery is supported by expansionary economic policy and a continuing low oil price (see Figure 4:1). However, global growth is held back by the developed economies having a weak underlying productivity growth and a demographic development that gives a low growth in the labour force.

There is currently considerable uncertainty over the development of the global economy for a number of reasons. One is the ongoing rebalancing in China, which has had tangible effects on growth in the country's GDP and imports, contributing to a clear weakening of growth in world trade. When the authorities at the same time try to counteract a slowdown in growth to attain high targets, the risky build-up of debt continues.

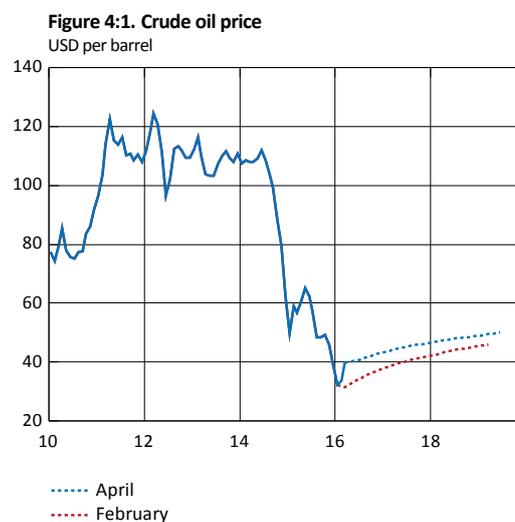
The European cooperation is currently facing difficult challenges. The attempts to manage the large numbers of people fleeing to Europe have led to restrictions to free movement of people and raised questions regarding the ability for cooperation within the EU. The approaching British referendum on exit from the EU also entails a large element of uncertainty regarding future EU cooperation. At the same time, the legacy of the European debt crisis lives on the form of high indebtedness, problems in parts of the banking sector and recurring concerns over the Greek support program.

#### Recovery in Europe hampered by uncertainty

With regard to Europe, there are currently a number of factors that may burden future developments. Confidence among the household and corporate sectors in the euro area weakened at the beginning of the year. However, the cautious recovery is expected to continue with the support of the low energy prices, an expansionary monetary policy and the relatively weak euro. Moreover, fiscal policy will become

Table 4:1.

The forecast in brief
The global economy is continuing to recover but there is still considerable uncertainty.
International inflation is rising in the wake of increasing resource utilization.
The Swedish economy strengthens and resource utilisation will be higher than normal.
The demand for labour continues to rise. The employment rate is increasing and unemployment will fall up until 2017.
Inflation will be temporarily subdued during 2016 but will then rise thanks to higher international inflation and higher resource utilisation in the Swedish economy.



Note. Brent oil, futures are calculated as a 15-day average. Outcomes represent monthly averages of spot prices.

Sources: Macrobond and the Riksbank

somewhat more expansionary, particularly as public expenditure increases due to the large number of asylum-seekers.

Consumption will remain the most important driving force for growth in that employment continues to rise and low inflation gives households good real incomes.

Investment in the euro area remains at a low level, but low interest rates and rising capacity utilisation mean that it will gradually pick up. So far, it is mostly investment in machinery that has risen, but a gradual recovery is expected in investment in construction after several years of decline. In this context the ECB's new targeted long-term loans to the banks in the euro area are expected to provide a positive contribution to growth.

The British economy is expected to grow at a gradually slower pace over the coming years as the spare capacity is put to use. Growth will be upheld by lower energy prices, a continued high services output and a strong housing market. However, growth will be slowed down by increasingly tight fiscal policy and by the increased uncertainty caused by the referendum in June of whether or not the UK will remain in the EU.

#### Weak growth in neighbouring Nordic countries

Our neighbouring Nordic countries now have weak GDP growth (see Figure 4:2). This is partly due to unfavourable international developments.

In Finland, GDP grew slightly in 2015, after falling for several years. The Finnish economy has for some time been disadvantaged by structural problems in key sectors such as telecommunications and forestry. Exports are also held back by the weak developments in Russia, while the ongoing consolidation of public finances slows down domestic demand. Moreover, developments are held back by an unfavourable development in the population, competition problems and by low movement on the labour market.

In Denmark, GDP growth slowed down during the second half of 2015. Household consumption in Denmark is still held back by the high debt levels attained during a previous overheating of the housing market. As for the other Nordic countries, exports are at the same time held back by weak growth in the euro area.

In Norway, efforts have been under way for some time to reduce dependence on the oil sector. The large fall in oil prices since summer 2014 has nevertheless had a clearly negative effect on the Norwegian economy, even in the parts that exclude oil exports. Growth in the Norwegian mainland economy halved between 2014 and 2015 and looks to slow down somewhat further this year. After that, a gradual strengthening of GDP growth is expected, supported by the severe depreciation in the Norwegian krona over the past year, by expansionary monetary policy and by the use of resources from the oil funds to finance public expenditure.

#### Brexit – what does it mean?

On 23 June, a referendum will be held in the United Kingdom on whether the country is to remain or leave the European Union. Should the UK decide to leave, Article 50 of the Lisbon Treaty states that it can happen in two years' time at the earliest. During this two-year period, the other EU Member States would negotiate a new relationship with the UK.

For a time, there would be considerable uncertainty. If the UK Government wishes the country's companies to continue to have access to the internal market, the country would have to accept many of the EU's current rules and regulations, as is the case with Norway and Switzerland. This would, for example, entail the UK continuing to contribute to the EU budget and allowing the free movement of people.

There is also uncertainty as regards the UK's economic links with non-EU countries. If the UK leaves the EU, new trade agreements would have to be negotiated with the large number of countries with which the EU currently has free-trade agreements – a process that would probably take several years to complete. Leaving the EU may also have an impact on London's role as an international financial centre.

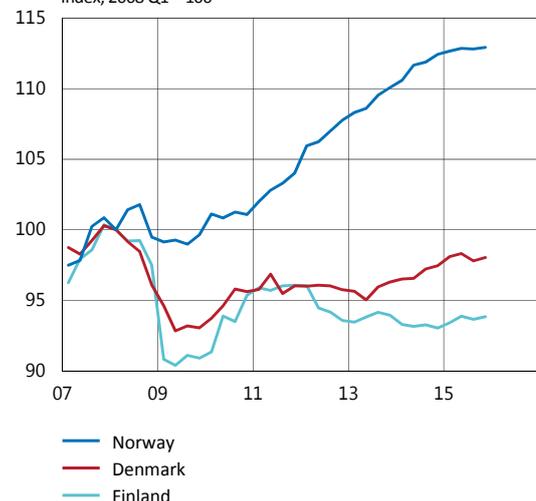
On a political level, a Brexit may change the EU's role in the international political arena. This could affect the cohesion between the other member states, as well as opinion regarding Scottish independence.

A UK decision to leave the EU would therefore create considerable uncertainty on many levels. It may lead to companies choosing to postpone investments and the recruitment of new staff and might also affect where companies choose to locate their operations. The uncertainty might also impact foreign direct investments and portfolio investments in the United Kingdom. Moreover, it is unclear what will happen on the financial markets in connection with a decision to leave the EU, although a clear indication of the exchange rate effects could be the weakening of the pound in recent months.

The UK is an important trading partner for Sweden. Swedish exports to the United Kingdom amounted to 4.5 per cent of total Swedish exports last year. 2014, UK direct investments in Sweden amounted to about 7 per cent of Swedish GDP. The UK is also one of the largest recipients of Swedish direct investments. If growth in the UK were to slow down as a result of a decision to leave the EU, this would very probably have a negative impact on Swedish growth.

Figure 4:2. GDP in the Nordic countries

Index, 2008 Q1 = 100



Sources: National sources

**Increasingly strong US economic activity**

Following a cautious start to the year with continuing weak development in investment, GDP growth in the United States is expected to be good in 2016 and 2017. Favourable developments in the housing and labour markets will then counteract the effects of a strong US dollar and cutbacks in the energy sector. Towards the end of the forecast period, US growth is expected to slow down somewhat (see Figure 4:3). Resource utilisation will then have attained a high level, at the same time as an aging population means that the labour force declines.

**Gradual slowdown in China**

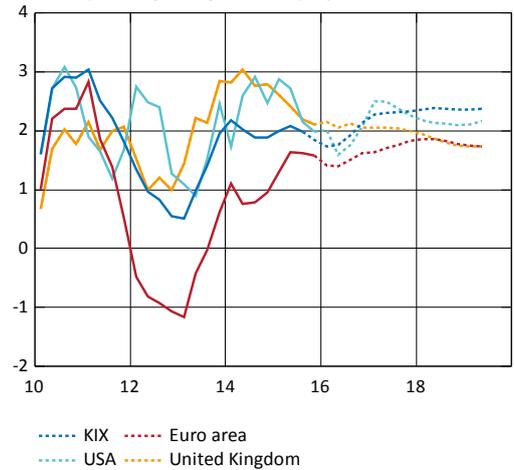
At the most recent national people’s congress in China, the growth target for 2016 was set at between 6.5 and 7 per cent. The target for the coming five years is that the Chinese economy shall grow by at least 6.5 per cent a year on average. The assessment for the coming three years is that China will continue to slow down gradually and to have a somewhat lower growth than the official target indicates. At the same time, it is assumed that the authorities will succeed in counteracting an overly abrupt slowdown. However, there are risks linked to the authorities’ attempts to stimulate the economy in the short term. Following a weak start to the year, for instance, the central bank has further lowered the reserve requirement for the banks and credit growth has continued to increase. This can become unsustainable in the long run, in that corporate sector indebtedness in China is already very high to start with.

**Rising growth and inflation abroad**

All in all, growth in KIX-weighted GDP, which reflects international developments on the basis of the significance of the countries included for the Swedish economy, is expected to rise from around 2 per cent in 2015 and 2016 to just below 2.5 per cent in the following two years (see Figure 4:3). This is a somewhat lower growth than the assessment made in February and is explained by the forecasts for most of the economies important to Sweden’s international trade being revised down. The revisions are partly due to current developments being weaker than was assumed in February and partly due to the new assessment being based on a somewhat higher probability of some negative outcomes. One such outcome include a yes to Brexit at the coming referendum. Another potentially negative outcome that has now gained somewhat greater weight in the forecast is the flaring up of a new debt crisis in the euro area banking sector.

International inflation is low, but expected to begin rising towards the end of 2016 and to rise above 2 per cent in 2017. One important reason is that the effect of earlier downswings in the oil price will fade out. However, underlying inflation, measured in terms of consumer prices excluding energy and food, is also expected to rise gradually. One contributory

**Figure 4:3. Growth in various countries and regions**  
Annual percentage change, seasonally-adjusted data

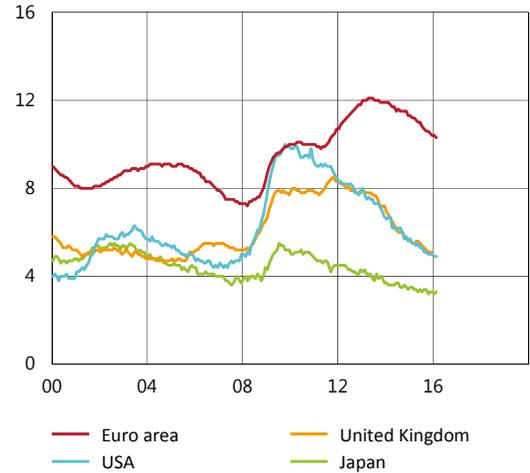


Note. KIX is an aggregate of the countries that are important to Sweden’s international transactions.

Sources: Bureau of Economic Analysis, Eurostat, national sources, Office for National Statistics and the Riksbank

**Figure 4:4. Unemployment abroad**

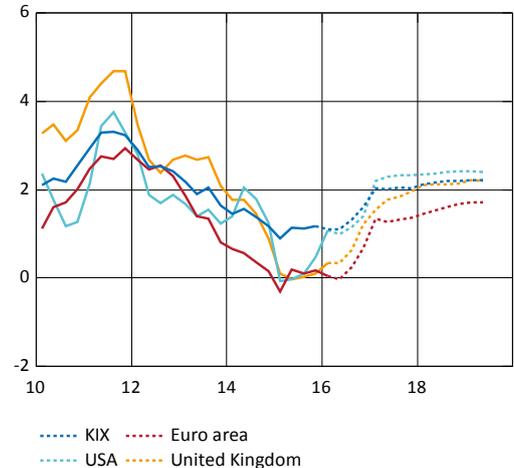
Per cent of labour force



Sources: National sources

**Figure 4:5. Inflation in various countries and regions**

Annual percentage change



Note. KIX is an aggregate of the countries that are important to Sweden’s international transactions. When calculating KIX-weighted inflation, the HICP is used for the euro area and the CPI for other countries. Inflation for the euro area is shown measured using the HICP and for the United States and the United Kingdom measured using the CPI.

Sources: The Bureau of Labor Statistics, Eurostat, national sources, Office for National Statistics and the Riksbank

cause is that unemployment is in some areas at a level that has historically entailed a higher rate of wage increase (see Figure 4:4). In the United States, where many assess that this level has already been reached, they are now seeing rising expectations with regard to wage increases and similar tendencies can be discerned in the United Kingdom. In the euro area, where the average unemployment rate is still very high, wage developments are still weak, but even there a higher rate of wage increase can be expected as unemployment continues to fall.

All in all, inflation abroad is expected to rise from just over 1 per cent in 2015 and 2016 to just over 2 per cent thereafter (see Figure 4:5). This corresponds to a minor downward revision at the end of the forecast period, which is explained by somewhat lower resource utilisation in some countries than was assessed in February.

## Sweden

### Strong Swedish economic activity

Growth in Sweden was high in 2015 thanks to both strong domestic demand and strong growth in exports.

The high growth is expected to persist for some time, partly because several factors indicate continued strength in household consumption. Households benefit from a strong labour market and good development in real wages.<sup>27</sup>

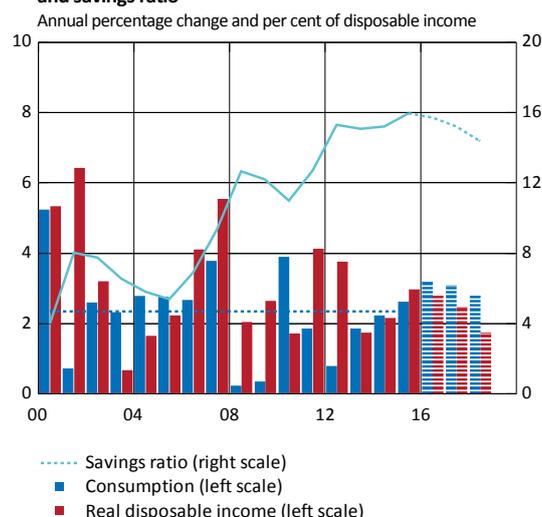
Moreover, the upturns in housing prices and stock markets in recent years have contributed to higher wealth. As household incomes have increased faster than household consumption in recent years, the saving ratio has also risen and is now at an historically high level to begin with.

Disposable incomes are expected to increase at a somewhat slower pace as interest rates rise towards the end of the forecast period, but some decline in household saving will contribute to dampening the slowdown in consumption growth (see Figure 4:6).

The Swedish export market was weak in 2015. Despite this, Swedish exports grew rapidly, partly due to large demand for Swedish investment goods from the euro area (see Figure 4:7). This development is thought to have continued during early 2016, but going forward exports are expected to grow at a somewhat slower rate and more in line with developments on the export markets. During the latter part of the forecast period, export growth will be somewhat lower than export market growth, partly because the krona is expected to strengthen somewhat.

Housing investment has increased very rapidly in recent years, to a level that is high in historical terms, and is now expected to remain at that level in the coming years. It will therefore contribute less to growth. Other business sector

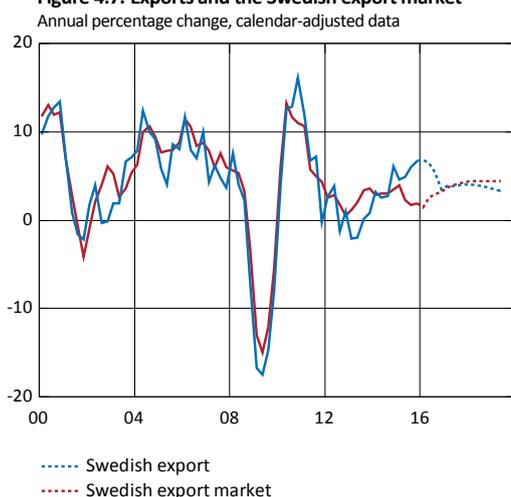
**Figure 4:6. Households' real disposable incomes, consumption and savings ratio**



Note. The savings ratio includes collective insurance schemes. Disposable income has been deflated using the household consumption deflator. The broken line is the average of consumption between 1994 and 2015.

Sources: Statistics Sweden and the Riksbank

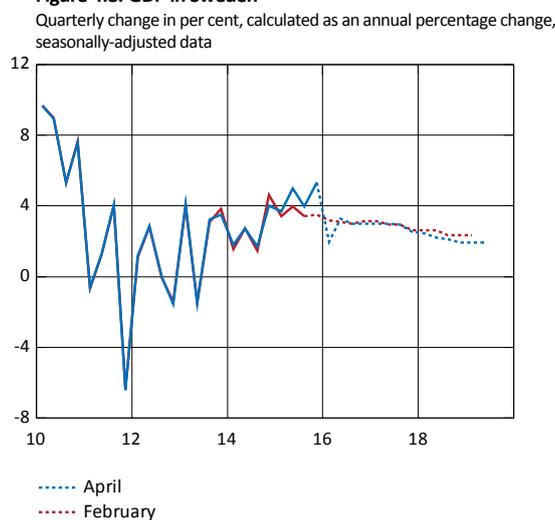
**Figure 4:7. Exports and the Swedish export market**



Note. The Swedish export market index aims to measure import demand in the countries to which Sweden exports. This is calculated by aggregating 32 countries and covers around 85 per cent of the total Swedish export market.

Sources: Statistics Sweden and the Riksbank

**Figure 4:8. GDP in Sweden**



Sources: Statistics Sweden and the Riksbank

<sup>27</sup> The effects of the coming amortisation requirement have already been taken into account in the Riksbank's forecasts.

investments are currently being held back by uncertainty over developments abroad and will slow down this year after increasing at a good pace for the past two years. However, the increasingly high level of resource utilisation means that the corporate sector's need for new investment will increase and investment growth will rise in the coming years.

On average, annual GDP growth is expected to be almost 3 per cent in 2016–2018, which is in line with the forecast from the February Monetary Policy Report (see Figure 4:8). Growth in GDP per capita will not be as high, as the population will at the same time grow quickly (see Figure 4:9).

**Housing prices continuing to rise despite high level of housing construction**

Household sector demand for housing has risen, partly because of the low interest rates in recent years and households' large increases in income. But despite a rapid increase in housing investment in recent years, the supply of housing in several regions is lower than the demand. This has contributed to a rapid increase in housing prices and as home purchases are largely financed by loans, it means that household debt has also risen rapidly.

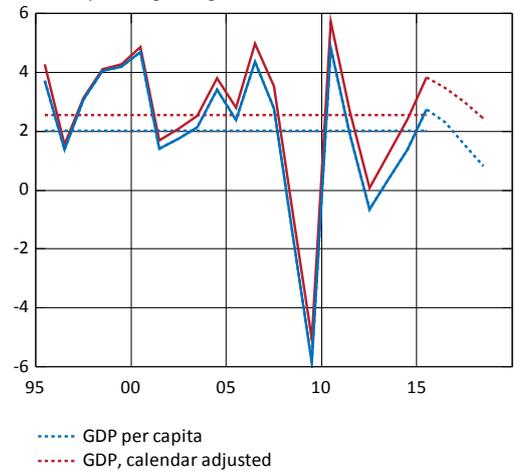
Housing prices are expected to increase in the coming years, too, although the rate of increase will slow down when interest rates begin to rise and disposable incomes increase at a somewhat slower pace (see Figure 4:10). All in all, household indebtedness is expected to increase faster than incomes and as a percentage of disposable income to amount to around 190 per cent in the middle of 2019 (see Figure 1:17).

**Employment rate will peak in 2017**

Demand for labour will continue to increase strongly this year thanks to the good growth in the Swedish economy. The employment rate, that is the number of employed as a percentage of the working age population (aged 15–74), will rise somewhat further and unemployment will fall (see Figure 4:11).

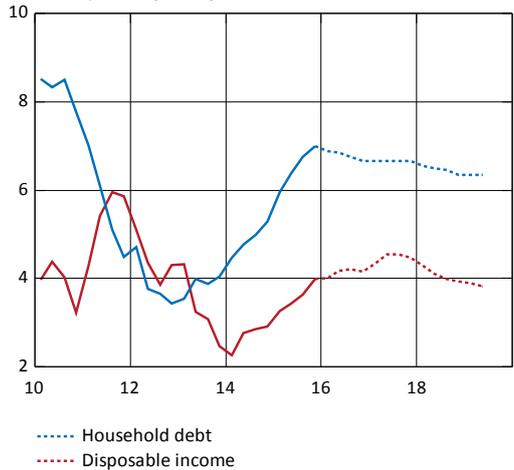
In the coming years the working age population will increase thanks to immigration; the working age population born in Sweden will decline. The employment rate among those born abroad has risen since 2010, but this group still has a lower average employment rate and higher unemployment than those born in Sweden (see Figure 4:12). It takes time for new arrivals to begin establishing themselves on the labour market. During the latter part of the forecast period, the increased immigration will therefore contribute to a more rapid increase in the working age population and the labour force than in employment. In the slightly longer term, the change in the composition of the working age population means that the employment rate will decline and unemployment will once again increase.

**Figure 4:9. GDP and GDP per capita**  
Annual percentage change



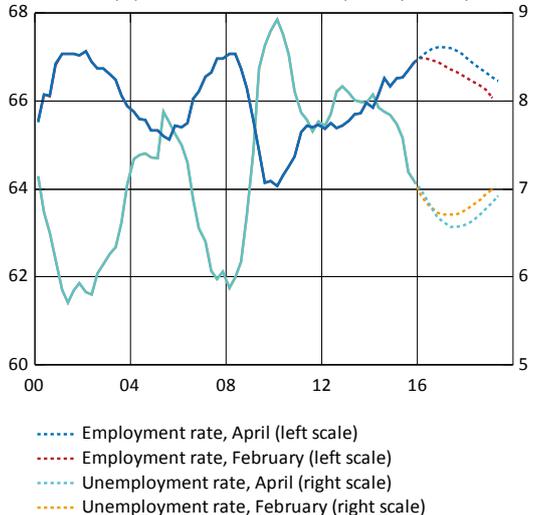
Note. Broken lines refer to averages between 1995 and 2015.  
Sources: Statistics Sweden and the Riksbank

**Figure 4:10. Household debts and disposable incomes**  
Annual percentage change



Sources: Statistics Sweden and the Riksbank

**Figure 4:11. Employment and unemployment rate**  
Per cent of population and labour force, respectively. 15–74 years.



Sources: Statistics Sweden and the Riksbank

Uncertainty in the latter stages of the forecast period is considerable, not least as a result of refugee immigration. This is expected to remain high in the coming years, seen in an historical perspective. However, Statistics Sweden has revised down the forecast for the population. The Riksbank has taken this into account in the current forecast, which means that the assessment of the supply of labour and unemployment in the slightly longer term has been revised down in relation to the February Monetary Policy Report.

The Riksbank assesses that resource utilisation on the labour market is presently more or less normal (see the article "Resource utilisation in the labour market is roughly normal, but the assessment is uncertain"). Resource utilisation in the economy will rise further in the coming years. Both the GDP gap and the hours worked gap will thus be positive in the coming period (see Figure 4:13). The higher resource utilisation in coming years is expected to contribute to people who on average are further outside the labour market, such as long-term unemployed and those born abroad, being able to obtain jobs more easily.

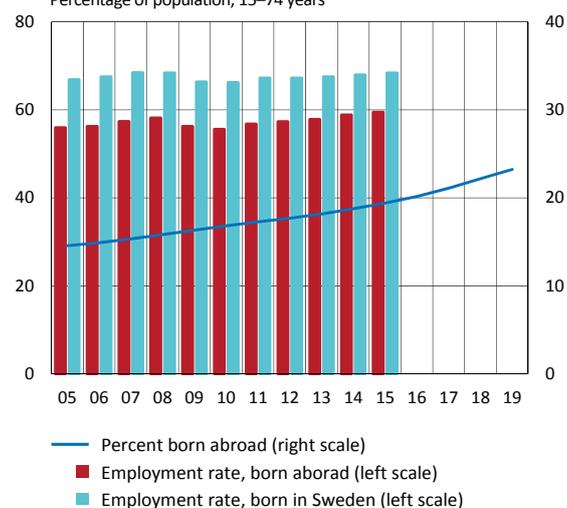
#### The public sector financial balance will strengthen

The public sector financial balance strengthened considerably in 2015 and the good development in economic activity means that it will strengthen further during the forecast period. However, public expenditure is expected to increase and to contribute to growth in the coming years. One reason for this is the unusually high expenditure on Swedish Migration Agency operations. More people than ever before sought asylum in Sweden last year and the Swedish Migration Agency has more than 180,000 people registered with its refugee reception centres. Over the coming years, this will lead to higher costs than normal for accommodation, education and establishment for refugees. In addition, the Government has announced that it will propose in its Budget Bill that the municipal sector receives SEK 10 billion extra and that this refers to a permanent increase in the government subsidy.

#### Gradually higher wage increases in the coming years

The Riksbank's wage forecasts refer to total wage increases, including wages above the agreed increases. However, because both the level of the agreements and the way they are constructed are significant in terms of how wages develop, the Riksbank follows the collective bargaining discussions carefully. On 31 March a large number of collective wage agreements expired, including those applying to the manufacturing industry, the retail trade and the trade unions within the 6F collaboration.<sup>28</sup> The social partners in the manufacturing industry have now signed a one-year

**Figure 4:12. Employment rate and share of population**  
Percentage of population, 15–74 years



Source: Statistics Sweden

#### Very uncertain migration and population forecasts

As a result of substantial variations in refugee flows, major revisions have been made to migration and population forecasts in recent years. The Swedish Migration Agency's forecasts for the number of asylum-seekers and family member immigrants coming to Sweden form an important basis for Statistics Sweden's population forecasts. In November 2015, Statistics Sweden updated the population forecast from May, revising it upwards considerably. Statistics Sweden has recently published a new forecast, which is much lower, as a result of the severe slowdown in the number of asylum-seekers at the start of the year.

In 2015, 163,000 people sought asylum in Sweden, more than double the number in 2014. The short-term positive effects on demand in the Swedish economy from this sharp increase are still in the Riksbank's forecasts. The Swedish Migration Agency's assessment of costs and expenditure for 2016 has not changed since the end of last year.

The fact that major revisions are being made to the population forecast means that the assessments of labour supply and the long-term sustainable level of employment are associated with considerable uncertainty. The international refugee crisis shows no sign of abating and political decisions will continue to have a major impact on developments. Since the Swedish Migration Agency's forecast was published, a new agreement between the EU and Turkey has been concluded regarding Schengen's external borders. The agreement aims to curb refugee flows over the Mediterranean Sea.

<sup>28</sup> 6F is a collaboration between five trade unions within the Swedish Trade Union Confederation: Swedish Building Workers' Union, Swedish Electricians' Union, Swedish Building Maintenance Workers' Union, Swedish Painters' Union and Swedish Union for Service and Communications Employees.

agreement entailing a 2.0 per cent wage increase and 0.2 per cent in part-pension allocation, which is somewhat lower than the historical average. Agreements have been signed in several areas that are in line with this one, but in certain areas there are considerable disagreements, primarily on other issues than wage levels, resulting in a number of disputes, strike warnings and even strikes.

In addition to the agreed wage, the total wage increases are also affected by other factors. According to the National Institute of Economic Research's Economic Tendency Survey, the percentage of companies stating a shortage of labour has risen within several branches of the business sector and there are also increasing staff shortages in some fields of competence in the public sector. The fact that employers are experiencing difficulty finding the labour they need could push up wages. The Riksbank assesses that resource utilisation is now close to normal and that employment will increase further going forward. The strong labour market situation is assessed to lead to a rise in the rate of wage increase in the coming years. During the forecast period, wages are expected to increase by an average of 3.4 per cent a year. This means that wages will adjust to economic activity in the normal way.

In June this year the second phase of social security contribution increases for people under the age of 26 will be implemented. Moreover, a special wage tax was introduced in January for people over the age of 65. This means that labour costs, that is, the total of wages and social security contributions, will increase more than hourly wages in 2016. After that, labour costs are then expected to develop in line with hourly wages

At the same time, productivity is expected to increase in the coming years, but labour costs will rise faster, which will lead to unit labour costs also increasing (see Figure 4:14). During the forecast period, the average increase in unit labour costs is expected to be close to the historical average of 2 per cent a year.

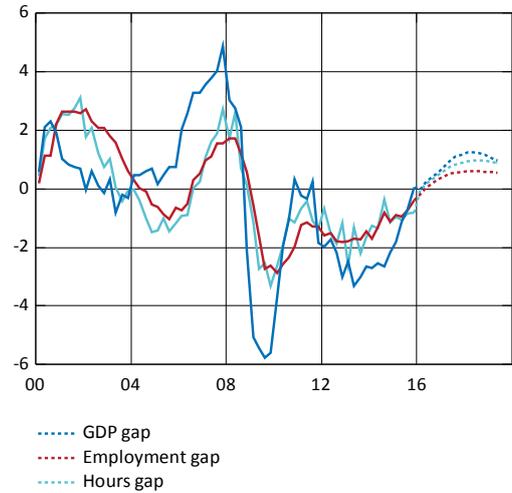
**The development of the krona is important for inflation**

The weakening of the krona since spring 2013 has contributed to higher prices for imported goods and services and is one important explanation for the upturn in inflation over the past two years. In the period ahead, the krona is expected to slowly appreciate (see Figure 4:15). Compared with the forecast in the February Monetary Policy Report, the krona is expected to be somewhat stronger in the first part of the forecast period.

**Inflation expected to stabilise around 2 per cent in 2017**

Inflation has shown a rising trend since 2014. This is clearly visible in the different measures of underlying inflation (see the article "A broader picture of price development in Sweden"). At the same time, the upturn in inflation is fitful.

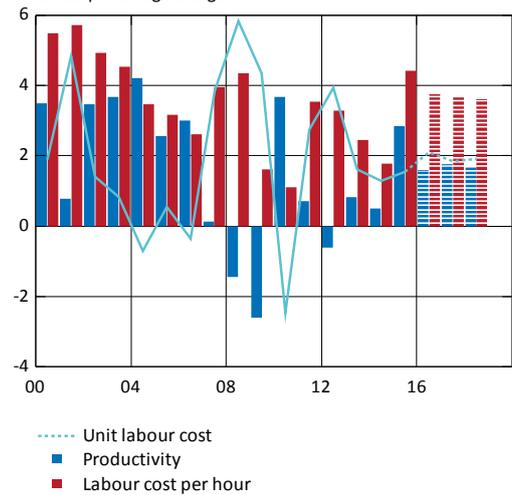
**Figure 4:13. GDP gap, employment gap and hours gap**  
Per cent



Note. The gaps refer to the deviation in GDP, the number of hours worked and the number of those employed from the Riksbank's assessed trends.

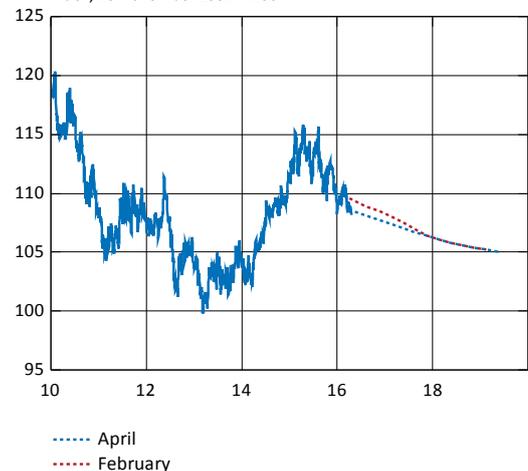
Sources: Statistics Sweden and the Riksbank

**Figure 4:14. Cost pressures in the economy as a whole**  
Annual percentage change



Sources: Statistics Sweden and the Riksbank

**Figure 4:15. KIX-weighted nominal exchange rate**  
Index, 18 November 1992 = 100



Note. Outcomes are daily rates and forecasts refer to quarterly averages. KIX is an aggregate of the countries that are important to Sweden's international transactions.

Source: The Riksbank

CPI inflation is still low, as household interest expenditure has fallen heavily.

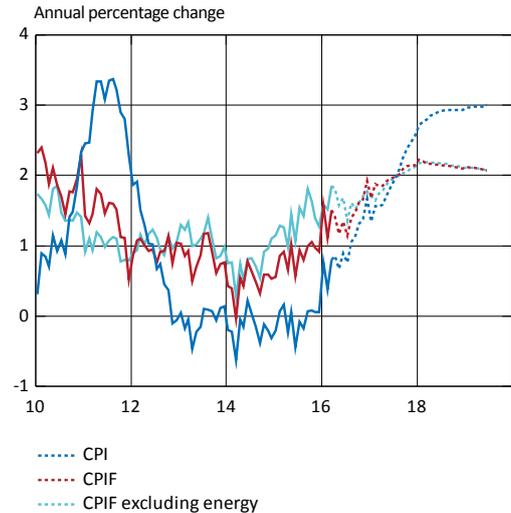
Two of the factors behind the rising inflation have been the earlier weakening of the exchange rate and rising resource utilisation in the Swedish economy. Both the exchange rate and resource utilisation are judged to continue having a major impact on prices going forward, but in two different ways. On the one hand, the earlier contribution to inflation from the exchange rate is expected to wane. This is because the severe krona depreciation between 2014 and 2015 has gradually changed into an appreciation. On the other hand, resource utilisation is expected to contribute to inflation to an increasing degree. The improved economic situation will lead, with some time lag, to companies finding it easier to raise their prices.

The unusually low rent increases will slow down inflation in 2016. The earlier fall in energy prices also contributes to this. However, fuel prices are currently rising and at the end of the year they are expected to begin to contribute positively to inflation once again.

A gradually stronger economic activity abroad also means that international prices will rise at a faster pace once again. At the same time, resource utilisation in the Swedish economy is rising.

CPIF inflation is expected to increase from just under 1.5 per cent for most of 2016 to around 2 per cent in 2017 (see Figure 4:16). CPI inflation is expected to attain 2 per cent somewhat later in 2017. From the second half of 2017, the CPI is expected to increase faster than the CPIF. The reason for this is that interest expenditure, which has long contributed to lower inflation, will change over to providing a positive contribution to the CPI. Inflation measured using the EU-harmonised measure HICP largely agrees with the development of CPIF inflation (see Figure 4:17). In total the forecast revisions are small, compared to the February Monetary Policy Report

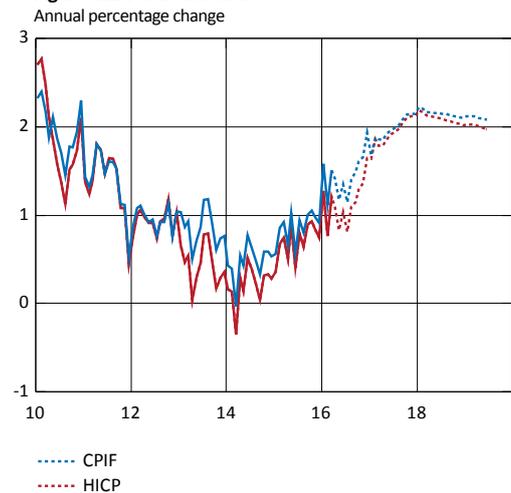
**Figure 4:16. CPI, CPIF and CPIF excluding energy**



Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

**Figure 4:17. CPIF and HICP**



Note. CPIF is CPI with fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

## Tables

The forecast in the previous Monetary Policy Report is shown in brackets unless otherwise stated.

**Table 1. Repo rate forecast**

Per cent, quarterly averages

	Q4 2015	Q1 2016	Q2 2016	Q2 2017	Q2 2018	Q2 2019
Repo rate	-0.4	-0.4 (-0.4)	-0.5 (-0.5)	-0.5 (-0.5)	0.1 (0.1)	0.7

Source: The Riksbank

**Table 2. Inflation**

Annual percentage change, annual average

	2014	2015	2016	2017	2018
CPI	-0.2	0.0	1.0 (0.7)	1.9 (2.1)	2.9 (2.9)
CPIF	0.5	0.9	1.4 (1.3)	2.0 (2.1)	2.2 (2.1)
CPIF excl. energy	0.7	1.4	1.6 (1.6)	1.9 (1.9)	2.2 (2.0)
HICP	0.2	0.7	1.1 (1.1)	1.9 (2.1)	2.1 (2.1)

Note. The CPIF is the CPI with a fixed mortgage rate. HICP is an EU harmonised index of consumer prices.

Sources: Statistics Sweden and the Riksbank

**Table 3. Summary of financial forecasts**

Per cent, unless otherwise stated, annual average

	2014	2015	2016	2017	2018
Repo rate	0.5	-0.3	-0.5 (-0.5)	-0.4 (-0.4)	0.2 (0.2)
10-year rate	1.8	0.8	1.0 (1.0)	2.0 (2.0)	2.9 (2.9)
Exchange rate, KIX, 18 November 1992 = 100	106.7	112.6	108.5 (109.1)	106.9 (107.3)	105.7 (105.7)
General government net lending*	-1.6	-0.3 (-0.9)	-0.3 (-0.8)	-0.3 (-0.7)	-0.2 (-0.6)

\* Per cent of GDP. The outcome for general government net lending in 2014 was revised in connection with Statistic Sweden's publication of the EDP-statistics (figures on public saving and gross debt according to the EU's convergence criteria which are reported to the European commission twice a year). In order for the statistics to be consistent with other forecast variables, the outcome relates to what was published in connection with the national accounts.

Sources: Statistics Sweden and the Riksbank

**Table 4. International conditions**

Annual percentage change, unless otherwise stated

GDP	PPP-weights	KIX-weights	2014	2015	2016	2017	2018
Euro area	0.14	0.47	0.9	1.5 (1.5)	1.5 (1.6)	1.7 (1.9)	1.8 (2.0)
USA	0.16	0.08	2.4	2.4	1.9 (2.4)	2.4 (2.6)	2.1 (2.1)
Japan	0.05	0.02	-0.1	0.5 (0.7)	0.4 (1.1)	0.8 (0.4)	0.4 (0.7)
China	0.15	0.08	7.4	6.8	6.4 (6.4)	6.1 (6.1)	6.0 (6.1)
KIX-weighted	0.75	1.00	2.0	2.0 (2.0)	1.9 (2.1)	2.3 (2.4)	2.4 (2.5)
World (PPP-weighted)	1.00	—	3.4	3.1 (3.1)	3.1 (3.4)	3.6 (3.8)	3.7 (3.8)

Note. Calendar-adjusted growth rates. The PPP-weights refer to the global purchasing-power adjusted GDP-weights, according to the IMF. The National Institute of Economic Research updates the weights for the KIX krona index at the start of every year with a time lag of three years. The figures in the table are based on the new KIX weights for 2012 that are used for 2015, and on an assumption that the weights will develop according to the trend of the past five years in the coming forecast years.

CPI	2014	2015	2016	2017	2018
Euro area (HICP)	0.4	0.0	0.2 (0.1)	1.3 (1.4)	1.6 (1.7)
USA	1.6	0.1	1.2 (1.1)	2.3 (2.4)	2.4 (2.5)
Japan	2.7	0.8	0.6 (1.1)	1.9 (2.1)	2.1 (2.1)
KIX-weighted	1.4	1.1	1.3 (1.2)	2.0 (2.1)	2.2 (2.2)

	2014	2015	2016	2017	2018
Policy rates in the rest of the world, per cent	0.2	0.1	-0.1 (-0.1)	-0.1 (0.0)	0.1 (0.3)
Crude oil price, USD/barrel Brent	99.6	53.5	39.9 (34.3)	45.1 (40.3)	47.9 (44.0)
Swedish export market	3.1	2.4 (2.2)	2.6 (3.7)	4.0 (4.9)	4.4 (4.9)

Note. Policy rates in the rest of the world refer to a weighted average of USA, the euro area, Norway and the United Kingdom.

Sources: Eurostat, IMF, Intercontinental Exchange, national sources, OECD and the Riksbank

**Table 5. GDP by expenditure**

Annual percentage change, unless otherwise stated

	2014	2015	2016	2017	2018
Private consumption	2.2	2.6 (2.4)	3.2 (2.9)	3.1 (3.0)	2.8 (2.8)
Public consumption	1.3	2.5 (2.2)	3.6 (4.0)	2.7 (2.5)	1.9 (1.8)
Gross fixed capital formation	7.5	7.3 (7.3)	3.2 (4.8)	3.6 (4.6)	4.1 (4.8)
Inventory investment*	0.1	0.1 (-0.1)	0.1 (0.1)	0.0 (0.0)	0.0 (0.0)
Exports	3.5	5.9 (4.9)	5.9 (5.6)	3.5 (4.4)	3.7 (4.5)
Imports	6.3	5.4 (4.4)	5.2 (6.3)	4.4 (5.5)	5.0 (5.8)
GDP	2.3	4.1 (3.7)	3.7 (3.5)	2.7 (2.8)	2.3 (2.5)
GDP, calendar-adjusted	2.4	3.8 (3.5)	3.5 (3.3)	3.0 (3.0)	2.4 (2.6)
Final figure for domestic demand*	3.1	3.6 (3.4)	3.2 (3.5)	3.0 (3.1)	2.8 (2.9)
Net exports*	-0.9	0.4 (0.4)	0.5 (-0.1)	-0.2 (-0.3)	-0.4 (-0.4)
Current account (NA), per cent of GDP	4.2	4.9 (5.5)	5.3 (5.3)	4.9 (4.8)	4.3 (4.2)

\*Contribution to GDP growth, percentage points

Note. The figures show actual growth rates that have not been calendar-adjusted, unless otherwise stated. NA is the National Accounts.

Sources: Statistics Sweden and the Riksbank

**Table 6. Production and employment**

Annual percentage change, unless otherwise stated

	2014	2015	2016	2017	2018
Population, aged 15–74	0.7	0.7	0.9 (1.1)	1.1 (1.6)	1.2 (1.8)
Potential hours worked	1.0	0.8 (0.7)	0.7 (0.7)	0.6 (0.9)	0.6 (1.1)
GDP, calendar-adjusted	2.4	3.8 (3.5)	3.5 (3.3)	3.0 (3.0)	2.4 (2.6)
Number of hours worked, calendar-adjusted	1.8	1.0 (1.0)	1.8 (1.7)	1.2 (1.2)	0.8 (1.2)
Employed, aged 15–74	1.4	1.4	1.6 (1.6)	1.1 (1.3)	0.7 (1.3)
Labour force, aged 15–74	1.3	0.8	1.0 (0.9)	0.8 (1.1)	0.8 (1.5)
Unemployment, aged 15–74 *	7.9	7.4	6.8 (6.8)	6.6 (6.7)	6.7 (6.9)

\* Per cent of the labour force

Note. Potential hours refer to the long-term sustainable level for the number of hours worked according to the Riksbank's assessment.

Sources: Statistics Sweden and the Riksbank

**Table 7. Wages and labour costs for the economy as a whole**

Annual percentage change, calendar-adjusted data unless otherwise stated

	2014	2015	2016	2017	2018
Hourly wage, NMO	2.8	2.5 (2.5)	3.1 (3.2)	3.5 (3.5)	3.5 (3.4)
Hourly wage, NA	1.8	3.5 (3.3)	3.2 (3.3)	3.7 (3.7)	3.7 (3.6)
Employers' contribution*	0.0	0.9 (0.5)	0.5 (0.5)	0.0 (0.0)	-0.1 (-0.1)
Hourly labour cost, NA	1.8	4.4 (3.8)	3.7 (3.9)	3.7 (3.7)	3.6 (3.5)
Productivity	0.5	2.8 (2.5)	1.6 (1.6)	1.8 (1.8)	1.7 (1.5)
Unit labour cost	1.3	1.5 (1.3)	2.1 (2.2)	1.9 (1.9)	1.9 (2.0)

\* Contribution to the increase in labour costs, percentage points

Note. NMO is the National Mediation Office's short-term wage statistics and NA is the National Accounts. Labour cost per hour is defined as the sum of actual wages, social-security charges and wage taxes divided by the seasonally adjusted total number of hours worked. Unit labour cost is defined as labour cost divided by seasonally-adjusted value added at constant prices.

Sources: National Mediation Office, Statistics Sweden and the Riksbank



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