

# Monetary Policy Report

July 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 5 July 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

Uncertainty over economic developments in Sweden and abroad has increased. On 23 June, the people of the United Kingdom voted for the country to leave the European Union, and following this there have been strong reactions on the financial markets. The Riksbank's assessment remains that global economic activity will continue to improve, albeit at a slower rate. So far, economic activity in Sweden, supported by the highly expansionary monetary policy, has strengthened rapidly and resource utilisation is close to normal. Although the forecast for GDP growth has been revised down for the coming period, the economic recovery is expected to continue. This creates the conditions for inflation to continue rising. At present, it is difficult to assess the political and economic consequences of the outcome of the British referendum, but the Riksbank assumes so far that the effects on the Swedish economy will be relatively limited. There is a risk of larger negative effects, but these are at present difficult to quantify in a forecast. The Riksbank is following developments closely and its forecasts will be adjusted as more information becomes available.

A highly expansionary monetary policy is needed to provide support to the Swedish economy and rising inflation. The Executive Board has therefore decided to hold the repo rate unchanged at -0.5 per cent. Given the increased uncertainty, the Executive Board now assesses that it will take longer before the repo rate needs to be raised. Slow increases in the repo rate are not expected to begin until the second half of 2017. Purchases of government bonds will continue during the second half of 2016, as decided in April. The expansionary monetary policy underlines the Riksbank's aim to safeguard the role of the inflation target as nominal anchor for price-setting and wage formation. The Executive Board is still highly prepared to make monetary policy even more expansionary if necessary.

### Increased uncertainty over economic developments

There is great uncertainty over both political and economic developments abroad. On 23 June, the British people voted to leave the European Union, which has increased uncertainty for the economic prospects of the United Kingdom and Europe as a whole. The result of the referendum has also affected developments in the financial markets. For example, there have been large movements on the world's stock exchanges, the sterling has weakened substantially and government bond yields have fallen.

The Riksbank's assessment remains that global economic activity will continue to improve, but at a slower rate. Global GDP was weak in 2015 but strengthened somewhat at the start of 2016. Expansion in several emerging market economies will help the global economy to recover in the period ahead. In the years ahead, economic activity in the United States and the euro area will also continue to strengthen, supported by expansionary monetary policy. Unease linked to the results of the UK referendum is burdening growth in the United Kingdom in particular, which is expected to be significantly lower in the years ahead. The

**Table 1:1.**

Important factors for monetary policy
The global recovery is continuing, but uncertainty has increased due to the result of the United Kingdom referendum. Inflation is low in many countries, and monetary policy is very expansionary.
The economic recovery is continuing in Sweden. GDP is expected to grow by almost 3 per cent on average per year in 2016–2018.
Inflation expectations are continuing to rise.
The upturn in inflation is still uneven.
Conclusion: continued expansionary monetary policy so that inflation reaches 2 per cent in 2017. An initial increase in the repo rate is not expected until the second half of 2017.

**Table 1:2.**

Important revisions to the forecast
The forecast for economic prospects abroad has been revised down. Policy rates are expected to be lower.
The competition-weighted exchange rate, KIX, has become weaker than was forecast in April and is expected to be weaker over the coming year.
The forecast for Swedish GDP this year and next year is revised down.
The CPIF forecast is revised down for 2017 and 2018.

consequences of a British exit from the European Union are creating great uncertainty, while already earlier there were questions about the health of the European banking sector and the long-term management of the many refugees coming to Europe. The questions regarding the health of the banking sector have contributed to large falls for bank shares following the UK referendum, further aggravating the problems. Aggregate GDP growth in countries most important for Sweden’s international transactions (KIX) is now expected to rise more slowly than was forecast in April, from about 2 per cent in 2015 to just under 2.5 per cent in 2018.

Inflation abroad is low but will rise during the second half of 2016, mainly as a result of higher energy prices. As economic activity improves in the period ahead, underlying inflationary pressures will gradually increase. In the euro area, however, inflation will continue to be low and will only reach just over 1.5 per cent in 2018, in part due to weak wage development in several European countries.

Monetary policy abroad has been very expansionary for a long time. The fragile economic recovery and low inflation mean that monetary policy will continue to be so in the period ahead. Compared with the forecast in April, monetary policy abroad is now expected to become even more expansionary in the coming years. Expectations of further policy rate increases in the United States had already decreased before the referendum in the United Kingdom, and the Federal Reserve communicated slower policy rate increases in the middle of June. Following the referendum, the market’s expectations of further policy rate increases in the United States have shifted further downwards. In market pricing, there are now also clear expectations of further monetary policy easing, especially from the Bank of England but also from the ECB.

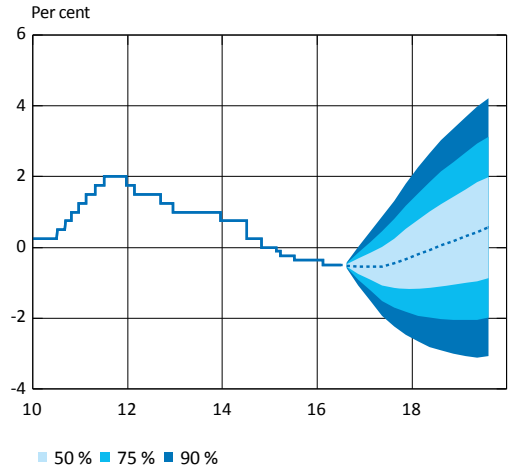
At present, it is difficult to assess the political and economic consequences of the outcome of the British referendum (see the article “The result of the United Kingdom referendum on the EU creates uncertainty”). The Riksbank is following developments closely. The forecasts will be adjusted as more information becomes available.

**Strong development of the Swedish economy so far**

Growth in the Swedish economy has been strong, underpinned by an expansionary monetary policy (see Figure 1:1 and 1:2). GDP grew by a 2.0 per cent annual rate in the first quarter of 2016, compared with the previous quarter, which was approximately as expected. Growth will remain good in the forecast period, partly as a result of the recovery abroad and expansionary monetary policy. However, weaker international growth and the increased uncertainty contribute to the forecast for GDP growth being revised downwards for 2016 and 2017.

Resource utilisation in the Swedish economy is now assessed to be approximately normal. Resource utilisation will

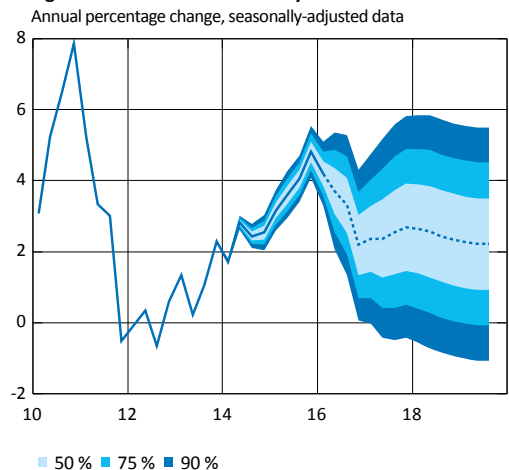
**Figure 1:1. Repo rate with uncertainty bands**



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

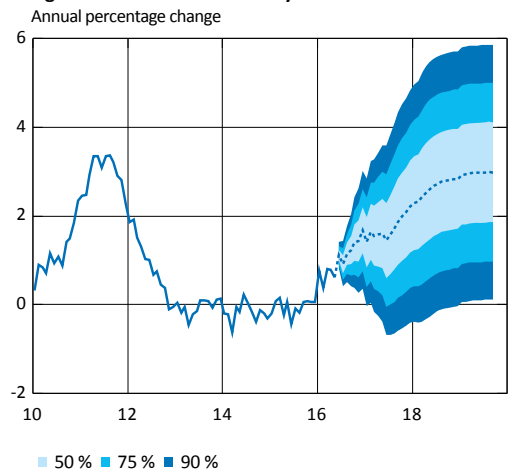
**Figure 1:2. GDP with uncertainty bands**



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



rise further in the coming years. The situation on the labour market continues to improve and unemployment will fall. The entry of newly arrived immigrants into the labour market means, however, that unemployment will increase slightly from 2018 onwards.

### CPIF inflation reaches 2 per cent in 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). The rise is broad and is connected to the previous waking of the krona and the rising resource utilisation in the Swedish economy. But the upturn has been somewhat lower than expected in recent months. The forecast for the CPIF excluding energy is therefore revised down in the short term (see Figure 1:5). The forecasts for CPI and CPIF inflation are adjusted marginally upwards in the near term as energy price increases are expected to be somewhat higher than in the previous forecast (see Figure 1:6 and 1:7).

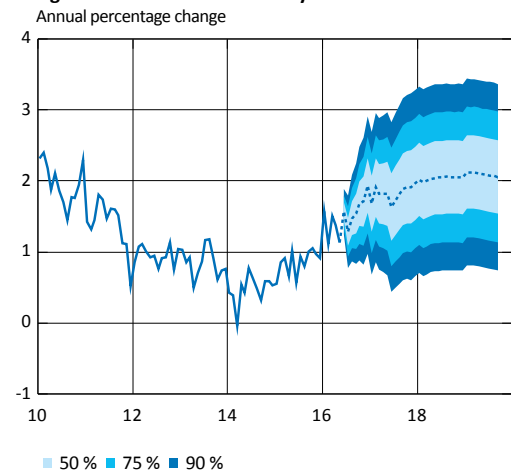
The conditions for continued rising inflation are deemed to be good. The Swedish economy is growing at a good pace and resource utilisation is rising. With a stronger development of the labour market, wages are expected to increase more rapidly and higher demand will make it easier for companies to raise their prices. The krona is expected to gradually strengthen during the forecast period and will thus contribute to dampening inflation. The upturn in inflation will therefore need to be driven more by price increases on goods and services with smaller import content.

Since April, the krona has depreciated more than in the Riksbank's forecast, mainly due to the reactions to the British referendum. The krona is expected to be weaker over the coming year and then to strengthen in line with the forecast made in April (see Figure 1:8). The fact that the krona exchange rate is now weaker contributes to higher inflation, but the fact that demand in the economy and increases in rents and energy prices now are expected to be lower have the opposite effect. All in all, this means that the forecast for CPIF inflation is revised down for 2017 and 2018. Adjusted for energy prices, also the forecast for CPIF inflation has been revised down. It will now take slightly longer before starting to raise the repo rate and thus the household mortgage costs will rise slightly slower. This holds down the increase in the CPI. All inflation measures are nevertheless expected to reach 2 per cent in 2017.

## Current monetary policy

Uncertainty over international developments has characterised monetary policy abroad and in Sweden for a long time. To safeguard the role of the inflation target as nominal anchor for price-setting and wage formation,

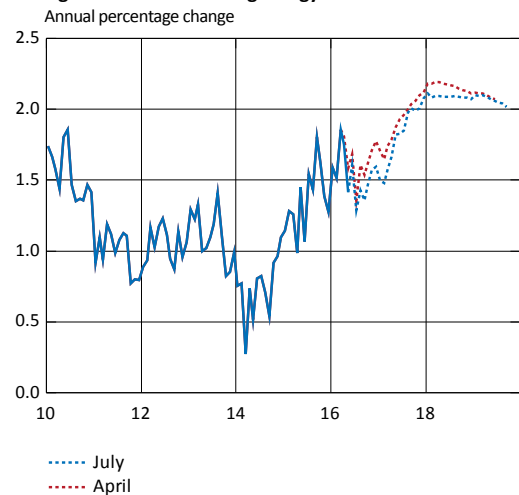
**Figure 1:4. CPIF with uncertainty bands**



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

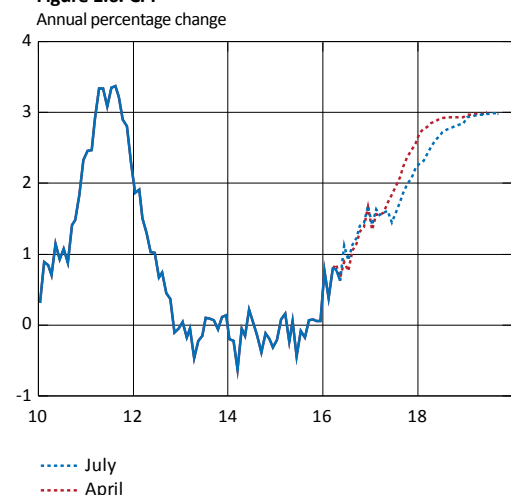
**Figure 1:5. CPIF excluding energy**



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

Sources: Statistics Sweden and the Riksbank

**Figure 1:6. CPI**



Sources: Statistics Sweden and the Riksbank

monetary policy has become gradually more expansionary. The Riksbank has cut the repo rate to -0.5 per cent and carried out extensive purchases of government bonds. At year-end 2016, these purchases will amount to SEK 245 billion (see Figure 1:9).

The aim of this monetary policy is to push up inflation and stabilise it around the target of 2 per cent and help keep inflation expectations in line with the inflation target. 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.

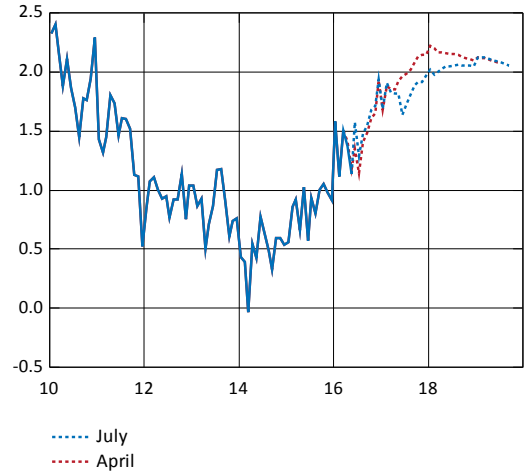
**Continued expansionary monetary policy to provide support in an uncertain world**

Economic activity in Sweden has been strengthening rapidly in recent years, supported by the very expansionary monetary policy. GDP growth has been high, unemployment has fallen and inflation expectations have risen (see Figure 1:10). Trend inflation has risen since the start of 2014 and resource utilisation is now deemed to be close to normal. Since the monetary policy meeting in April, the Swedish economy has grown more or less as expected.

The forecast for GDP developments abroad, particularly in the United Kingdom, but also in the rest of the world, has been revised down as a result of the increased uncertainty arising from the UK referendum result. Monetary policy abroad is also expected to become more expansionary to counteract the negative consequences. Swedish growth has also been revised downwards in the forecast. However, at the same time, the Swedish economy is in relatively good shape and, even if uncertainty is high, employment is expected to continue to increase and GDP growth is expected to continue to be good. Although CPIF inflation is now expected to be somewhat lower next year than was forecast in April, it will rise and reach 2 per cent during 2017.

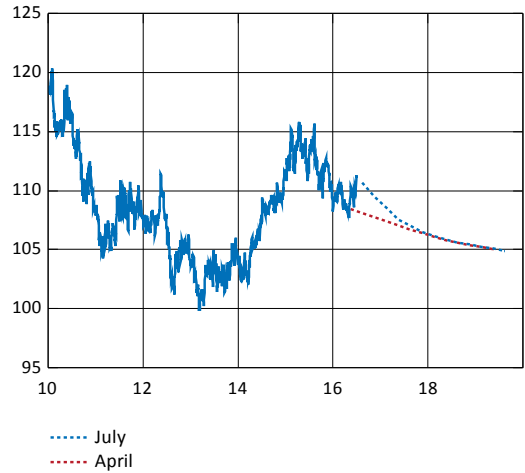
In an uncertain world, a continued highly-expansionary monetary policy is needed to contribute towards rising inflation and a good development of the Swedish economy. The Executive Board has therefore decided to hold the repo rate unchanged at -0.5 per cent. Given the increased uncertainty, the Executive Board now assesses that it will take longer before the repo rate is first raised. Slow increases in the repo rate are not expected to begin until the second half of 2017 (see Figure 1:11). In line with policy rates abroad, the repo rate is now expected to be raised at a somewhat slower rate than previously and will therefore be a little lower at the end of the forecast period. Purchases of government bonds will continue according to the plan adopted in April. This will bring total purchases up to SEK 245 billion at the end of 2016. Until further notice, maturities and coupon payments on the government bond portfolio will be reinvested to maintain the expansiveness of monetary policy.

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



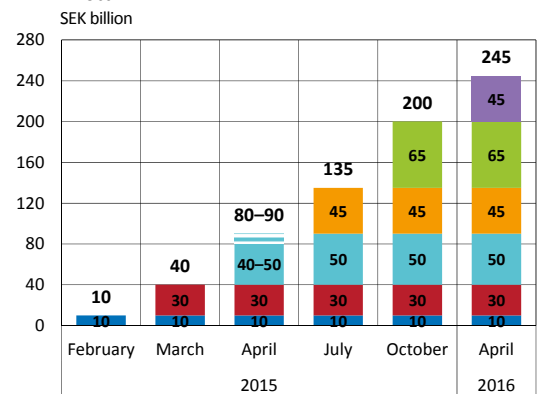
Note. The CPIF is the CPI with a fixed mortgage rate.  
Sources: Statistics Sweden and the Riksbank

**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. 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 nominal government bonds, the nominal amount will not total exactly SEK 245 billion.

Source: The Riksbank

As is the case in many other countries in the world, overall 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 1:12).

**High level of preparedness**

Even if the development of the Swedish economy has been good, uncertainty over international developments has increased and negative surprises may arise along the way. Whether, and how, monetary policy will then be changed depends on how such surprises can be expected to influence the outlook for inflation. The important thing for monetary policy is for the trend in inflation to move closer to the target and for confidence in the inflation target not to be weakened.

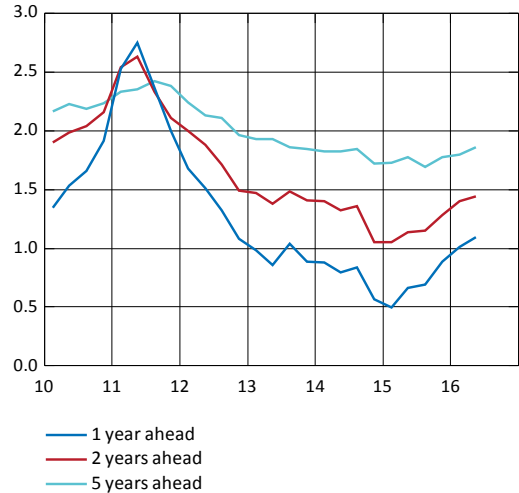
In light of this, the Executive Board continues therefore to be highly prepared to make monetary policy even more expansionary if necessary. This also applies between the ordinary monetary policy meetings. There is still scope to cut the repo rate further, which is reflected in the repo-rate path. If necessary, the Riksbank could also adopt measures in the monetary policy implementation framework to support the monetary policy conducted. In addition, securities purchases can be extended, for example by further purchases of nominal and real government bonds. The Riksbank is still prepared to intervene on the foreign exchange market if the krona appreciates so quickly as to threaten the upturn in inflation. The Executive Board has therefore also taken a decision to extend the mandate that would facilitate a quick intervention on the foreign exchange market.

**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 Figures 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. Neither is it obvious how monetary policy should relate to the uncertainty and risks. There are occasions on which, in our monetary policy deliberations, we may wish to pay particular attention to certain risks, the consequences of which may have a severe impact on economic development. But, on other occasions, we may need to await more information before monetary policy can be adjusted.

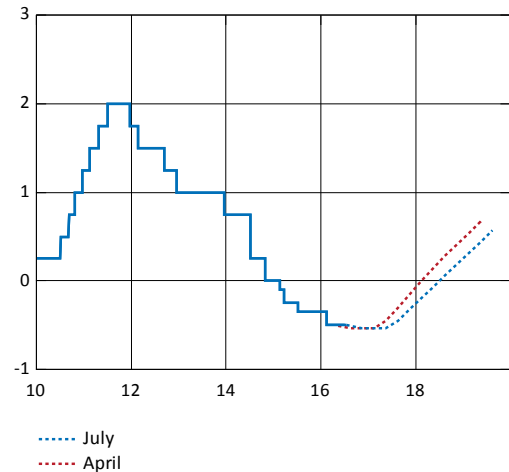
One example of a risk that is currently difficult to quantify is whether the UK referendum will have far-reaching negative effects on international developments.

**Figure 1:10. Inflation expectations among all respondents**  
Per cent, mean value



Source: TNS Sifo Prospera

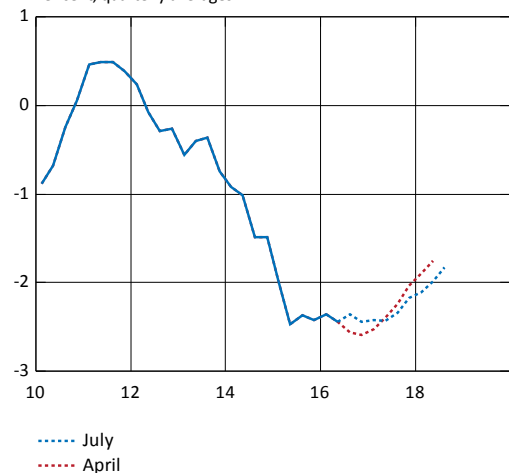
**Figure 1:11. Repo rate**  
Per cent



Note. Outcomes are daily data and the forecasts refer to quarterly averages.

Source: The Riksbank

**Figure 1:12. Real repo rate**  
Per cent, quarterly averages



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 surrounding the inflation forecast**

Developments in the Swedish economy largely depend on developments abroad. In a scenario in which the rest of the world grows significantly slower 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 inflation in Sweden may fall again.

The contagion effects on the global economy of a British exit from the European Union form an important international risk. Following the EU referendum, the market value of several European banks has fallen sharply. Many of these have poor profitability and weak balance sheets. If these become persistent or if they weaken further, it could lead to a credit crunch. This is one way in which a British exit from the European Union could have significantly greater contagion effects on the world economy than have been assumed in the forecast. The situation could also deteriorate if the opinion questioning the EU membership grew in other countries. This could mean the financial turbulence escalates and the situation for the banks worsens. Unease over poorer developments in the Chinese economy is also continuing to add to the uncertainty in the global economy.

Another source of uncertainty is provided by the krona exchange rate. There have been large fluctuations on the global foreign exchange markets in conjunction with the British referendum. Ahead of the referendum, the krona weakened against many currencies, and this depreciation has continued afterwards. It is difficult to assess how persistent this depreciation will be. The Riksbank's forecast is now that the krona will appreciate gradually and in an orderly manner. If the appreciation of the krona was larger or faster than forecast, it would impair conditions for the export industry, in an already uncertain world. This could in turn make it more difficult to attain the inflation target in the way described in the forecast. A large and rapid strengthening of the krona would also make it more difficult to attain the inflation target via more direct effects arising from lower imported price increases (see, for instance, the scenario "Risks inherent in a rapid appreciation of the krona in a low inflation environment" in the February 2016 Monetary Policy Report).

The fact that inflation has been rising since the beginning of 2014 is due, among other factors, to the krona contributing to a rise in prices of goods and services with a higher degree of imported content. When the krona appreciates in the period ahead, the upturn in inflation will need to be driven more by price increases of goods and services with smaller import content. The fact that resource utilisation is now rising and is forecast to be higher than normal should, according to historical correlations, signify a rise in inflation in the period ahead. At the same time, however, it is difficult to judge exactly how quickly resource utilisation affects inflation.

Therefore, it is also uncertain how rapidly inflation will rise in the coming years.

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 good economic growth in Sweden, there are also factors that could lead to inflation rising more quickly than expected. Rapidly rising energy prices or a significantly weaker krona could also lead to such a development. But inflation has been below target for a long time and, if it were temporarily higher than in the Riksbank's forecast, this would not necessarily involve less expansionary monetary policy in the near future.

### Risks with 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. Too low inflation and falling inflation expectations risk becoming self-fulfilling. It is therefore important to avoid overly long periods of low inflation and particularly periods with falling long-run inflation expectations. Without a benchmark for price-setting and wage formation, it will be more difficult for households and companies to make financial decisions. A wide range 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, low 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 primarily due to an underlying downward trend in real interest rates but also partly due to expansionary monetary policies (see Figure 1:13). The expansionary monetary policy in Sweden and other countries is needed to stimulate economic growth and counteract the risks of too low inflation. But a negative repo rate is unusual and has therefore, unsurprisingly, led to discussion. The Riksbank's assessment is that after almost one and a half years of a negative policy rate, monetary policy has had a clear impact on the economy and no major problems have arisen (see the article "Perspectives on the negative repo rate" in this Monetary Policy Report). However, the generally low interest rate level may create greater vulnerability in the financial system, for instance, if it leads to assets becoming overvalued or different types of risk not being priced in full. According to the Riksbank's analysis, the

### 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. The CPI includes households' mortgage costs, which are directly affected by the Riksbank's repo rate. Instead, it is therefore sometimes appropriate to use the CPIF, in which mortgage rates are held constant. A repo rate cut does not have any direct impact on inflation through lower mortgage rates in the CPIF, which it does in the CPI. 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 fact that the CPI, CPIF and HICP have different purposes means that they are calculated in somewhat different ways. Despite the differences in construction, there are similarities between inflation according to the HICP and according to the CPIF, while CPI inflation varies more.

Figure 1:13. 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

Swedish housing market is highly valued from a historical perspective.

The low interest rates have contributed to the continuing rise in housing prices and household indebtedness (see Figure 1:14 and 1:15). As in the previous forecast, household debts as a share of disposable income are expected to increase to around 195 per cent at the end of the forecast period. In recent months, the rate of increase in lending to households has been at 8 per cent. Lending is expected to continue to increase at a faster pace than incomes going forward, which is not sustainable in the long run. If negative surprises were to occur, highly-indebted households might choose to increase their savings rapidly, thus reducing their consumption. In such a scenario, an economic slowdown could be heavily exacerbated, particularly if housing prices also start to fall.

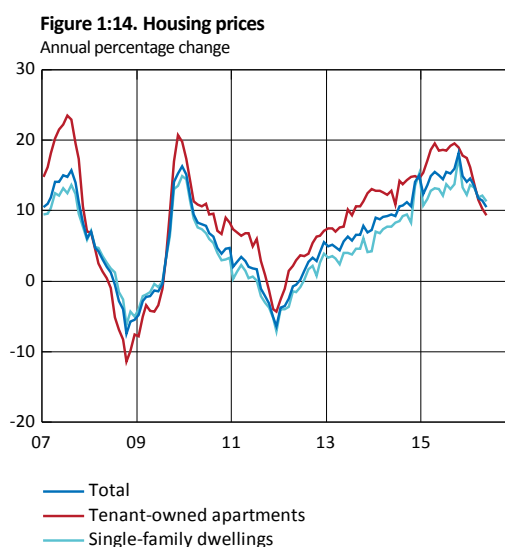
### The risks associated with household indebtedness remain – urgent need for action

Rising housing prices and ever higher household indebtedness are contributing to increasingly greater risks to both financial and macroeconomic stability, Finansinspektionen has taken measures such as an amortisation requirement, a loan-to-value limit and a risk-weight floor for mortgages.

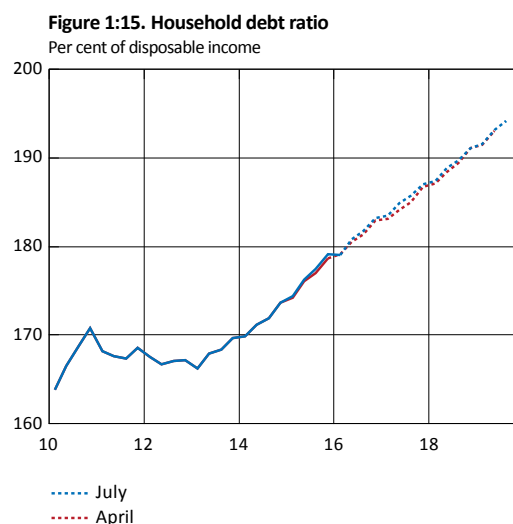
However, further measures need to be adopted to reduce the risks, particularly in a situation characterised by low interest rates. The housing market needs to be reformed to achieve a better balance between supply and demand. The cross-party talks on housing have not resulted in an agreement, so it is important that the political work in this area continues. 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.

It is extremely important that Finansinspektionen is now given the decision-making powers needed to conduct an effective macroprudential policy. How great the need for further macroprudential policy measures is depends on the extent to which the underlying causes of the increased risks are tackled and how quickly this is done. A debt-to-income limit is one example of an effective measure to reduce the risks linked to household indebtedness.

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 combination of measures in different policy areas is needed to attain a long-run sustainable development for the Swedish economy with stable economic activity and inflation. Monetary policy needs to be expansionary to provide continued support to the Swedish economy and the rising inflation. A heavily-increased repo rate would certainly slow down the build-up of debts, but at the cost of a rapid appreciation of the krona, lower inflation and higher unemployment. It is therefore essential to implement targeted measures that limit the build-up of



Source: Valueguard



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

Sources: Statistics Sweden and the Riksbank

household indebtedness in the areas of macroprudential policy, housing policy and fiscal policy. Compared with the interest rate increases, these measures could be largely designed to manage precisely the risks linked to household debt and the negative effects on the economy in general can therefore be expected to be smaller.

## ARTICLE – The result of the United Kingdom referendum on the EU creates uncertainty

On 23 June, the British people voted to leave the European Union. The result of the referendum entails major political challenges, both for the United Kingdom and for the EU, and there have been strong reactions on the financial markets. It is difficult to assess what the consequences for future economic developments will be. The Riksbank's assessment is that the result of the referendum and the increased uncertainty primarily entail negative effects for growth in the United Kingdom and that the consequences for other countries will be limited. However, there is considerable uncertainty, and the forecasts may be adjusted further as more information becomes available.

### UK referendum creates uncertainty

On 23 June, people in the United Kingdom voted to leave the European Union, EU. Prime Minister David Cameron immediately announced his resignation and at the same time left it to his successor to decide when the country should formally announce its intention to withdraw from the EU. When this happens, there will be complicated negotiations between the United Kingdom and the EU and the withdrawal shall then occur within two years, unless there is a mutual decision to extend the time limit.

The result of the referendum has created considerable uncertainty. The timetable for the withdrawal will not be clear for some time yet. In addition, the country's new government needs to deal with a number of difficult issues. A clear majority of people in Scotland voted to remain within the EU and this means that the question of independence has risen again.

The reactions on the financial markets have so far been marked by a decline in willingness to invest in high-risk assets. There have been major fluctuations on the world's stock exchanges and prices of safe assets, such as government bonds, have risen. Sterling has weakened substantially against other currencies, and the euro has weakened against the dollar and the yen. The increased risk aversion has also led to major fluctuations on the Swedish stock market and lower government bond yields in Sweden. The krona has strengthened against sterling, but weakened against the dollar and the euro, and also in competition-weighted terms. The greater unease has also created expectations of more expansionary monetary policy from central banks around the world. However, the developments have not led to any significant deterioration in the functioning of the financial markets.

### How have the Riksbank's forecasts been affected?

It is difficult to assess the consequences of the results of the UK referendum. The Riksbank's assessment is that the result of the referendum and the increased uncertainty primarily entail negative effects for growth in the United Kingdom and that the consequences for other countries will be limited. But as there is so much uncertainty over the effects, the forecasts may be adjusted further as more information becomes available.

### Effects on the United Kingdom and other countries

The result of the referendum and the increased unease are expected to lead to companies and households, primarily in the United Kingdom, but also in other countries, becoming more cautious and hesitant. Companies will postpone investments and become more restrictive with regard to new recruitment, while households will reduce their consumption. There will probably also be a reduction in direct and portfolio investments in the United Kingdom. In addition, more stringent financial conditions, such as higher risk premiums and thus higher interest rates and lower credit growth, may dampen demand. The fact that many European banks have low profitability and weak balance sheets to start with is likely to reinforce this effect.

If the United Kingdom leaves the EU, it will mean that the country is no longer a part of the single market. It will then need to renegotiate its trade agreements with the EU countries, and also other countries with which the EU has trade agreements. This is a complicated process, which will take a long time and, depending on how the new agreements are formulated, the effects on the United Kingdom's international trade may be more or less negative.

Prior to the referendum, a number of organisations published analyses of how the United Kingdom's and the



EU countries' economies would be affected if the United Kingdom withdraws from the EU. The effects on the United Kingdom's GDP a few years ahead are in the interval from –1 to –6 per cent and assessed to be on the whole greater than the effects on other EU countries. Table 1:3 shows the effects on GDP in the United Kingdom and the EU area according to two of these studies.<sup>2</sup>

The Riksbank has revised down its forecast for GDP growth abroad in the coming years as a result of the referendum result and the increased uncertainty. The forecast for United Kingdom GDP is revised down by 2 per cent at the end of the forecast period, while the inflation forecast has been revised upwards, as sterling is expected to weaken. The forecasts for GDP growth in the EU and the rest of the world are also revised down, but on a smaller scale. For the Euro area, the GDP-level is assessed to be 0.5 per cent lower at the end of the forecast period. The assessment also includes the assumption that monetary policy in the United Kingdom and the rest of the world will become more expansionary to counteract the negative effects on the economy.

**Table 1:3. Assessed effects on the UK and EU area's GDP levels in different studies**

Per cent

	Time	Scenario	United Kingdom	EU excluding United Kingdom
IMF	2019	Favourable	–1.4	–0.2
	2019	Unfavourable	–5.6	–0.5
OECD	2018		–1.3	–1.1

Note. The IMF's effects refer to the Euro area and the figure for the EU excl. United Kingdom in the favourable scenario refers to 2018. The classification of scenarios as favourable or unfavourable depends on the underlying assumptions.

Sources: IMF and OECD

### Effects on Sweden

The increased uncertainty dampening growth in the United Kingdom and the rest of Europe will also have a negative effect on Swedish growth, and the GDP forecast for Sweden is revised down, roughly in line with the rest of Europe. Exports to the United Kingdom amounted to around 8 per cent of total Swedish exports last year and in 2014, the United Kingdom's direct investment in Sweden was around 7 per cent of Swedish GDP.

Following the referendum result, the Swedish krona strengthened against sterling, but weakened against the euro and the dollar. All in all, in competition-weighted terms, the krona has weakened and the Riksbank assesses that it will become weaker than was forecast in April during the second half of 2016 and the first half of 2017. This will contribute to dampening the negative effects of

the increased unease on demand and GDP. At the same time, a weaker krona means that prices of goods and services with a high import content will increase at a somewhat faster pace.

The overall effect on inflation is therefore expected to be relatively limited, given the above. However, it is difficult to assess how the uncertainty will affect households and companies and how lasting the effects will be. This is largely dependent on political developments in the wake of the referendum. It is therefore very uncertain how the real economy, inflation and thereby monetary policy in the coming period will be affected. As more information is received, the Riksbank's forecasts may be adjusted further.

<sup>2</sup> OECD (2016), "The Economic Consequences of Brexit: A Taxing Decision", OECD Policy Paper, April 2016. IMF (2016) and "United Kingdom Selected Issues", Country report no 16/169, IMF.

## ARTICLE – Perspectives on the negative repo rate

The repo rate has been negative since February 2015. As negative nominal interest rates are a new phenomenon, it is not surprising that this situation has given rise to considerable discussion. Real interest rates – which are more relevant for consumption and investment decisions – have been falling for a long time and have been negative on several occasions throughout history. But negative nominal rates are a much more unusual phenomenon. In recent years, several central banks have introduced negative policy rates in the wake of the prolonged recession. The experiences of this situation are thus limited, but after almost one and a half years of having a negative policy rate in Sweden, monetary policy has had a clear impact on the economy and no major problems have arisen.

### A negative repo rate – previously uncharted waters

Monetary policy in Sweden and several other countries is currently very unusual in a historical perspective, with a negative policy rate and extensive purchases of securities. The fact that the Riksbank has chosen to allow the repo rate to become negative in particular has sparked a debate, in which arguments against a negative repo rate have been presented. One argument is that the negative rate counteracts its purpose, as it creates uncertainty that leads to a drop in demand in the economy when economic agents defer consumption and investment. There is also concern that the negative repo rate, which leads to lower rates in general, increases the risks in the economy via rising housing prices and debt.

The emergence of a discussion is not surprising, bearing in mind the uncharted nature of the negative repo rate situation. The Riksbank is aware that a negative repo rate can give rise to undesirable effects, but considers that it is currently necessary in order to maintain confidence in the inflation target. Precisely because this is unexplored territory, the Riksbank has cut the repo rate under zero in smaller steps than normal. The Riksbank is constantly following developments to assess whether the monetary policy is having the intended effect and ensure that financial stability is not threatened.

### Why is a negative repo rate required in Sweden?

In recent years, several central banks in addition to the Riksbank have introduced negative policy rates: the Danish, Swiss and Japanese central banks and the ECB. There are several reasons why the Riksbank has seen the need to introduce a negative repo rate. One is the fact that the underlying trend in the real interest rate has been falling for a long time, due to structural factors such as a high saving rate. This has contributed to a fall in the level of the repo rate that is compatible with a balance in the

general economy.<sup>3</sup> The repo rate then needs to be very low to stimulate the economy. For an open economy like Sweden's, the repo rate level in relation to other countries is also very important. Policy rates abroad have reached historically very low levels around zero per cent, for the same reasons as Sweden's (see Figure 2:1). If the Swedish policy rate were to deviate too much from those of other countries, the Swedish krona would, all else being equal, appreciate significantly, which in turn would subdue both economic activity and inflation.

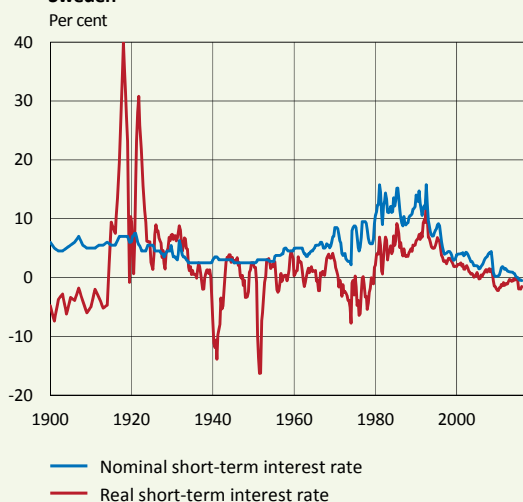
Because inflation has been below target for a long time and long-term inflation expectations have been under 2 per cent, there has been a need for very expansionary monetary policy in Sweden. The Riksbank has therefore considered it necessary to cut the repo rate below zero to safeguard the role of the inflation target as nominal anchor for price-setting and wage formation.

### Negative nominal interest rates are rare

Monetary policy has an impact on the various nominal interest rates in the economy by means of the policy rate. But real interest rates, which reflect the difference between nominal rates and expected inflation, are actually more relevant for consumption and investment decisions. The short-term real interest rate has been more or less constantly negative since 2009. Negative real rates have also occurred in Sweden further back in history, most recently during the 1970s, when inflation was high and volatile (see Figure 1:16). Negative nominal interest rates have been rarer: the nominal short-term rate in Sweden had never been negative prior to 2015.

<sup>3</sup> See Armelius, H., P. Bonomolo, M. Lindskog, J. Rådahl, I. Strid and K. Walentin "Lower neutral interest rate in Sweden?", Economic Commentaries no. 8 2014, Sveriges Riksbank, and the article "Low global interest rates" in the Monetary Policy Report, October 2014.

**Figure 1:16. Nominal and real short-term interest rates in Sweden**



Note. The real interest rate is calculated using series for the nominal interest rate and inflation/inflation expectations. For the nominal interest rate and inflation, annual data from “historical monetary statistics” is used for the period 1900–1918. For the nominal interest rate, the Riksbank’s discount rate is used for the period 1918–1983 and after that the rate on a three-month treasury bill is used. For inflation, the cost-of-living index or CPI from Statistics Sweden is used for 1918–1979 and after that inflation expectations in the household sector for one year ahead, as calculated by the National Institute of Economic Research.

Sources: The National Institute of Economic Research, Statistics Sweden and the Riksbank

For a long time, the prevalent opinion was that the policy rate could not be cut below zero, even if there was a need to do so.<sup>4</sup> This reasoning is based on the fact that households and companies, as an alternative to interest-bearing assets, can invest their money in cash, which by definition generates zero nominal interest. If banks were to introduce negative deposit rates, there is a risk that depositors, including households, would withdraw their money from their deposit accounts and “stuff it under the mattresses” to avoid the negative interest rate.

### Which agents in the Swedish economy meet negative rates?

The fact that the repo rate is negative does not mean that general interest rates in Sweden are negative. The repo rate is a very special short-term interest rate that has only direct significance for the Riksbank’s monetary policy counterparties, primarily the commercial banks. When the repo rate is negative, the banks pay an interest rate to “store” their money at the Riksbank, as the banking system has an aggregate liquidity surplus in relation to the Riksbank. The liquidity surplus has increased recently, largely due to the Riksbank’s purchases of government bonds. This can contribute to increasing the effects of the negative interest rate on the economy, as the

banks then have greater reason to seek a higher return on their investments.

Now that the repo rate has been cut to –0.5 per cent, the short-term interbank rates and government bond yields have also turned negative and are now on approximately the same level as the repo rate. The fact that interbank rates are negative means that the interest rate is negative for loans between the banks. Negative short and medium-term government rates in turn mean that the government can also borrow at a negative interest rate for maturities up to around eight years. Banks and some larger corporations and municipalities can also borrow over the short term at negative interest rates.

### Deposit rates for households and most companies not yet in negative territory

So far, banks have refrained from introducing negative deposit rates for households and most companies. In Sweden, only a few actors have been subject to negative deposit rates. These are primarily larger companies and municipalities, who can obtain funding at negative rates, which means that there is scope for banks to charge them negative deposit rates. The average deposit rate for households and companies has been around zero per cent for some time (see Figure 2:8). But information from banks suggests that some non-financial corporations meet negative deposit rates in the form of fees, which therefore do not show up in the statistics. However, this only applies to a small proportion of non-financial corporations’ total deposits. In the Riksbank’s Business Survey, companies with large amounts of cash say that they are trying to reinvest their liquidity to avoid these new deposit costs.

**Table 1:4.**

Interest rates that are negative
The repo rate
Interbank rates
Government bonds at maturities up to 8 years
Mortgage bonds at maturities up to 3 years
Deposit rates for certain large companies and municipalities
Short-term market funding for certain companies and municipalities
Interest rates around zero
Deposit rates for households and most companies
Interest rates that are positive
Lending rates for households and companies
Government bonds at maturities over 8 years
Mortgage bonds at maturities over 3 years
Corporate bonds

### Profitable banks and minor practical problems

Another argument against negative interest rates is that they reduce the banks’ profitability, which could lead to higher lending rates and a lower supply of credit. However, Swedish banks’ profitability has

<sup>4</sup> See, for instance, U. Söderström and A. Westermark, “Monetary Policy with a Zero Interest Rate”, Economic Review no. 2 2009, Sveriges Riksbank.

remained high and stable during the rate cuts in recent years. The repo rate cuts below are also deemed to have contributed to lower lending rates for households and companies, insofar as banks' market funding has become cheaper. The Riksbank's assessment is that the overall effect of negative rates on banks' profitability is limited and may even be positive, and that monetary policy has functioned well despite the negative policy rate level.<sup>5</sup>

For certain actors, there may be costs specifically linked to negative interest rates. These are related to IT systems that may have a limited capacity to manage negative rates and costs linked to the management of legal and contractual problems that crop up when interest rates are negative. The need to adapt financial systems and practice among actors has so far been limited and manageable.<sup>6</sup>

#### **Low risk of large-scale cash withdrawals**

The Riksbank assesses that there is little risk that banks, companies or households will begin to withdraw large volumes of cash. Households are not facing negative interest rates, and changing from using cards for payments to holding large volumes of cash is quite costly, for instance, safe storage of banknotes and coins.<sup>7</sup> The banks and some companies are facing negative interest rates, but for them, too, the cost of increasing cash holdings is considerable. The use of cash in Sweden has shown a declining trend for many years, and so far there are no signs of a break in the trend.

#### **Negative repo rate not an expression of "crisis"**

A concern sometimes mentioned in the debate is that the negative repo rate increases uncertainty among economic agents, as it would be perceived as a "crisis tool". As yet, there is no sign of falling demand in the economy as a result of increased uncertainty among households, companies or financial market participants. Economic agents don't seem to be reluctant to consume and invest. For example, the National Accounts show that growth in both housing and business investment has been much stronger than normal in recent years. And domestic demand has on the whole been an important driving force behind the improved economic activity in Sweden. Household consumption of durable goods has increased at a good rate, for instance. The labour market has been steadily improving, employment is rising, redundancy

notices are at low levels and companies are still planning to recruit, which suggests optimism about the future.

The National Institute of Economic Research's Economic Sentiment Indicator is signalling on the whole that confidence has risen after the repo rate was cut below zero (see Figure 3:7).

#### **The expansionary monetary policy has contributed to high growth and rising inflation, but also entails risks**

The Riksbank's assessment is thus that the monetary policy has worked approximately as expected even when the repo rate was cut below zero. The negative repo rate – in combination with the Riksbank's purchase of government bonds – has had an expansionary effect on the Swedish economy. Growth is good, while unemployment has reached its lowest level since 2009 and there are no clear signs that the negative repo rate has led to greater uncertainty that will hold back economic activity. Even though inflation is still below the target, it has been on an upward trend since 2014 and the inflation target is perceived as credible.

But the general low interest rate situation also entails risks, which in Sweden are primarily associated with high and growing indebtedness among households. Measures are therefore needed within other political restraints to reduce these risks in different ways, something the Riksbank has been highlighting for a long time. Monetary policy needs to be expansionary to provide continued support to the Swedish economy and the upturn in inflation. A heavily-increased repo rate would certainly slow down the build-up of debts, but at the cost of a rapid appreciation of the krona, lower inflation and higher unemployment. Compared with the interest rate increases, other measures could be largely designed to manage precisely the risks linked to household debt and the negative effects on the economy in general can therefore be expected to be smaller.

<sup>5</sup> See the article "How do low and negative interest rates affect banks' profitability?" in Monetary Policy Report April 2016.

<sup>6</sup> One issue has been bonds with variable coupons. When reference rates are negative, the coupon can also be negative. The investor will then pay the coupon to the issuer, rather than the other way around. Market participants have so far coped with this by not making investors pay when coupons are negative.

<sup>7</sup> See Alsterlind J., Armelius H., Forsman D., Jönsson B., and Wretman A.-L., "How far can the repo rate be cut?", *Economic Commentaries*, No. 11, 2015, Sveriges Riksbank.

## CHAPTER 2 – Financial conditions

Since the Monetary Policy Report in April, developments on the financial markets have been characterised by uncertainty linked to the referendum in the United Kingdom, in which the majority voted to leave EU. As a result of this, there have been major fluctuations on the world's stock exchanges and prices of safer assets, such as government bonds, have risen. There have also been substantial fluctuations on the foreign exchange market, both in Sweden and abroad. In competition-weighted terms, the Swedish krona has weakened compared with the Riksbank's forecast in April. The interest rates faced by households and companies remain on record low levels and lending to households is continuing to increase at a relatively rapid rate but the increase in housing prices has slowed down. All in all, the financial conditions in Sweden are still deemed to be favourable for economic growth.

### International developments

Since the monetary policy decision in April, developments on the financial markets have been characterised by uncertainty linked to the referendum in the United Kingdom, in which the majority voted to leave the European Union. Shifts in the market's view of the rate at which the Federal Reserve will raise the US policy rate have also affected the financial markets over the period. The results of referendum in the United Kingdom have led to major fluctuations on the financial markets. For instance, sterling has weakened significantly, there have been major fluctuations on the world's stock exchanges and prices of safer assets, such as government bonds, have risen. However, the developments have so far not led to any significant deterioration in the functioning of the financial markets.

#### Government bond yields on new minimum levels

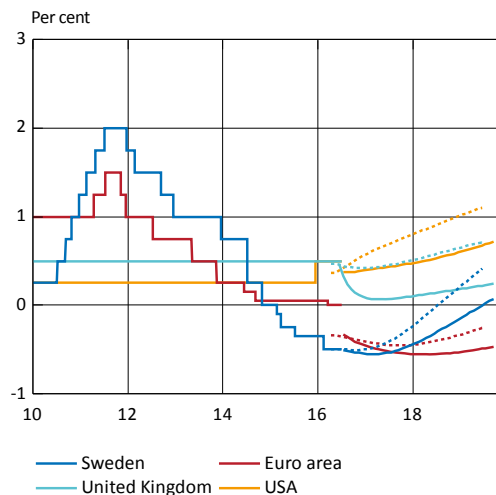
The market's expectations of when the Federal Reserve will raise the policy rate in the United States have swung back and forth since April. After communication from various board members, market expectations of an increase over the summer first began to rise. However, weak statistics for the development of the labour market in May led expectations to shift downwards again, a picture that was then strengthened by the Federal Reserve's interest rate decision in the middle of June. Following the referendum in the United Kingdom, expectations fell further and are now clearly lower than they were in April. According to market pricing, the next policy rate rise in the United States is now priced for 2018 (see Figure 2:1).

In Europe, the European Central Bank (ECB) has not launched any new measures over the period. However, following the referendum in the United Kingdom, expectations of lower policy rates in the period ahead have increased. Moreover, in June, two previously-announced

Table 2:1.

Developments on financial markets since the April Monetary Policy Report	
Government bond yields	Lower government bond yields in Sweden.
The foreign exchange market	In competition-weighted terms, the Swedish krona has depreciated compared with the Riksbank's forecast from April.
The stock market	Major fluctuations on the Swedish Stock Exchange. On the whole, the exchange has fallen somewhat since April.
Interest rates for households and companies	Low interest rates for households and companies.
Credit growth	Continuing high growth in lending to households.

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 4 July 2016 apart from the United States which is estimated on 1 July 2016. Broken lines are estimated on 20 April 2016.

Sources: Macrobond and the Riksbank

programmes were initiated: the second round of the targeted longer-term refinancing operations (TLTRO) and purchases of corporate bonds. The loans in the first round of the new liquidity programme were primarily used to repay previous loans from the ECB that had slightly less favourable terms. The rate of purchases of corporate bonds was initially about EUR 2 billion per week, which amounts to just over 10 per cent of the ECB's total weekly asset purchases.

The shift in market expectations has been greatest in the United Kingdom, where the market is now awaiting a policy rate cut from the Bank of England in the later part of the year (see Figure 2:1). This picture is reinforced by statements from Bank of England Governor Mark Carney, who has signalled that monetary policy in the United Kingdom will probably need to be more expansionary over the coming months.

Unease over the referendum in the United Kingdom and the increasingly delayed expectations of when the Federal Reserve can be expected to raise the policy rate in the United States have led government bond yields to fall in most countries since April. In both Germany and the United Kingdom, 10-year government bond yields have noted new minimum levels. In Germany, the 10-year yield is now negative (see Figure 2:2).

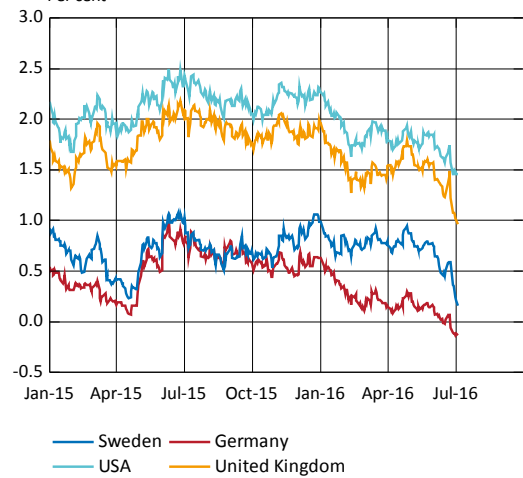
**Severe weakening of sterling**

Following the UK referendum, there have been major fluctuations on stock markets around the world. In Europe, stock market levels have fallen since April, while in the United States the level is in principle unchanged at present. Bank shares have experienced greater falls (see Figure 2:3). This is partly due to renewed unease regarding the health of the European banking sector, and partly to uncertainty over the conditions for the banks' major activities in the United Kingdom going forward. The cost of insuring oneself against payment defaults from European banks has also risen slightly.

In the euro area, a significant part of corporate bonds with short maturities are now being traded at negative rates on the secondary market. Among other reasons, this is a consequence of the introduction of the ECB's purchases of corporate bonds.

On the foreign exchange market, there have been large fluctuations following the referendum in the United Kingdom. For instance, sterling has weakened substantially (see Figure 2:4). It is now at the lowest level in 30 years against the US dollar. At the same time, currencies that usually appreciate when there is great uncertainty on the market, such as the US dollar, the Japanese yen and the Swiss franc, have appreciated. The euro has strengthened against sterling but has weakened against the dollar, for example.

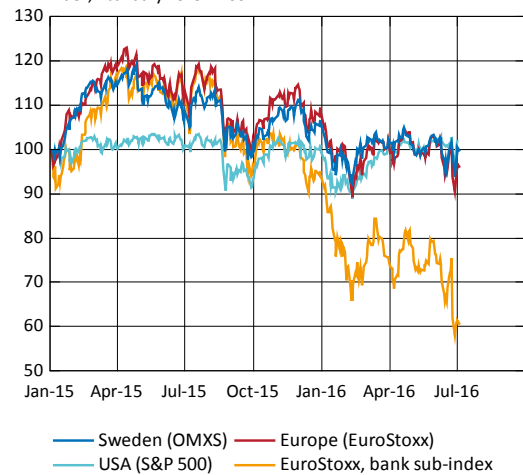
**Figure 2:2. Government bond rates with 10 years left to maturity**  
Per cent



Note: Zero-coupon rates interpolated from bond prices using the Nelson-Siegel method.

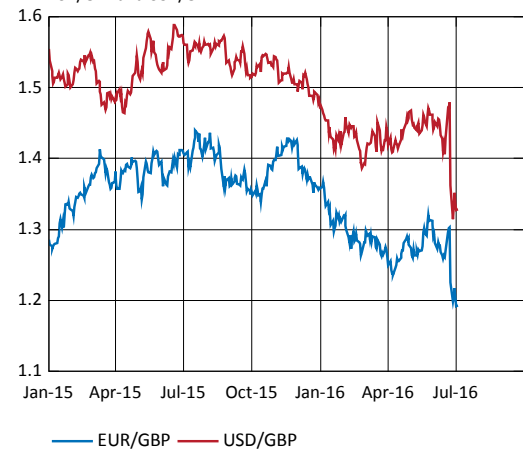
Sources: Macrobond and the Riksbank

**Figure 2:3. Stock market movements**  
Index, 2 January 2015 = 100



Sources: Macrobond and Thomson Reuters

**Figure 2:4. Sterling exchange rate**  
EUR/GBP and USD/GBP



Source: Macrobond

## Financial conditions in Sweden

### Financial conditions in Sweden are still expansionary

The financial conditions in Sweden have also been affected by the referendum in the United Kingdom but overall remain positive for economic growth. Market rates in Sweden have fallen since April. The stock exchange has fallen slightly and the krona has depreciated in competition-weighted terms. Interest rates for households and companies remain largely unchanged on low levels. The rate of increase in housing prices seems to have slowed down in recent months, while at the same time credit growth remains high.

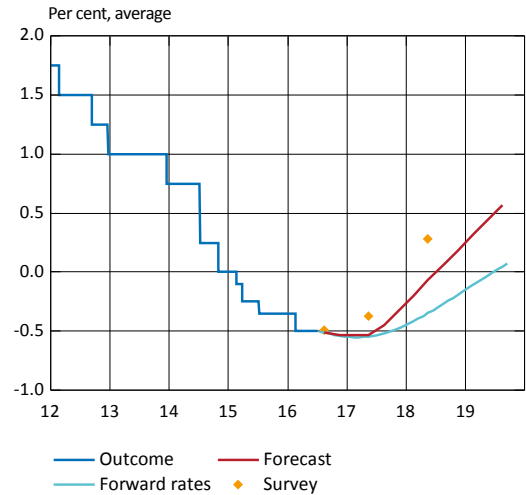
### Lower Swedish government bond yields

At the monetary policy meeting in April, the Riksbank decided to leave the repo rate unchanged at -0.50 per cent, at the same time as purchases of government bonds were extended by SEK 45 billion. The purchases of government bonds will now continue for the rest of the year. For the first time, purchases of real government bonds were announced in April. These account for one-third of the newly-announced purchases, which is to say SEK 15 billion.

Since the monetary policy decision in April, expectations of the repo rate in the period ahead have fallen, particularly in the slightly longer term, which is in line with international developments. Expectations for the future repo rate, according to forward rates, are in line with the Riksbank's repo rate path over the next year, but then rise at a somewhat slower rate (see Figure 2:5). Expectations according to surveys are instead slightly over the repo rate a few years ahead. However, these interviews were conducted before the referendum in the United Kingdom.

The Riksbank's announcement of extended purchases of nominal government bonds in April was largely expected and therefore had no direct impact on bond rates following announcement. Since then, lower expectations of the repo rate in the period ahead and falling government bond yields globally, above all since the referendum in the United Kingdom, have led Swedish government bonds to fall across all horizons. The greatest fall can be noted for bonds with longer maturities.

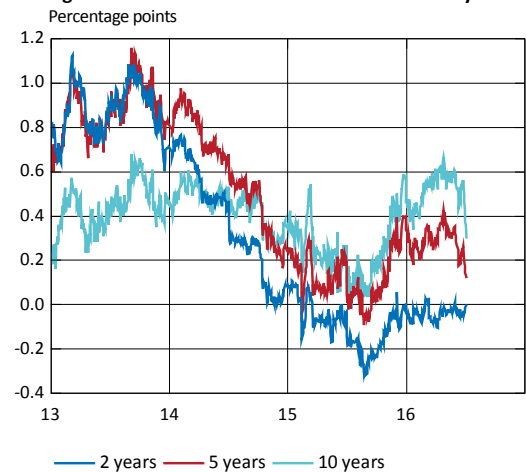
Figure 2:5. Repo rate and market expectations



Note: The forward rates are estimated as of 1 July 2016 and measure the expected repo rate. The survey responses show the average for money market participants on 1 June 2016.

Sources: Macrobond, TNS Sifo Prospera and the Riksbank

Figure 2:6. Yield differential in relation to Germany



Note: Zero-coupon rates interpolated from bond prices using the Nelson-Siegel method.

Sources: Macrobond, Thomson Reuters and the Riksbank

### 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.



Swedish yields have fallen slightly more than German ones, which means that the yield differential with Germany has fallen slightly since April (see Figure 2:6).

On the other hand, the Riksbank’s announcement of purchases of real government bonds in April came as something of a surprise for the market and the yield on the bonds fell relatively heavily in conjunction with the announcement. Since this, it has fallen further, which is in line with the movements of the nominal government bond yields.

**Krona weaker after referendum in United Kingdom**

Following the referendum in the United Kingdom, there have been substantial fluctuations on the Swedish Stock Exchange. Like other stock exchanges in Europe, the level is now slightly lower than it was at the time of the monetary policy decision in April (see Figure 2:3). At the same time, yields on higher-risk bonds, such as corporate bonds, have fallen in line with government bond yields.

In competition-weighted terms, KIX, the Swedish krona has weakened compared with the forecast in April (see Figure 1:8). This depreciation can be explained by the increased uncertainty on the global financial markets following the referendum in the United Kingdom. Increased global uncertainty usually means a weaker krona. The main contribution to the weakening in KIX is from the euro, which appreciated against the krona over the period. But a depreciation against the US dollar and a number of other currencies has also contributed. The large fall in sterling is also having an impact in KIX and has held up against the depreciation of the krona in trade-weighted terms (see Figure 2:7).

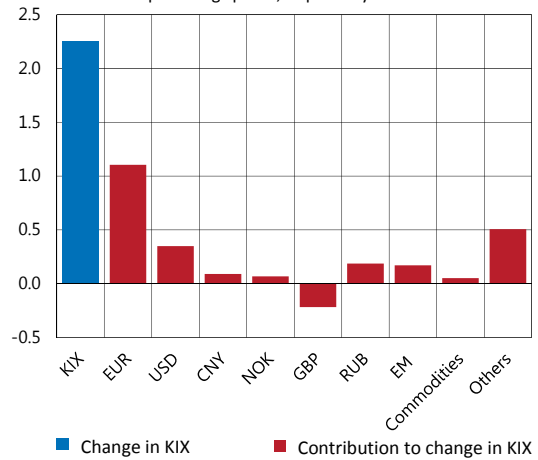
**Continued good funding conditions for Swedish banks**

Since April, yields for mortgage bonds issued by Swedish banks have decreased. The size of the falls is in line with those for government bond yields with the same maturity. The yield differential between mortgage and government bonds is thus in principle unchanged in relation to April and remains on slightly higher levels than it has been in recent years. Given the low interest rate environment, Swedish banks are deemed to continue to have favourable funding conditions, which creates good preconditions for lending to households and companies.

**Low interest rates for households and companies**

Data up to the end of May show that the repo-rate cut in February had a limited impact on lending rates to households and companies (see Figure 2:8). One explanation for this may be that the banks’ funding costs have not decreased to the same extent that the repo rate was cut. This is partly because the banks have chosen not to cut the deposit rate below zero for most of their deposits, and partly because the banks’ costs for market funding for lending at variable rates has become

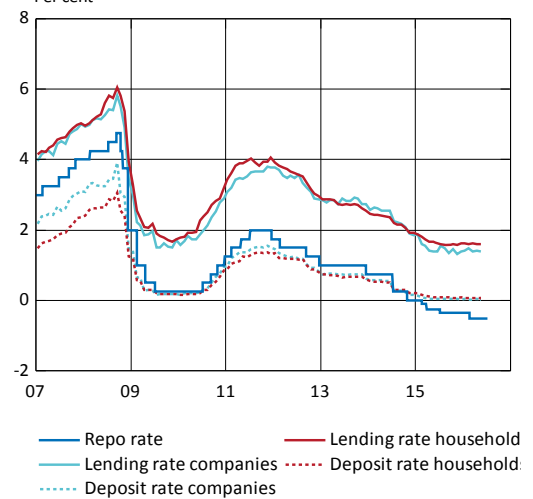
**Figure 2:7. Changes and contributions to KIX exchange rates**  
Per cent and percentage points, respectively



Note. The figure shows change in KIX and contributions from different currencies between 21 April 2016 and 4 July 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 2:8. Repo rate together with the deposit and lending rate to households and companies, new contracts**  
Per cent



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

Sources: Statistics Sweden and the Riksbank



slightly more expensive since the beginning of last year.<sup>8</sup> However, the Riksbank can continue to influence lending rates as the cost of the banks' market funding is lower than it would have been otherwise when the repo rate is cut. The repo-rate cut in February may thus have counteracted an increase in lending rates during this period.

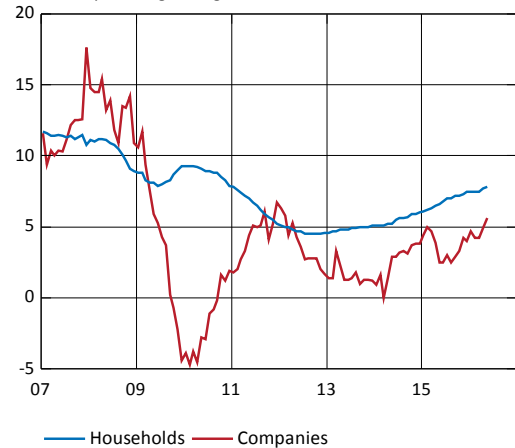
Deposit rates were at historically low levels in May. The average mortgage rate for new contracts was 1.6 per cent and, for non-financial companies, the average rate on new bank loans was 1.4 per cent. Deposit rates for households and companies have remained largely unchanged since the middle of last year and are close to zero (see Figure 2:8).

### Household borrowing continuing to increase

Lending to households is continuing to increase at a rapid rate (see Figure 2:9). The increase largely consists of loans with tenant-owned apartments and single-family houses as collateral. Lending to non-financial companies is also increasing. This is largely explained by loans with different types of property as collateral. For companies, borrowing via securities is also increasing. The annual growth rate in securities borrowing in May was 4 per cent. At the same time, surveys show that companies continue to have good access to credit.

The rise in housing prices has slowed down since April. Compared with the same period last year, housing prices have increased by 11 per cent, which can be compared with annual rates of increase of around 20 per cent last year (see Figure 1:14). SEB's house price indicator, which measures households' expectations of housing prices in the period ahead fell sharply in June, but continues to indicate that a large majority of households believe in rising house prices in the period ahead.

**Figure 2:9. 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.

Source: Statistics Sweden

<sup>8</sup> Some larger companies and municipalities are facing negative interest rates or charges for deposits. All in all, however, these volumes comprise a relatively small part of the total deposits.

## CHAPTER 3 – The current economic situation

Growth abroad strengthened somewhat at the beginning of 2016 after a weak development at the end of 2015. Indicators suggest that the global recovery is continuing, albeit at a moderate pace. After a strong showing last year, Swedish growth slowed during the first quarter and is expected to be slightly lower this year than in 2015. Rising resource utilisation in recent years and the continued fall in unemployment are creating the conditions for higher inflation in the period ahead, but the upturn in inflation continues to be uneven.

### Inflation

#### Inflation continuing to rise

According to various measures of underlying inflation, the trend rise in inflation that has been seen over the past two years is continuing (see Figure 3:1). However, lower mortgage rates and falling costs for energy goods are holding back the rate of increase in the CPI.

In May, CPIF inflation rate slowed to 1.1 per cent (see Figure 3:2). The annual prices of goods, services and food increased slightly more slowly than in April. At the same time, energy prices did not fall as quickly and the decline in CPIF inflation excluding energy was therefore slightly greater. Compared with the forecast in the April Monetary Policy Report, CPIF inflation has developed marginally weaker while energy prices have not fallen as quickly. CPIF inflation excluding energy has therefore been somewhat lower than expected.

The weakening of the Swedish krona between 2014 and 2015 is still contributing to faster price increases in certain goods and services, especially clothes and shoes. At the same time, the gradual appreciation of the krona in the past year is deemed to have subdued prices of other goods, including some foodstuffs.

#### Upturn in inflation still uneven

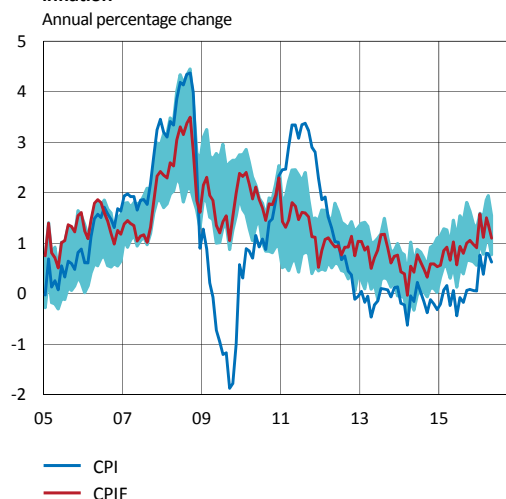
Based on forward-looking indicators, it is still difficult to obtain a uniform picture of how inflation will develop in the near term. On the one hand, global market prices for some items including food have stabilised after falling in recent years. Domestic market prices for consumer goods in the producer channel have also increased more and more rapidly during the spring (see Figure 3:3). On the other hand, import prices for consumer goods in the producer channel have started to fall after having increased over the last two years or so, which dampens cost pressures in the corporate sector. The falling import prices are deemed largely to be the result of the appreciation in the krona from the middle of last year until this spring, although price increases abroad are also

Table 3:1.

Expected development in April MPR	Actual development
CPIF inflation 1.1 per cent in second quarter.	Monthly outcomes for April and May marginally lower than the forecast.
GDP growth 2.0 per cent in first quarter.	GDP growth 2.0 per cent.
Unemployment 6.9 per cent in second quarter.	Monthly outcomes for April and May on the whole approximately in line with the forecast.
GDP growth in the euro area 1.7 per cent in first quarter.	GDP growth slightly stronger than forecast, 2.2 per cent.
GDP growth in the United States 1.1 per cent in first quarter.	GDP growth 1.1 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 in per cent, calculated as an annual rate.

Figure 3:1. CPI, CPIF and different measures of underlying inflation



Note. The field show the highest and lowest outcomes among different measures of underlying inflation. The measures included are the CPIF excluding energy, CPIF with constant tax, UND 24, TRIM 85, HICP excluding energy and unprocessed food, persistence-weighted inflation, factors from principal component analysis and weighted median inflation.

Sources: Statistics Sweden and the Riksbank

moderate in both the producer and the consumer channels. According to the Riksbank's business survey in May, consumer-related companies also expect low purchasing costs and strong competition to make it difficult to increase prices in the year ahead.

One way of considering the indicators is to follow a formal model analysis. Such an analysis indicates that the growth rate in CPIF excluding energy will slow over the second and third quarters (see Figure 3:4). CPIF Inflation excluding energy is expected to amount to an average of 1.6 and 1.4 per cent respectively during the second and third quarter. The fact that the inflation forecast is higher than the model-based forecast for the second quarter is mainly due to the model forecast not being able to take enough account of the dramatic price fluctuations that have characterised foreign travel, for example.

Since the Monetary Policy Report in April, the CPIF excluding energy has increased somewhat slower than expected and leading indicators for inflation have generally been subdued somewhat. At the same time, the krona has depreciated in the wake of the UK referendum and is expected to contribute to a somewhat stronger development in prices of imported goods and services. All in all, the forecast for CPIF excluding energy has been revised down somewhat in the short term.

Energy prices are at the same time expected to be stronger than in the preceding forecast. Prices for both fuel and household electricity are expected to rise more rapidly in the period ahead in light of higher forward pricing. Therefore, the forecasts for CPIF and CPI inflation are adjusted marginally upwards in the short term compared with those in April.

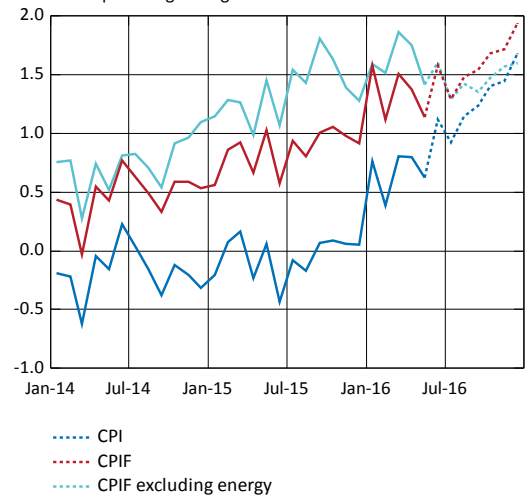
## Global and Swedish economic activity

### Continued sluggish recovery abroad

Global trade in goods decreased and global growth was subdued during the first quarter of 2016. But as developments in Russia and Brazil were not quite as weak as in the previous quarter and growth increased in the euro area and Japan, the global economy as a whole still grew slightly more rapidly during the first quarter this year than the final quarter of last year.

In the euro area, domestic demand continued to drive growth in the first quarter, as consumption in particular grew more rapidly while investment rose slightly more slowly than during the fourth quarter. Furthermore, there was a distinct slowdown in UK growth in the first quarter. Domestic demand was weak and investment fell for the second quarter in a row. In addition, confidence among households and companies has decreased in recent months in the run-up to the UK referendum on EU membership.

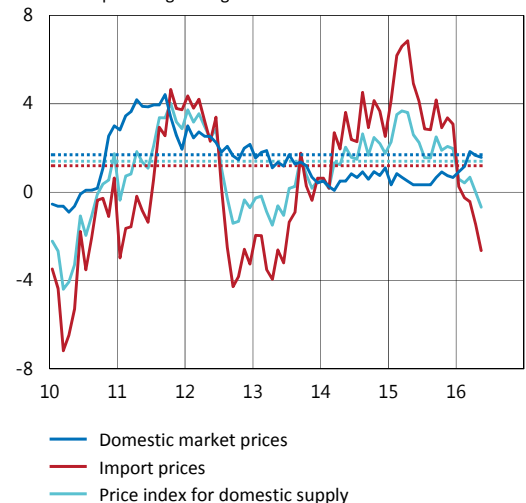
**Figure 3:2. CPI, CPIF and CPIF excluding energy**  
Annual percentage change



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

Sources: Statistics Sweden and the Riksbank

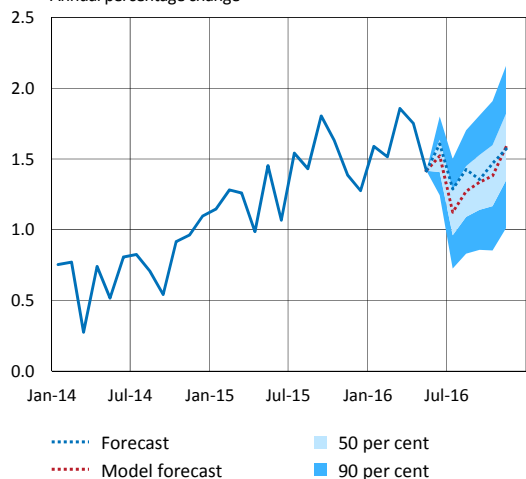
**Figure 3:3. Producer prices for consumer goods**  
Annual percentage change



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

Sources: Statistics Sweden and the Riksbank

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



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

Sources: Statistics Sweden and the Riksbank

In the United States, growth fell in the first quarter, due in part to a decrease in investment outside the housing sector and weak consumption. The weak developments during the first quarter are deemed to be temporary, however, and are in part due to the slowdown in the oil-producing sector as well as temporary effects that subdued consumption. At the same time, the US housing market continued to develop strongly and growth in housing investment accelerated during the first quarter. The number of persons employed on the US labour market has increased rapidly as increasing numbers are finding their way into the labour market, at the same time as unemployment has fallen. Recently, however, employment growth has slowed. This development is deemed in part to be temporary, for instance, companies' recruitment plans continue to be expansive.

### Indicators suggest moderate growth in the second quarter

Business confidence indicators for the second quarter suggest that global growth was still subdued.

Indicators for household confidence and retail trade development point to major differences in consumption growth among the largest economies. In the United States, consumer confidence and retail have developed strongly. A relatively normal development of the private consumption in May was preceded by a sharp rise in April, as a result of a substantial upturn in car sales. Overall, this indicates a relatively strong consumption growth in the second quarter. In the euro area, retail sales in April point, however, to weak growth in consumption at the start of the second quarter. Household confidence was basically unchanged in June and is still lower than at the start of the year.

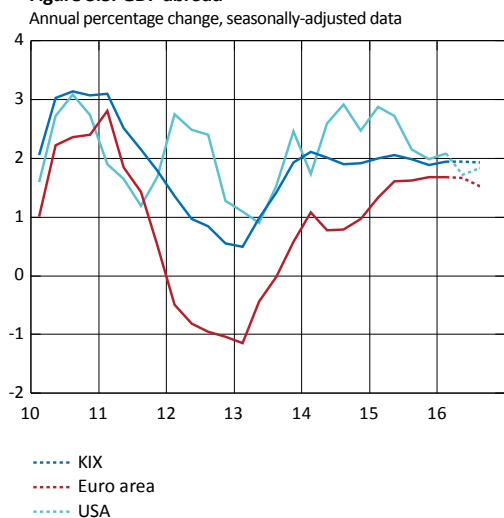
At the same time, exports have slowed as the support from earlier depreciations of the euro has decreased, and even though the monthly statistics for export growth in April were unexpectedly strong, forward-looking indicators do not give a uniform picture of developments.

All in all, indicators and outcomes point to moderate growth in the second quarter. The results of the UK referendum on EU membership are expected to burden developments further in the third quarter (see Figure 3:5).

### The oil price is rising, albeit from low levels

Disruptions to output in certain oil-producing countries have contributed to the continued rise in the oil price from its low level at the turn of the year. Despite the upturn, the oil price is still substantially lower than it was 12 months ago (see Figure 4:1), and energy price developments are therefore still subduing inflation in those economies that are important for Sweden's foreign trade. Meanwhile, underlying inflation is still low in the euro area while it is higher and the trend is rising in the US (see Figure 3:6).

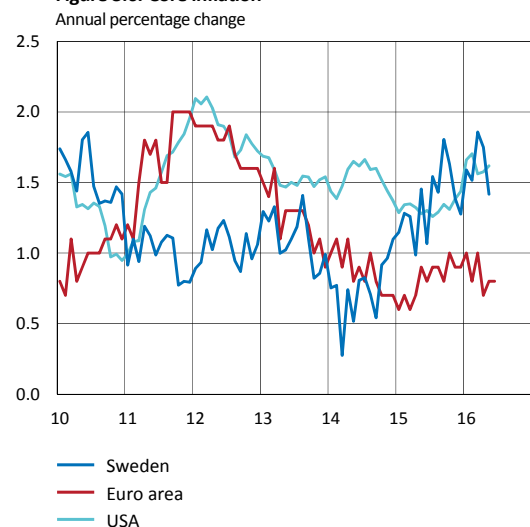
**Figure 3:5. GDP abroad**



Note. KIX refers to an aggregate of countries that are important for Sweden's international transactions.

Sources: Bureau of Economic Analysis, Eurostat, national sources and the Riksbank

**Figure 3:6. Core inflation**



Note. HICP excluding energy and unprocessed food is shown for the euro area. PCE excluding energy and food is shown for the United States and CPIF excluding energy is shown for Sweden.

Sources: Bureau of Economic Analysis, Eurostat and Statistics Sweden

**High Swedish growth slowing down in 2016**

The high level of Swedish growth, especially towards the end of 2015, slowed during the first quarter to a pace more in line with the historical average. Indicators suggest a similar development in the second quarter.

GDP grew by around 2 per cent in the first quarter compared with the previous quarter and calculated as an annual rate. The fact that growth slowed compared with the fourth quarter last year can in part be explained by temporary factors that contributed to a high level of growth at that time. Although domestic demand grew quickly in the first quarter, the effect was counteracted by very weak growth in service exports.

Confidence indicators suggest that growth will continue to be slightly lower in the second and third quarter compared with last year’s high growth figures. The Economic Tendency Survey rose slightly in June after falling for four months in a row, and is on a level compatible with slightly higher growth than the historical average (see Figure 3:7) while the Purchasing Managers’ Index indicates slightly weaker growth.

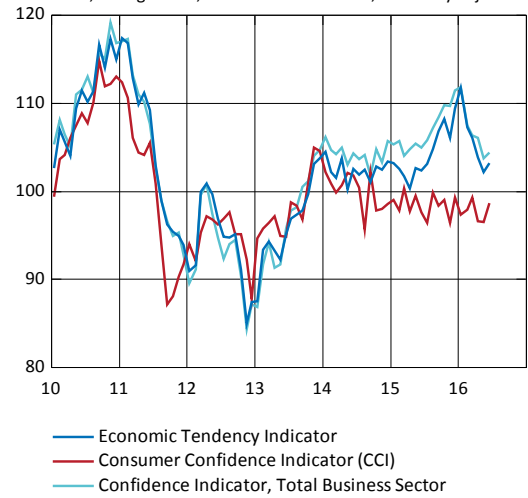
Households’ energy consumption was behind much of the sharp increase in consumption during the first quarter. Consumption growth is expected to be lower during the second quarter, in part due to the expected reduction in the contribution from energy consumption. Despite a certain upturn in June, household confidence in the Economic Tendency Survey suggests that households continue to be slightly more pessimistic than the business sector. Although the monthly retail sales statistics increased sharply in May, they have been weak during the early spring.

Indicators for Swedish export growth and monthly statistics for foreign trade in goods suggest that exports are growing slightly more slowly than normal. The indicators refer mainly to goods exports, however, and the sharp fall in services exports in the first quarter is deemed largely to be temporary.

The information in GDP growth indicators in the second and third quarter can be summarised in statistical models. For the second quarter, a model-based forecast suggests that GDP is growing at about 2.5 per cent compared with the immediately preceding quarter and calculated as an annual rate (see figure 3:8). The Riksbank’s forecast also considers assessments of factors that are not included in or not properly captured by the models. Such factors are not deemed in general to justify any major deviation from the model forecast in the second quarter. For the third quarter, the result of the UK referendum in EU membership is expected to weaken confidence among households and companies and thereby subdue the willingness to invest and consumption. Swedish GDP is therefore expected to grow by just over 2.5 per cent and 2 per cent during the second and third quarters respectively compared with the most recent quarter and calculated as an annual rate.

**Figure 3:7. Confidence indicators**

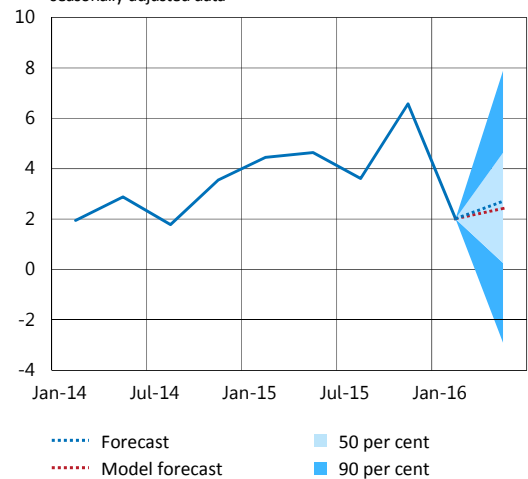
Index, average = 100, standard deviation = 10, seasonally-adjusted data



Source: National Institute of Economic Research

**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

**Unemployment is continuing to decline**

Just as for GDP, the growth in employment was slightly subdued in the first quarter of this year compared to the end of last year. According to the Labour Force Survey (LFS), the proportion of unemployed persons going from unemployment into employment (known as the job-finding rate) still increased to its highest level since before the financial crisis. In April and May, both employment and the labour force have seen strong growth and unemployment in general has decreased slightly compared to the beginning of the year.

Labour market indicators suggest that employment will continue to increase relatively strongly in the third quarter. According to the Economic Tendency Survey, recruitment plans, which have gradually declined at the start of the year, rose again in June (see Figure 3:9), and are on a level above the historical average, which indicates relatively strong employment growth. The number of job vacancies is also on a high level, according to Statistics Sweden. The employment

rate, which has increased continuously since 2010, is expected to rise slightly more during the second and third quarters and unemployment is expected to decrease (see Figure 3:10).

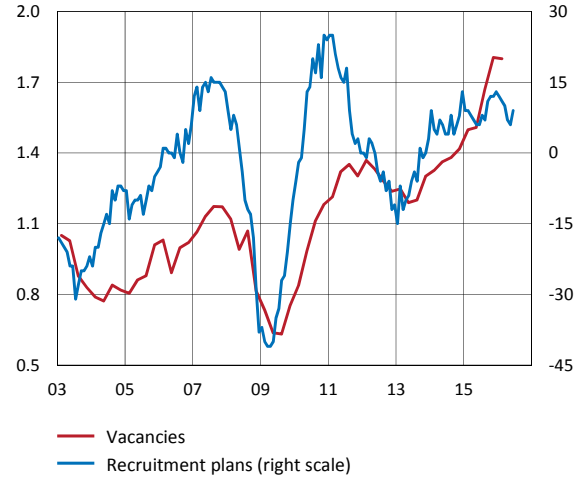
**Resource utilisation is judged to be close to normal in 2016**

Last year's high GDP growth and upturn in employment mean that the amount of spare capacity, both within companies and on the labour market, has fallen. This is significant for the assessment of GDP growth in the period ahead, and ultimately for the development of wages and prices.

The Riksbank uses several indicators to help assess the amount of spare capacity in the economy. Statistics Sweden's measure of capacity utilisation in the industrial sector and the percentage of companies specifying a labour shortage according to the Economic Tendency Survey has increased to levels above its historical average. Shortage figures in the business sector indicate labour shortages in the construction industry in particular, but also within the private service sector. The proportion of public sector employers who have recruitment problems has markedly increased in the past two years, however, and amounted to just over 60 per cent in the first half of this year according to the Swedish Public Employment Service's half-yearly business survey. It is primarily in Swedish municipalities that the shortages have increased. The Riksbank's RU indicator, which estimates how much resource utilisation deviates from the mean value since 1996, has also risen and is now just above zero (see Figure 3:11).

All in all, the Riksbank expects resource utilisation in the Swedish economy to remain close to normal during 2016.

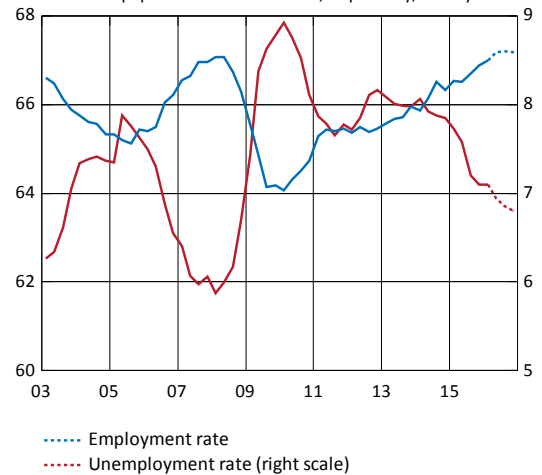
**Figure 3:9. Vacancies and recruitment plans**  
Percent of the labour force and net figures, respectively, seasonally-adjusted data



Note. Recruitment plans refer to expectations of the number of employed in the business sector.

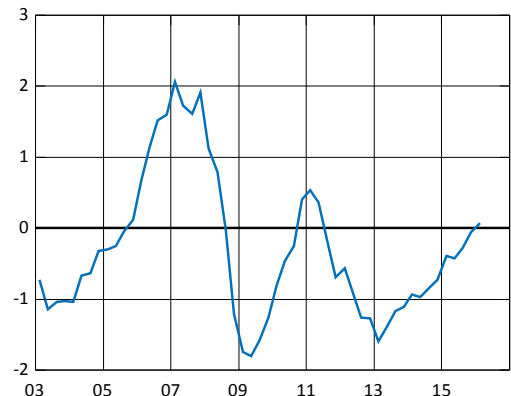
Sources: The National Institute of Economic Research and Statistics Sweden

**Figure 3:10. Employment and unemployment rate**  
Per cent of population and labour force, respectively, 15-74 years



Sources: Statistics Sweden and the Riksbank

**Figure 3:11. 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

## CHAPTER 4 – The economic outlook and inflation prospects

The recovery abroad is continuing, but uncertainty over international developments has increased substantially since the British people voted to leave the EU. Strong domestic demand will further strengthen economic activity in Sweden in the years ahead, even if growth has been revised downwards against the forecast from April. Employment will continue to increase, while unemployment will fall for a further period before levelling off and turning weakly upwards as many of the newly arrived immigrants enter the workforce. The increasing level of resource utilisation means that the trend increase in inflation will continue and CPIF inflation will reach 2 per cent in 2017.

### International outlook

#### The international recovery is continuing albeit at a slower pace

Following a downswing at the end of 2015, global growth strengthened slightly at the start of 2016. The recovery is expected to continue in the years ahead, albeit at a relatively moderate pace. Compared with the forecast in April, international growth is now deemed to be slightly lower. Resource utilisation in the global economy will nevertheless gradually rise over the forecast period and inflation will also be higher. In developed countries, the recovery will primarily be driven by household consumption, but later also by stronger investment activity. Growth will be supported by an ongoing expansionary monetary policy. The gradual stabilisation of several emerging market economies that are presently in recession will also contribute towards the successive strengthening of global growth.

The British people's decision to vote for an exit from the European Union means that the EU is now facing what may be its most serious political challenge so far. At the same time, the political situation in the United Kingdom is extremely uncertain with unclear leadership and major splits within the parties. The result of the referendum means that uncertainty over the development of the global economy has increased substantially. However, it is very difficult to assess how large the economic effects will be. In this forecast, growth for the United Kingdom in particular has been revised downwards, but also the rest of the EU is now expected to grow at a slightly slower rate than in the previous assessment from April (see the article "The result of the United Kingdom referendum on the EU creates uncertainty"). Another uncertainty factor for the global economy is the continuing build-up of debt in China which, in the long term, risks leading to a powerful slowdown in the Chinese economy.

Since the Monetary Policy Report in April, the price of crude oil has risen to around USD 50 per barrel (see Figure 4:1). This upturn is primarily deemed to be supply-driven.

Table 4.1.

The forecast in brief
Economic activity abroad is improving but uncertainty over the strength of the recovery is high and has increased substantially as a consequence of the result of the British referendum.
Inflation abroad will rise, but the upturn will be slow, particularly in Europe.
Economic activity in Sweden strengthens with domestic demand as the most important driving force. However, the GDP forecast has been revised downwards since April.
The demand for labour will continue to rise, but recruitment problems will increase and employment growth will gradually slow down and unemployment will level off and show a weak rise.
As resource utilisation rises, inflation will also rise and reach 2 per cent during 2017.

Disruptions to production in Canada and Nigeria, for example, have contributed towards restraining the supply of oil on the world market, as has decreased production in the United States. At the same time, the large reserves seem to have decreased slightly. The higher oil price is contributing towards slightly higher inflation and having a certain negative effect on global GDP growth.

#### Clear downward revision of the forecast for the United Kingdom – slower recovery in the euro area

As a consequence of the British referendum, the GDP forecast for the United Kingdom has been revised downwards by a total of 2 per cent over the forecast period. The effect is expected to be largest in 2017, for which growth has been revised downwards by almost 1 percentage point. The weakening of sterling that has taken place means that inflation will be higher. Nevertheless, market expectations about the Bank of England have shifted in the direction of a more expansionary monetary policy. Monetary policy easing contributes to alleviating the slowdown in the economy.

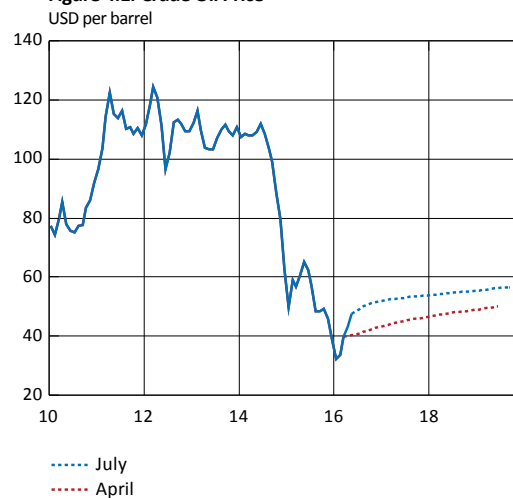
Growth in the euro area strengthened over the year's first quarter but incoming statistics suggest weaker development in the second quarter. In addition, over the coming quarters, GDP growth is expected to slow down further due to the increased uncertainty following the result of the British referendum. GDP in the euro area will increase more slowly in both 2016 and 2017, as compared with last year (see Figure 4:2). At the same time, growth will be supported by continued highly expansionary monetary policy. In addition, fiscal policy is shifting from having been neutral in 2015 towards making a weak positive contribution to growth both this year and next year.

This year, demand in the euro area will primarily be driven by household consumption. Rising employment and low inflation mean that income growth will be relatively good, especially in 2016. The contribution from investment to growth is expected to increase gradually. The need to modernise the capital stock after several years of low investment is considerable and expected to contribute to a gradual recovery in business sector investment. A better balance in the housing market in many countries is also expected to lead to a cautious recovery in housing construction. During the latter part of the forecast period, a somewhat improved international demand is expected to contribute to the recovery.

#### Stronger economic activity in the US after temporary downswing

The US economy slowed down at the end of 2015 and start of 2016. However, going forward growth is expected to be higher, largely driven by household consumption. Rising wage increases and increased recruitment are contributing positively towards income growth, at the same time as higher

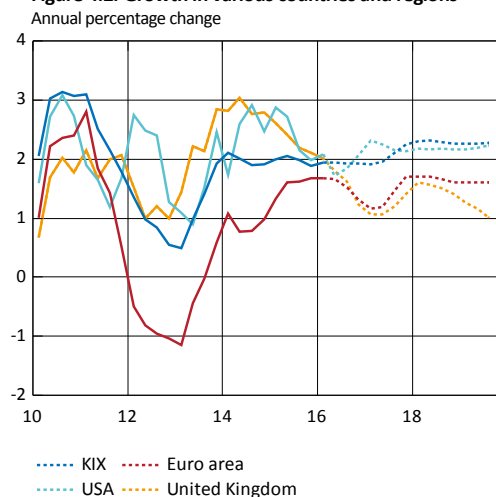
Figure 4:1. Crude Oil Price



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

Sources: Macrobond and the Riksbank

Figure 4:2. Growth in various countries and regions



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



prices for housing are strengthening household wealth. At the same time, the industrial sector has begun recovering from the effects of the previous appreciation of the dollar and cutbacks within the energy sector. The assessment is that a cautious recovery within the industrial sector can be expected in the coming years.

Employment has increased strongly as more people are finding their way into the labour market, at the same time as unemployment has fallen. Recently, however, employment growth has clearly slowed down. This slowdown is expected to be temporary to some extent. Companies' recruitment plans continue to be expansionary, for example. At the same time, it has become more difficult to find suitable personnel for vacant jobs, resulting in rising vacancy figures (see Figure 4:3).

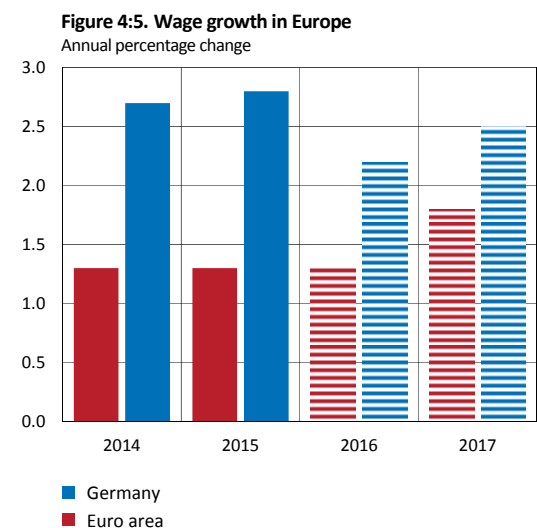
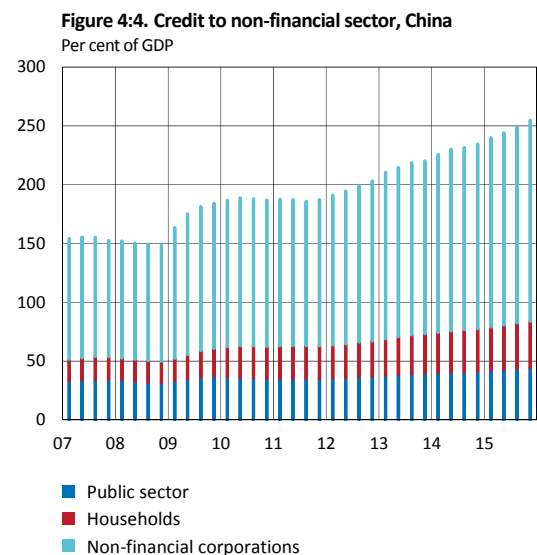
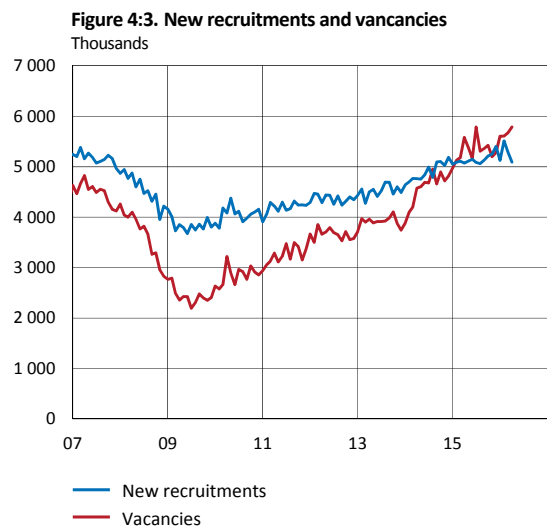
The forecast for growth in Japan has been revised upwards both for this year and the coming two years. The main reason for the upward revision in 2016 is that the outcome for the first quarter was much higher than expected. The revision for the coming two years is mainly connected to the Japanese government deciding to delay the planned VAT increase, from April 2017 to October 2019.

**Large differences between emerging economies**

GDP is continuing to fall in several commodity-producing countries such as Brazil and Russia. However, some stabilisation is expected over the course of 2016 and 2017, among other reasons due to some upturn in commodity prices. Several emerging economies that have benefitted from the low commodity prices, such as India, are continuing to grow rapidly.

The Chinese economy is also expanding at a good, albeit slowing, rate. For China to reach the set target of doubled GDP per capita between 2010 and 2020 will require growth of about 6.5 per cent per year. To help reach this growth target, the authorities have continued to stimulate the economy via increased lending and more investment. At the same time as these measures are supporting growth in the short term, the risks are increasing of a powerful slowdown in the longer term. In particular, the rapid credit growth in the already highly-indebted corporate sector is a growing cause for concern. As a proportion of GDP, lending to non-financial companies has increased by the equivalent of 70 percentage points between 2007 and 2015 (see Figure 4:4). So far in 2016, lending has continued to grow rapidly but, recently, certain signs have been seen of increased risk insight among politicians. The assessment remains that China will slow down gradually and that growth will fall from almost 7 per cent in 2015 to just below 6 per cent in 2018.

Overall, growth abroad, measured in terms of KIX-weighted GDP, is expected to rise from almost 2 per cent this year to nearly 2.5 per cent in 2018. The forecast has been



revised down somewhat for the coming years, largely due to the outcome of the referendum in the United Kingdom.

**Inflation abroad is rising from a low level**

Inflationary pressures abroad are generally low, but in the United States, which is far ahead in the economic cycle, both wages and prices have been increasing at a slightly faster rate for some time. Inflation will continue to rise over the course of 2016 and will then stabilise on a level just over 2 per cent.

In the euro area, inflation has been close to zero in recent months, while underlying inflation has been just below 1 per cent. In the short term, there is little to suggest any clear upturn in underlying inflation in the euro area. Rates of wage increase are still very low. Not even in Germany, where unemployment is at the lowest level in 25 years, are there any clear signs of rising wage increases. On the contrary, IG Metall's guiding agreement, signed in May, indicates lower wage increases in 2016 than in 2015, which can also be seen in the latest wage forecasts from the Bundesbank, for example (see Figure 4:5). There are also signs that the labour market reforms made in several euro area countries have created a downward pressure on wages. In addition, the positive effects of the previous depreciation of the euro are on the way to dropping off, which is also restraining inflation. The assessment is therefore that underlying inflation in the euro area is increasing very slowly, in step with rising resource utilisation, and will reach about 1.5 per cent at the end of the forecast period.

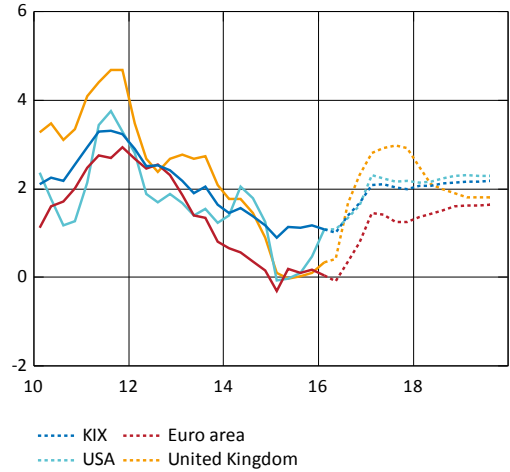
Inflation for the KIX countries as a whole will rise clearly during the second half of 2016, mainly as a result of higher energy prices (see Figure 4:6). On average, inflation is expected to be 1.3 per cent in 2016. Later on, underlying price pressure will also rise when resource utilisation increases and inflation is expected to amount to about 2 per cent in 2017 and 2018, which is to say slightly below the average for this century.

**Sweden**

**Continued Swedish economic upturn**

The Swedish economy is continuing to develop strongly, but growth will gradually become subdued compared with 2015. International demand is certainly increasing slowly from a historical perspective and uncertainty over international economic activity has also increased substantially as a consequence of the outcome of the British referendum. Nonetheless, strong domestic demand is expected to contribute towards a further strengthening of economic activity in the years ahead. Compared with the previous forecast in April, the forecast for the level of GDP is revised down by a total of 0.7 per cent. The downward revision is

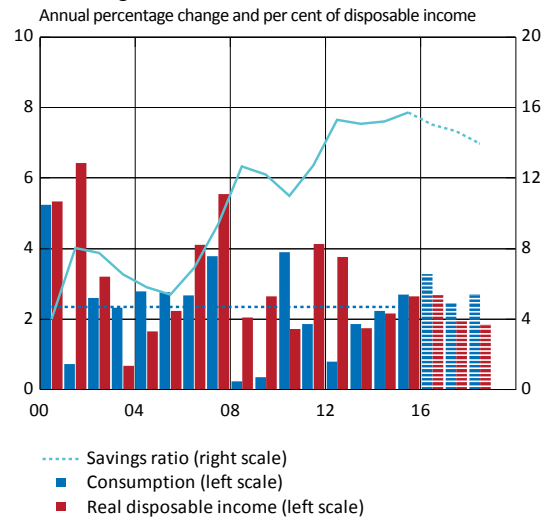
**Figure 4:6. Inflation in various countries and regions**  
Annual percentage change



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

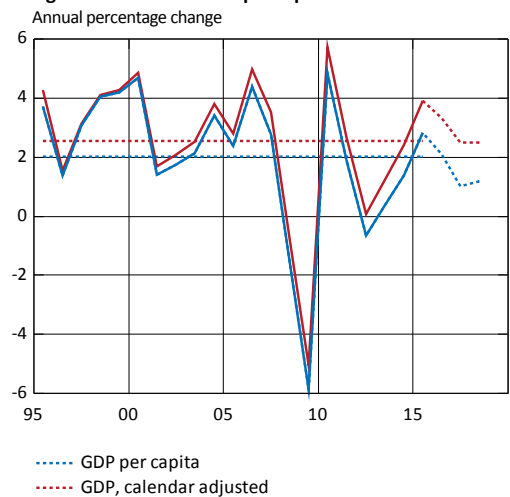
**Figure 4:7. Households' real disposable incomes, consumption and savings ratio**  
Annual percentage change and per cent of disposable income



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

Sources: Statistics Sweden and the Riksbank

**Figure 4:8. GDP and GDP per capita**  
Annual percentage change



Note. Broken lines refer to averages between 1995 and 2015.

Sources: Statistics Sweden and the Riksbank

mainly due to expected negative effects of the result in the United Kingdom referendum.

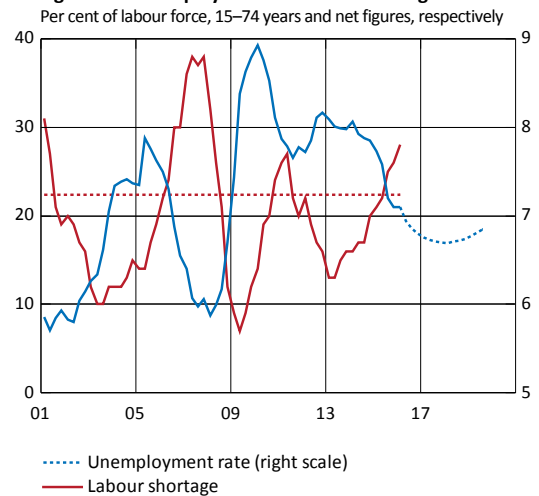
The favourable development of the labour market and increased real incomes are laying the groundwork for the positive development of household consumption. Many households have also seen their wealth increase due to recent years' price increases for housing and equities. Moreover, household saving is high. Mortgage rates will rise towards the end of the forecast period, which will contribute towards restraining the growth of households' disposable incomes. Households will then be expected to cut back on their savings to an extent so as to be able to maintain their consumption (see Figure 4:7). Public consumption will also grow at a relatively rapid rate, above all in 2016, due to costs related to last year's large increase of asylum immigration. In addition, the age composition of the population, with an increasing proportion of children and older people, is contributing towards maintaining public consumption.

International demand is important for growth in Sweden and the international unease in the wake of the referendum in the United Kingdom means that uncertainty around the development of the Swedish economy has increased. International demand has been revised downwards slightly against the previous forecast from April and exports are expected to grow slightly more slowly than the historical average. Export growth is also expected to be weaker in the years ahead compared with 2015, when Swedish exports grew significantly faster than demand on the export markets. This was probably partly a result of the previous depreciation of the Swedish krona. Over the years ahead, the krona is expected to appreciate, meaning that Swedish goods and services will become more expensive in relation to foreign ones. Swedish exports will then be expected to grow more in line with the market.

Business sector investments are expected to increase rapidly in 2016 too. Like last year, housing construction will stand for a significant part of investment growth. The level of housing investment is also deemed to be historically high in the years ahead, but the growth rate will decrease due to capacity limitations and a certain decline in demand for housing. At the same time, the continued rising resource utilisation will mean an increased need for new investments and total gross investments will amount to just over 25 per cent of GDP by the end of the forecast period. This is the highest level since the start of the 1990s and is also a high level in an international comparison.

Although GDP growth is gradually slowing down after the very strong development in 2015, economic activity is continuing to strengthen. The economy is expected to grow by 3.6 per cent in 2016 and then by an average of 2.3 per cent in 2017 and 2018. At the same time, the population is increasing rapidly, meaning that GDP per capita will grow at a significantly slower rate than GDP (see Figure 4:8).

**Figure 4:9. Unemployment and labour shortage**



Note. Broken red line refers to the average of labour shortage from 1996 up to and including the most recent outcome.

Sources: The National Institute of Economic Research, Statistics Sweden and the Riksbank

**Figure 4:10. Employment rate and unemployment rate, born in Sweden**



Source: Statistics Sweden

### High level of housing construction and continued price increases for housing

According to Boverket (the National Board of Housing, Building and Planning), construction of almost 50,000 homes was started in 2015, which is to say about 25 per cent more than in the previous year. At the same time, households' income growth and the low level of interest rates have contributed towards high demand for housing and rapidly rising housing prices, even though the rise seems to have slowed down slightly since the start of the year. As housing purchases are largely funded by loans, the increased turnover has also led to the rapid increase of indebtedness among households.

Housing prices are expected to continue to rise in the years ahead, albeit at a lower rate, among other reasons due to slightly weaker income growth and rising interest rates. Household interest expenditure as a share of disposable incomes is expected to rise from just over 2 per cent in 2015 to around 4 per cent in 2019. The debt-to-income ratio will rise to 195 per cent (see Figure 1:15).

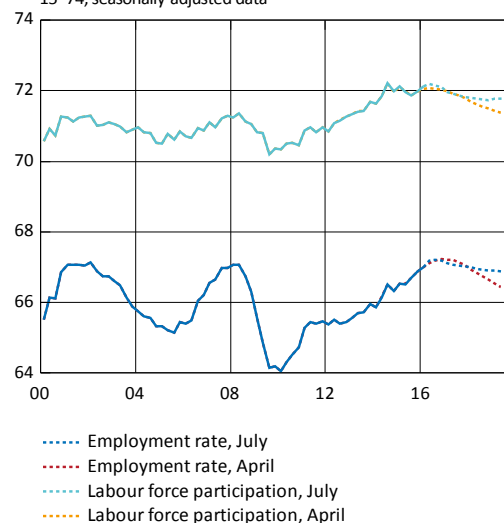
### Rising employment and increased shortage of labour

Demand for labour will continue to increase in the years ahead. However, compared with its development in 2015 and 2016, employment growth is expected to slow down over the next two years. In the first quarter of this year, unemployment amounted to 7.1 per cent and the favourable level of demand in the economy is increasing the possibilities for the unemployed to find work. At the same time, the proportion of companies reporting labour force shortages rose further at the start of 2016 (see Figure 4:9). In addition, the proportion of public sector employers with recruitment problems is increasing, according to Arbetsförmedlingen (the Swedish public employment service). As employment continues to increase, shortages are also expected to increase further in the period ahead. The increased difficulties in recruitment are also expected to lead to a rise in the number of hours worked per employee in the years ahead.

Due to immigration, the population increase among persons of working age will be high in the years ahead, despite a decrease among those born in Sweden. The differences are wide as regards the rate of employment and level of unemployment between different population groups. Among those born in Sweden and in the age group 25–54, the employment rate is already very high and unemployment is low (see Figure 4:10). For the corresponding group born abroad, the employment rate is significantly lower and unemployment is higher. The demographic development towards a greater amount of people born abroad in the population means that the employment rate in the age group 15–74 will start to fall in 2017 as increasing numbers of newly arrived immigrants are registered as part of the population (see Figure 4:11). As it takes some time for newly arrived

**Figure 4:11. Employment rate and labour force participation**

Employment and labour force as percentage of the population, aged 15–74, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

### Wage bargaining rounds 2016 – how did they go?

Agreements have now been signed covering around 2.5 million employees, which means that most of the wage bargaining rounds are complete. A retrospective view shows that wage formation has managed problems of coordination, the questioning of the industrial sector's normative role in wage formation and negotiating partners who initially have held positions far apart. Ultimately, agreements were reached on levels quite close to the historical average, with a high degree of compliance between different contractual areas.

Early on in the wage bargaining process, in October 2015, the Swedish Trade Union Confederation (LO) announced that the unions could not agree on coordinating the demands for the agreements. The trade unions in the industrial sector were the first to present their claims, which were set at 2.8 in one year, which was very similar to the demand in the wage bargaining rounds in 2013. The employers in the industrial sector wanted much lower wage increases, with reference to international competitiveness, for instance. The parties finally agreed on a one-year agreement at 2.2 per cent. The outcome was largely in line with the 2013 agreement, despite the significantly stronger position of the labour market.

Several trade unions presented demands that were just above 3 per cent, that is, more than the industrial sector's wage demands, and in the construction industry the painters' and builders' unions went out on strike, to which the construction industry responded with a lockout. LO and the Confederation of Swedish Enterprise made a joint statement, urging those parties who had not signed an agreement to follow the level set by the industrial sector. The Swedish Building Workers' Union, which had the most comprehensive strike in terms of the numbers involved, reached an agreement of 2.38 per cent to apply for 13 months, after a one week strike. Calculated over a twelve-month period, the agreement gives 2.2 per cent and is thus in line with the industrial sector agreement.

Most agreements apply for 12–13 months. An important exception is the Swedish Municipal Workers' Union's agreement, which runs for three years. The agreement contains an extra investment in assistant nurses, who will receive SEK 500 more than other groups in the first year. The second year the assistant nurses will receive SEK 180 more than the guideline applying and in the third year they will receive SEK 150 more.

immigrants to become established on the labour market, the employment rate for this group is expected to be low in the years ahead. In addition, as more newly arrived immigrants enter the labour force, the decline in unemployment will slow down and then turn faintly upwards. The Riksbank deems that resource utilisation is presently approximately normal and that it will rise further during the forecast period (see Figure 4:12).

#### Rising rate of wage increases in the years ahead

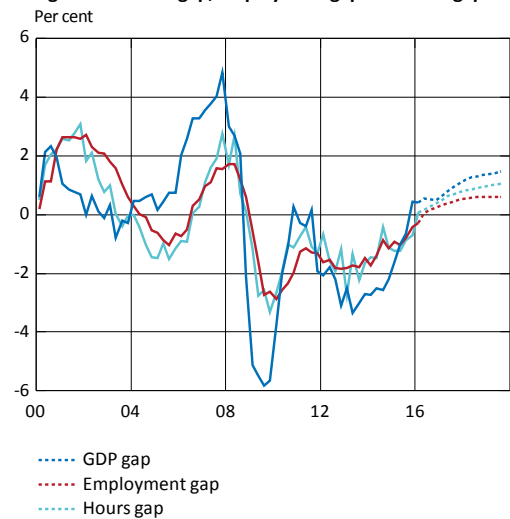
The Riksbank's wage forecasts refer to total wage increases, which is to say collectively-agreed wages and increases over and above these. As collectively-agreed wage increases form a large part of total wage increases, the Riksbank takes consideration of the level of the agreements in its assessment of wage development.

New agreements have been signed for most of the collective agreements that expire this year. The industrial sector was the first, and signed a one-year agreement that involves an increase of labour force costs by 2.2 per cent. Other parties that have concluded agreements have generally agreed on wage increases in line with the industrial sector's agreement. The agreements now being concluded are slightly lower than the historical average.

Wage developments over and above agreements can be affected by several factors. For example, a change in the composition of the labour force may affect wage development. The supply of labour in relation to demand also plays an important role. According to the Tendency Survey of the National Institute of Economic Research, there are labour shortages in several branches of the business sector. Statistics from Arbetsförmedlingen indicate that there is also a shortage of personnel for certain professional groups within the public sector. The Riksbank deems that the shortage of labour will increase further in the years ahead. This is expected to lead to a rise in the rate of wage increases in the period ahead. Wage forecasts have been revised downwards due to the lower-than-expected outcome but are otherwise largely unchanged.

In June this year, the second phase of social security contribution increases for people under the age of 26 was implemented. Moreover, the special wage tax was reintroduced for people over the age of 65. It may be added that some agreements included provisions for occupational pensions. This means that labour force costs, that is, the total of wages and social security contributions, will increase more than hourly wages in 2016. After that, labour force costs are then expected to develop in line with hourly wages. Unit labour costs will increase by just over 2 per cent annually over the forecast period, which is a slightly higher rate of increase compared with recent years (see Figure 4:13).

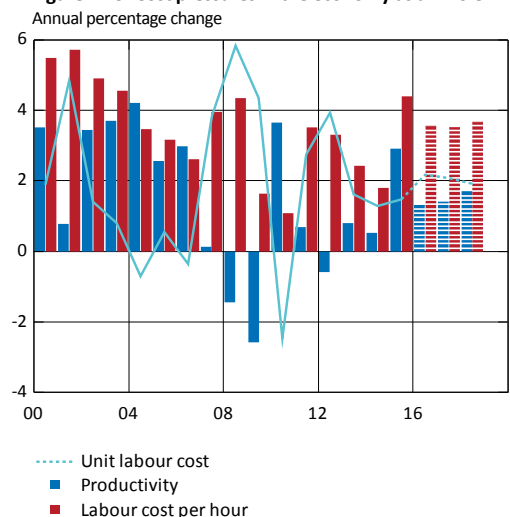
Figure 4:12. GDP gap, employment gap and hours gap



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 4:13. Cost pressures in the economy as a whole



Sources: Statistics Sweden and the Riksbank

### Inflation to reach 2 per cent in 2017

Underlying inflation has been rising since 2014. The upturn is broad and includes faster price increases on goods, food and services. Inflation measured in terms of the CPI has also been increasing since the start of 2016 despite large falls in household interest expenditure, which are still restraining CPI inflation.

Two important reasons for the rising inflation have been the earlier weakening of the krona and rising resource utilisation in the Swedish economy. Both of these factors are also expected to be important to the development of prices in the period ahead. The previous depreciation of the krona has gradually transitioned into an appreciation, meaning that the positive contribution that the exchange rate has made to inflation is gradually shrinking. However, the krona has weakened recently and is assessed to remain weaker over the coming year relative to the forecast in April. At the same time, the increased resource utilisation is increasingly expected to contribute towards rising inflation. The improved economic situation will lead, with some time lag, to companies finding it easier to raise their prices.

Rent increases often covary with changes in interest expenditure and with CPI inflation, albeit with a certain time lag. Considering that both interest rates and CPI inflation have been unusually low, it is thus not surprising that rent increases have also been very restrained. In addition, rental agreements stretching into 2017 also indicate low rent increases next year.

From a short-term perspective, forward prices for both oil and electricity have risen above expectation, but, at the same time, energy prices are expected to increase slightly less in the long term than in the previous forecast. The inflation forecast is also influenced by two methodological changes that together will give slightly higher inflation as of 2017. The right to deduct tax for interest expenditure does not affect the CPI at present but will be included in the calculation in January 2017. This will contribute towards both CPI and CPIF inflation being lower over the forecast years. At the same time, the method for measuring housing expenditure for tenant-owned apartments is expected to be changed and this is, instead, expected to contribute towards higher price increases according to both the CPI and CPIF (see the article “Methodological changes in the calculation of the CPI and CPIF”).

CPIF inflation is expected to increase from just under 1.5 per cent for most of 2016 to close to 2 per cent in the second half of 2017 (see Figure 4.14). This entails a somewhat delayed upturn in inflation in relation to the previous forecast in April. The main reason for this is a changed forecast for the development of energy prices, which will increase more rapidly in the short term and more slowly in 2017. CPI inflation is expected to reach 2 per cent at around the same time as the CPIF. In 2018 and 2019, however, the CPI is

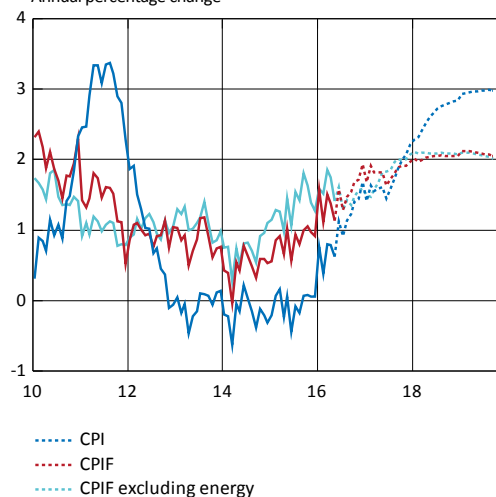
### Methodological changes in the calculation of the CPI and CPIF

At the meeting of the Consumer Price Index Board on 23 May, the decision was taken to include tax relief on interest expenditure in the CPI as of January 2017. This change means that the weight for interest expenditure in the CPI (and CPIF) will be reduced by about 30 per cent. Interest expenditure for residents in single-family houses in the CPI is affected by both the level of mortgage rates (mortgage rate index) and the purchase price of the housing stock (capital stock index). In the calculation of the CPIF, the mortgage-rate index is held constant. A lower weight for interest expenditure means that future interest rate increases will have less of an impact on the CPI, which is to say that the CPI will increase more slowly when the interest rate rises. The rate of increase of the CPIF will also be slightly lower, as the capital stock index, which will increase relatively faster than other prices in the years ahead, will be given a lower weight.

At the same time, the Board has noted that the approach taken towards measuring the cost of living in tenant-owned apartments should be the same as the approach taken for residents of single-family houses in the CPI. Statistics Sweden’s ambition is that a decision on this matter should be taken in 2016 and that the new method should be implemented in 2017. This change means that a cost calculation will replace the current measurement of rent as the cost of living in a tenant-owned apartment. Interest expenditure for residents in tenant-owned apartments will be measured with a mortgage rate index and a capital stock index, as it is for single-family houses. The calculation of the capital stock index will be based on a price index for tenant-owned apartments.

The Riksbank has taken account of both methodological changes in the inflation forecast in this report. A cost calculation for tenant-owned apartments is expected to increase the weight for interest expenditure to an approximately equivalent extent as tax relief on interest expenditure lowers the weight. All in all, the rate of increase in the CPI and CPIF is expected to be scarcely 0.1 percentage points higher during the forecast years when compared with the current method.

Figure 4.14. CPI, CPIF and CPIF excluding energy  
Annual percentage change



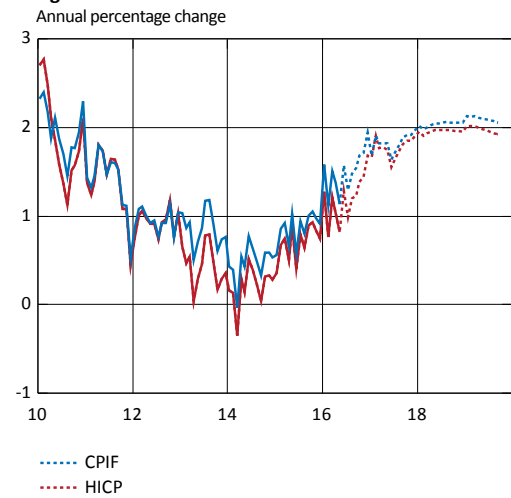
Note. The CPIF is the CPI with a fixed mortgage rate.

Sources: Statistics Sweden and the Riksbank

expected to increase faster than the CPIF. This is because interest expenditure, which has long contributed to lower inflation, will then change over to providing a positive contribution to the CPI. Measured in terms of the EU-harmonised inflation measure HICP, inflation will be lower than CPIF inflation this year, but the difference will be small in 2017 and 2018 (see Figure 4:15).

Compared with the April Monetary Policy Report, the inflation forecast is being revised down for the entire forecast period (see Figures 1:5–1:7). However, as before, CPIF inflation is expected to rise and reach 2 per cent in 2017.

**Figure 4:15. CPIF and HICP**



Note. CPIF is CPI with fixed mortgage rate. HICP is an EU harmonized index for consumer prices.

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

	Q2 2016	Q3 2016	Q4 2016	Q3 2017	Q3 2018	Q3 2019
Repo rate	-0.5	-0.5 (-0.5)	-0.5 (-0.5)	-0.5 (-0.3)	0.1 (0.3)	0.6

Source: The Riksbank

**Table 2. Inflation**

Annual percentage change, annual average

	2014	2015	2016	2017	2018
CPI	-0.2	0.0	1.0 (1.0)	1.7 (1.9)	2.6 (2.9)
CPIF	0.5	0.9	1.5 (1.4)	1.8 (2.0)	2.0 (2.2)
CPIF excl. energy	0.7	1.4	1.5 (1.6)	1.8 (1.9)	2.1 (2.2)
HICP	0.2	0.7	1.2 (1.1)	1.8 (1.9)	2.0 (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)	-0.5 (-0.4)	0.0 (0.2)
10-year rate	1.8	0.8	0.7 (1.0)	1.5 (2.0)	2.5 (2.9)
Exchange rate, KIX, 18 November 1992 = 100	106.7	112.6	109.8 (108.5)	107.4 (106.9)	105.8 (105.7)
General government net lending*	-1.6	-0.1	0.0 (-0.3)	0.1 (-0.3)	0.3 (-0.2)

\* Per cent of GDP

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	1.6	1.5 (1.5)	1.4 (1.7)	1.7 (1.8)
USA	0.16	0.08	2.4	2.4	1.9 (1.9)	2.2 (2.4)	2.2 (2.1)
Japan	0.05	0.02	-0.1	0.6	0.7 (0.4)	1.1 (0.8)	1.1 (0.4)
China	0.15	0.08	7.3	6.9	6.5 (6.4)	6.0 (6.1)	5.9 (6.0)
KIX-weighted	0.75	1.00	2.0	2.0	1.9 (1.9)	2.1 (2.3)	2.3 (2.4)
World (PPP-weighted)	1.00	—	3.4	3.1	3.2 (3.1)	3.5 (3.6)	3.6 (3.7)

Note. Calendar-adjusted growth rates. The PPP-weights refer to the global purchasing-power adjusted GDP-weights, according to the IMF. The Riksbank 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	0.3 (0.2)	1.3 (1.3)	1.5 (1.6)
USA	1.6	0.1	1.3 (1.2)	2.3 (2.3)	2.3 (2.4)
Japan	2.7	0.8	0.1 (0.6)	1.1 (1.9)	1.7 (2.1)
KIX-weighted	1.4	1.1	1.3 (1.3)	2.1 (2.0)	2.1 (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)	-0.2 (-0.1)	-0.1 (0.1)
Crude oil price, USD/barrel Brent	99.6	53.5	45.8 (39.9)	53.0 (45.1)	54.7 (47.9)
Swedish export market	3.1	2.7	2.0 (2.6)	3.0 (4.0)	4.0 (4.4)

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	2.7	3.3 (3.2)	2.4 (3.1)	2.7 (2.8)
Public consumption	1.3	2.6	3.1 (3.6)	2.3 (2.7)	1.5 (1.9)
Gross fixed capital formation	7.5	7.0	6.5 (3.2)	3.1 (3.6)	3.9 (4.1)
Inventory investment*	0.1	0.2	0.0 (0.1)	-0.1 (0.0)	0.0 (0.0)
Exports	3.5	5.9	3.3 (5.9)	3.2 (3.5)	3.9 (3.7)
Imports	6.3	5.5	4.4 (5.2)	3.8 (4.4)	4.7 (5.0)
GDP	2.3	4.2	3.6 (3.7)	2.2 (2.7)	2.4 (2.3)
GDP, calendar-adjusted	2.4	3.9	3.3 (3.5)	2.5 (3.0)	2.5 (2.4)
Final figure for domestic demand*	3.1	3.6	3.9 (3.2)	2.5 (3.0)	2.6 (2.8)
Net exports*	-0.9	0.4	-0.3 (0.5)	-0.1 (-0.2)	-0.2 (-0.4)
Current account (NA), per cent of GDP	4.2	4.8	4.2 (5.3)	3.9 (4.9)	3.4 (4.3)

\*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 (0.9)	1.1 (1.1)	0.9 (1.2)
Potential hours worked	1.0	0.9	0.7 (0.7)	0.6 (0.6)	0.5 (0.6)
GDP, calendar-adjusted	2.4	3.9	3.3 (3.5)	2.5 (3.0)	2.5 (2.4)
Number of hours worked, calendar-adjusted	1.8	1.0	2.0 (1.8)	1.1 (1.2)	0.8 (0.8)
Employed, aged 15–74	1.4	1.4	1.6 (1.6)	1.0 (1.1)	0.7 (0.7)
Labour force, aged 15–74	1.3	0.8	1.1 (1.0)	0.8 (0.8)	0.7 (0.8)
Unemployment, aged 15–74 *	7.9	7.4	6.9 (6.8)	6.7 (6.6)	6.7 (6.7)

\* 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	2.4	2.8 (3.1)	3.3 (3.5)	3.6 (3.5)
Hourly wage, NA	1.8	3.5	3.1 (3.2)	3.5 (3.7)	3.8 (3.7)
Employers' contribution*	0.0	0.9	0.5 (0.5)	0.0 (0.0)	-0.1 (-0.1)
Hourly labour cost, NA	1.8	4.4	3.6 (3.7)	3.5 (3.7)	3.7 (3.6)
Productivity	0.5	2.9	1.3 (1.6)	1.4 (1.8)	1.7 (1.7)
Unit labour cost	1.3	1.5	2.2 (2.1)	2.1 (1.9)	1.9 (1.9)

\* 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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