

# Monetary Policy Report

April 2017





## 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 26 April 2017. 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

Since the February Monetary Policy Report was published, there have been further signs that the international economic upswing is continuing, in line with the Riksbank's forecasts. However, there is considerable uncertainty and there are several risks of setbacks. The overall picture of a positive development in the Swedish economy still stands. Resource utilisation is assessed as higher than normal and economic activity is expected to continue to strengthen in the coming years.

However, inflation is still too low and is only expected to show a moderate increase in the coming year. New information indicates that cost pressures will rise more slowly in relation to the earlier assessment and the inflation forecast has therefore been revised down. Inflation is now expected to stabilise around 2 per cent at the beginning of 2019. Lower inflation means that monetary policy needs to be somewhat more expansionary. The considerable uncertainty over economic and political developments abroad is also important for the stance of monetary policy. The Executive Board has decided to hold the repo rate unchanged at –0.50 per cent and to extend the purchases of government bonds by SEK 15 billion during the second half of 2017. The Executive Board moreover assesses that the repo rate needs to be held at the current low level for a quarter longer than was assumed in February. The first repo-rate increase is now expected to be made in the middle of 2018. The forecast for the repo rate path also reflects the fact that there is still a greater probability of the rate being cut than of it being raised in the near term. The expansionary monetary policy underlines the Riksbank's aim to safeguard the role of the inflation target as anchor for price-setting and wage formation.

### Global economic upswing, but risk of setbacks

The international economic upswing is continuing at a moderate pace, but includes an increasing number of countries. The global economy is in a phase with increasingly strong industrial activity and rising global trade. Forward-looking indicators such as the Purchasing Managers' Index and consumer confidence point to rising optimism in the household and corporate sectors. The cyclical recovery in industrial output and foreign trade is expected to contribute to the upturn in economic activity broadening and investment strengthening.

However, the political situation in several parts of the world makes it more difficult to predict economic and political developments (see the scenario "The significance of international developments for monetary policy"). In the United States, there is still considerable uncertainty over the shaping of their economic policy. The Riksbank's forecast assumes, as in December and February, that certain tax cuts and infrastructure investments will be implemented. GDP growth in the United States is expected to be on average 2.2 per cent a year in 2017–2019.

In the euro area, several countries are still struggling with a large share of non-performing loans in their banking sectors. In addition, there is political uncertainty over coming elections as

**Table 1.1.**

Important factors for monetary policy
The global economic upswing is expected to continue. Great uncertainty however means there is a risk of setbacks.
Central banks around the world are in different phases with their monetary policy. The Federal Reserve is expected to continue to increase the policy rate this year while the ECB continues with its asset-buying programme.
Economic activity in Sweden is increasingly strong – resource utilisation is somewhat higher than normal and is expected to rise further.
Long-term inflation expectations are close to 2 per cent again, but inflation is not expected to stabilise around 2 per cent until the beginning of 2019.
The krona is weaker than the Riksbank's forecast in February. A slow appreciation is expected in the period ahead.
Monetary policy needs to be somewhat more expansionary to give support to inflation. The repo rate is retained at –0.50 per cent, the first increase is postponed by one quarter, and the purchases of government bonds are being extended by SEK 15 billion during the second half of 2017.

**Table 1.2.**

Important forecast revisions
The krona exchange rate is expected to be weaker throughout the forecast period.
The collective wage agreements that have been signed imply that the rate of wage increase is expected to be somewhat lower in the coming years than was previously forecast.
The inflation forecast has been revised down for 2018 and 2019 as a result of cost pressures being assessed as lower than has been forecast earlier.

the electoral support for political parties wanting to break up or radically change the EU has increased. However, the uncertainty is not visible in confidence indicators. The United Kingdom has now officially applied to leave the EU and it has recently been decided that a new parliamentary election will be held in June. However, it is difficult to assess the effects of the political uncertainty on the economy. GDP growth in the euro area is expected to be 1.8 per cent in 2017 and then to fall somewhat over the coming years.

All in all, strong outcomes and positive indicators point to global growth in line with the Riksbank's assessment in February. Global growth is expected to increase from 3.1 per cent in 2016 to 3.7 per cent in 2019. GDP growth in the countries that are most important for the Swedish economy (KIX-weighted) is expected to rise from about 2 per cent in 2016 to just over 2.2 per cent in 2017 to 2019.

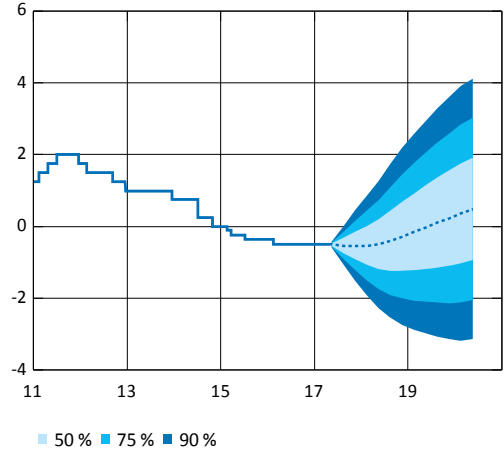
International inflation has risen over the past six months, which is primarily due to rapidly rising energy prices. Better economic prospects and limits to oil production have pushed up the oil price. However, underlying inflationary pressures are still low in many areas, particularly in the euro area. A gradually higher level of resource utilisation implies that underlying inflation is expected to increase. CPI inflation (KIX-weighted) is expected to be 2 per cent on average over the forecast period.

The larger central banks continue to conduct expansionary monetary policy, but are in different monetary policy phases. The US Federal Reserve raised the interval for its policy rate by 0.25 percentage points, to 0.75–1.0 per cent, at its monetary policy meeting in March. The median of the forecasts made by the members of the monetary policy committee indicates two more rate rises in 2017, which is what the market is expecting. Since the Federal Reserve concluded its asset purchases in autumn 2014, they have continued reinvesting securities that have matured, which has meant that the size of the balance sheet has remained largely unchanged. At the March monetary policy meeting, the Federal Reserve repeated the message that these reinvestments will continue until the rate increase cycle is well under way. The ECB held its monetary policy unchanged at its March meeting. The deposit rate, which is currently the rate that controls the overnight rate in the euro area, was left at –0.40 per cent and asset purchases are to continue during the whole of 2017, in line with the previously announced plan. The ECB has announced that its deposit rate will remain at an unchanged or lower level for a long period of time and well beyond the conclusion of the asset purchase programme.

**Strong Swedish economic activity**

Swedish economic activity is strong and is expected to strengthen further during the forecast period (see Figure 1:2). GDP growth in the fourth quarter of 2016 was just over 4.2 per cent when calculated as an annual rate and compared to the third quarter. Export growth was better than expected, while domestic demand grew somewhat more slowly than expected. Confidence

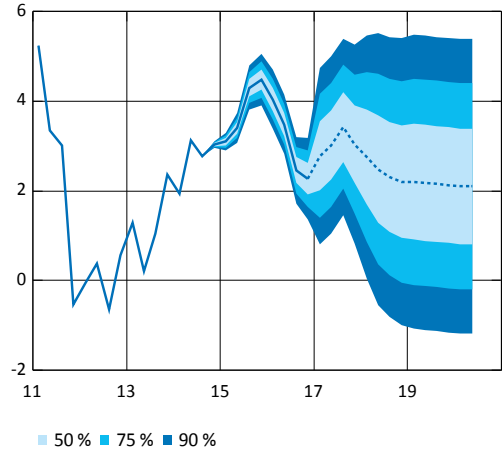
**Figure 1:1. Repo rate with uncertainty bands**  
Per cent



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

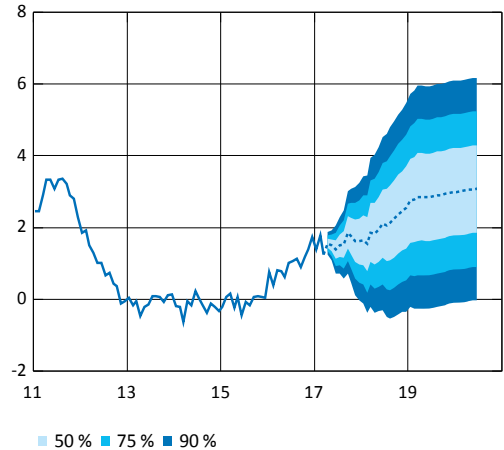
**Figure 1:2. GDP with uncertainty bands**  
Annual percentage change, seasonally-adjusted data



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**  
Annual percentage change



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

Sources: Statistics Sweden and the Riksbank



indicators show that households and companies are optimistic and demand for exports is still strong. Better outcomes than expected and strong indicators mean that the growth forecast has been revised upwards somewhat in the near term in relation to the previous forecast. Overall, GDP is expected to grow by 2.8 per cent this year, and by just over 2 per cent per year in 2018–2019.

At the beginning of the year, both the labour force and employment increased faster than expected, and unemployment has been somewhat lower than the Riksbank's forecast. The economic upturn implies that the demand for labour is still strong. The percentage of companies reporting labour shortages and the percentage of job vacancies that need to be filled immediately is at a high level. Growing matching problems in the labour market are expected to slow down growth in employment going forward. Resource utilisation is higher than normal and is expected to rise further, as growth is somewhat faster than normal.

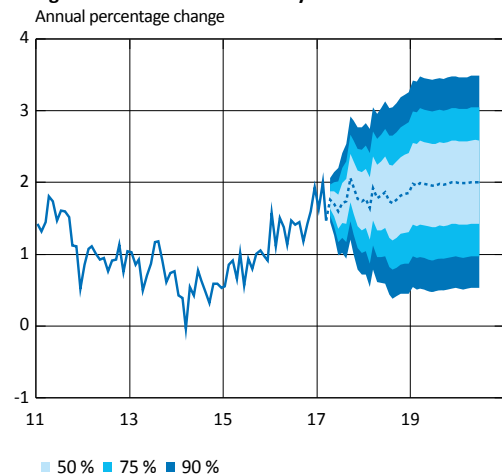
The strong economic activity is assessed to lead to a rise in the rate of wage increase in the coming years. However, the collective wage agreements signed between the social partners in the manufacturing sector indicate that the rate of wage increase will be lower in the coming years than was previously forecast.

#### Slow upturn in inflation

In March, inflation was 1.3 per cent measured in terms of the CPI, 1.5 per cent when measured as the CPIF and 1.0 when measured as the CPIF excluding energy (see Figures 1:3–1:4). This outcome was slightly lower than the forecast in February. It is deemed that most of the forecasting error can be explained by temporarily weak development in some particularly volatile CPI components, primarily foreign travel and vegetables. At the same time, the more sluggish prices for services increased slightly faster than expected. The inflation forecast has therefore been changed only marginally with regard to the coming months. The weakening of the krona last year and the rise in resource utilisation mean that inflation measured as the CPIF excluding energy will rise in the near term. As the rate of increase in energy prices will at the same time slow down, CPIF inflation is expected to remain largely unchanged.

The krona has been weaker than the Riksbank's forecast since the monetary policy meeting in February. Going forward, the krona is expected to remain at a weaker level, but to still strengthen slowly (see Figure 4:14). This will slow down inflation further ahead. At the same time, the strong economic activity in Sweden and rising international price pressures mean the conditions are right for higher inflation in the coming years. CPIF inflation is expected to stabilise around 2 per cent at the beginning of 2019. The lower rate of wage increase and the weaker krona in relation to the previous forecast partly offset one another, but all in all mean that the forecast for inflation in 2018 and 2019 is somewhat lower.

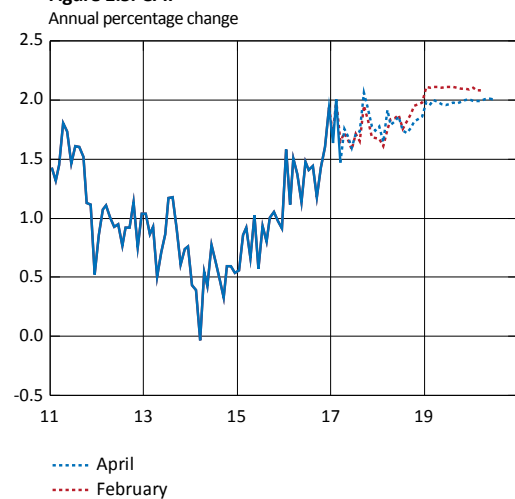
**Figure 1:4. CPIF with uncertainty bands**



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

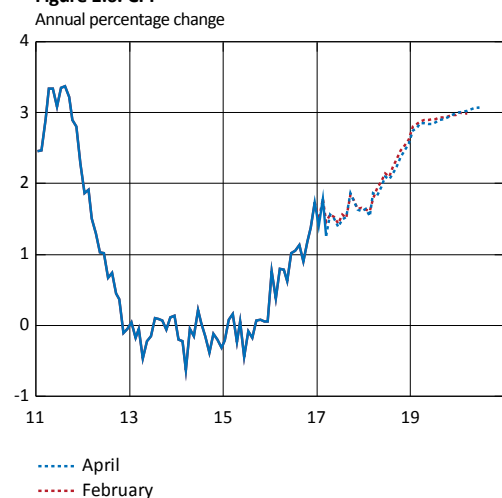
**Figure 1:5. CPIF**



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

## Current monetary policy

Swedish monetary policy has for a long time been conducted in an environment characterised by uncertain international economic developments, low global interest rates and weak inflationary pressures. The aim of the expansionary monetary policy is that inflation in Sweden will stabilise around the target of 2 per cent and that inflation expectations shall be compatible with the inflation target. High confidence in the inflation target creates the conditions for efficient price-setting and wage formation, thereby contributing to good economic development. Given these circumstances, the Riksbank has gradually cut the repo rate to  $-0.50$  per cent and carried out extensive purchases of government bonds.

A review shows that monetary policy has had a clear impact on short-term and long-term interest rates and on the krona exchange rate (see the article “The effects of monetary policy on financial variables”). Since the beginning of 2014, inflation has risen, long-term inflation expectations are again close to 2 per cent, and Sweden has good growth and falling unemployment. Monetary policy is considered to have contributed to this development.

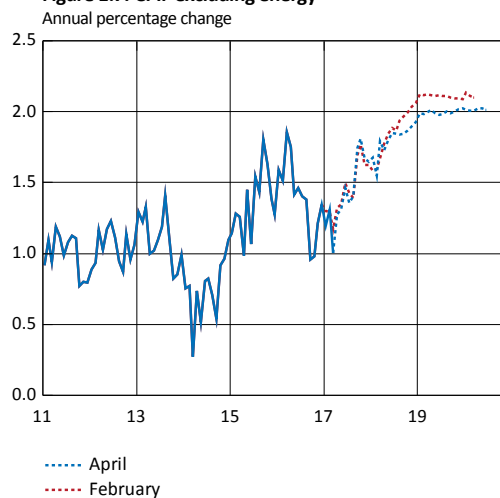
### Monetary policy trade-off: continued strong economic activity but slower rise in inflation

Since the February Monetary Policy Report was published, there have been further signs, as mentioned above, that the international economic upturn is continuing. In several parts of the world there is considerable political uncertainty, which creates risks for economic developments, but expectations in the household and corporate sectors are still positive. International developments have been in line with the Riksbank’s earlier forecasts and although there are several risks of setbacks, the outlook for the coming years is largely unchanged.

The overall picture of a positive development in the Swedish economy still stands. If anything, outcomes and indicators for both growth and the labour market are on the whole pointing towards a brighter outlook at present, in relation to the earlier assessment. Resource utilisation is assessed as higher than normal and to continue to strengthen in the coming years.

Stabilising inflation around 2 per cent requires continued strong economic activity. When demand in the economy is high, companies’ production costs normally rise and companies also find it easier to raise their prices. At the same time, the normative wage agreements concluded between the social partners in the industrial sector for wages in the coming three years indicate that cost pressures in the economy will rise slower compared to the earlier assessment. The Riksbank has therefore revised down the forecasts for inflation in 2018 and 2019 and inflation is not expected to stabilise around 2 per cent until the beginning of 2019 (see Figures 1:5 and 1:7). Lower cost pressures despite increasingly strong economic activity could be due to several different factors, such as structural changes in the

Figure 1:7. CPIF excluding energy



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

Sources: Statistics Sweden and the Riksbank

### Risks from too low inflation

The expansionary monetary policy has a clear focus: that inflation shall rise and stabilise around the target of 2 per cent. The inflation target has been an important condition for the in many ways favourable developments in the Swedish economy since the early 1990s. With a shared perception of how prices will develop in the future, it is easier for economic agents to plan for the long term and the coordination of expectations lays the foundation for efficient price-setting and wage formation. Persistently below-target inflation increases the risk of economic agents adjusting their expectations and starting to assume that inflation will not return to the target even in the longer term. With an inflation rate and inflation expectations that are continuously below the target, the nominal interest rate will also be lower on average. A lower average nominal interest rate increases the risk that the repo rate will reach its lower bound, in the same way as if the target was lower than 2 per cent. This reduces the Riksbank’s leeway for cutting the repo rate in the future if inflation becomes low or economic activity wavers. A too low inflation rate can moreover make it more difficult to adapt real wages between individuals in the same company and between different industries, as nominal wages usually rise and are rarely lowered. This could entail poorer functioning of the labour market and higher unemployment.

economy, price-setting and wage formation having adapted to a longer period of low inflation, or to the financial crisis still affecting wages and prices around the world. If the cause is structural changes, lower cost pressures could prove to be a more lasting phenomenon. These are important questions and the Riksbank will continue to monitor and analyse them.

For inflation to stabilise around 2 per cent, a continued high level of resource utilisation is needed in the economy as well as ensuring that there is no rapid krona appreciation to counteract the upturn in inflation. Since the monetary policy decision in February, the krona has been weaker than anticipated and the Riksbank assesses that the krona will appreciate slowly going forward, as economic activity continues to improve.

All in all, economic prospects are thus still good. This indicates that monetary policy should not be changed at present. But at the same time, it is expected to take longer for inflation to stabilise around 2 per cent and there is still considerable uncertainty regarding economic and political developments abroad. Given that inflation has been below the target level for a long time, there is thus a risk that inflation expectations will be affected negatively, which would make it even more difficult to stabilise inflation around the target. This would indicate that monetary policy needs to be more expansionary.

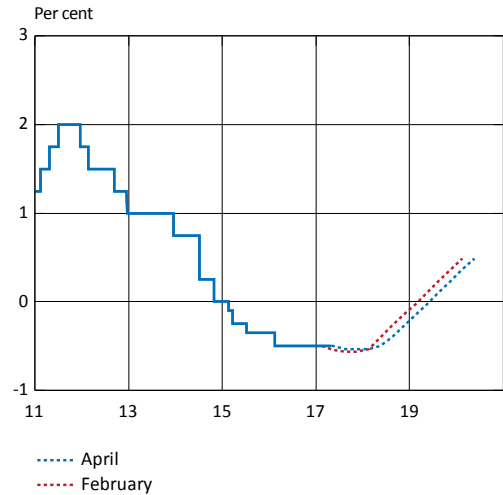
So far, the negative side-effects of monetary policy have been relatively limited, but an even more expansionary monetary policy could increase the risk of such effects. A more expansionary monetary policy could also contribute to inflation rising faster and thereby reduce the period with a low interest rate and in this way reduce the risk of negative side-effects.

**Somewhat more expansionary monetary policy to support inflation**

The need for a continued rising trend in inflation and inflation expectations that are anchored around the target in the long run leads to the conclusion that monetary policy currently needs to become somewhat more expansionary. The repo rate is held unchanged at -0.50 per cent, the purchases of government bonds are extended during the second half of 2017 and the first repo rate raise is expected to come one quarter later. The repo rate path also reflects the fact that there is still a greater probability that the rate will be cut than that it will be raised in the near future (see Figure 1:8). Slow increases in the repo rate are expected to begin in the middle of 2018. The forecast means that, in the years ahead, the repo rate will be much lower than the long-term normal level.<sup>2</sup>

The bond purchases are extended by further purchases of nominal government bonds for SEK 7.5 billion and real government bonds for SEK 7.5 billion. At the end of 2017, the purchases of government bonds will thus amount to a total of SEK 290 billion, excluding reinvestments (see Figure 1:9). Until further notice, maturities and coupon payments on the

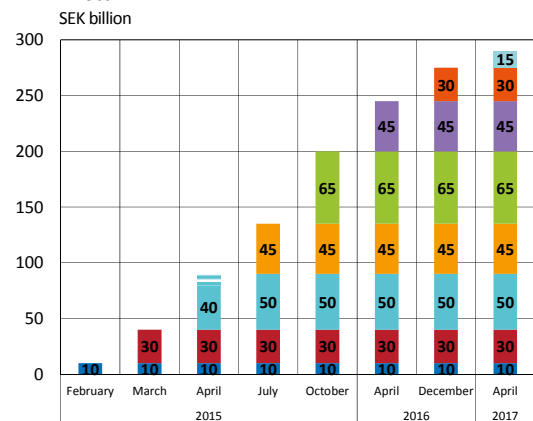
**Figure 1:8. Repo rate**



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

Source: The Riksbank

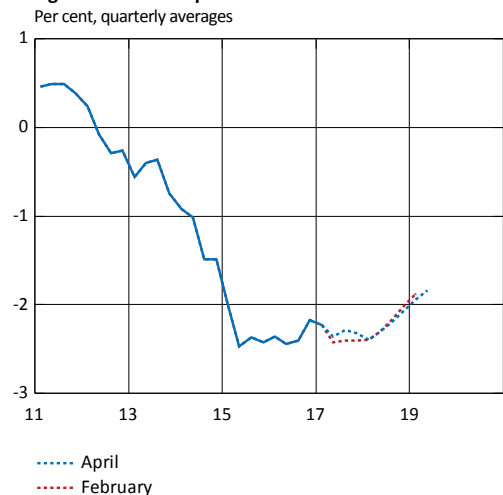
**Figure 1:9. Purchases of government bonds decided by the Riksbank**



Note. Purchases of government bonds, excluding reinvestments, will continue until the end of 2017.

Source: The Riksbank

**Figure 1:10. Real repo rate**



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

Sources: Statistics Sweden and the Riksbank

<sup>2</sup> See also the article "The long-term repo rate" in the Monetary Policy Report of February 2017

government bond portfolio will be reinvested. During 2017, these maturities and coupon payments will amount to around SEK 30 billion, largely in nominal government bonds, and reinvestments are planned to continue throughout the year.

Just as in many other countries in the world, Swedish monetary policy is thus very expansionary and will remain so in the coming years. The real repo rate is expected to be negative throughout the forecast period (see Figure 1:10).

#### Limited side-effects of monetary policy

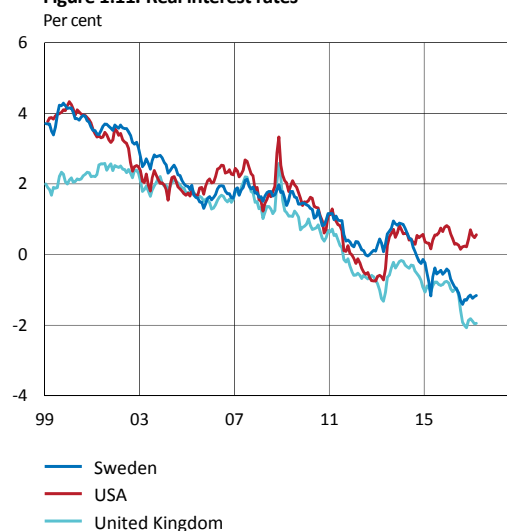
The monetary policy conducted by the Riksbank in recent years, with a policy rate below zero and extensive asset purchases, has been very expansionary in an historical perspective. The policy is largely a consequence of a global declining trend in nominal and real interest rates (see Figure 1:11). The Riksbank is constantly analysing the effects of its monetary policy and is naturally eager to identify any undesirable side-effects at an early stage.

One possible consequence of low and negative interest rates is that they can create incentives for substantial risk-taking in the economy. In Sweden, it is first and foremost the developments on the housing market that cause concern.<sup>3</sup> As described later on in this chapter, housing prices have risen substantially in recent years, and household indebtedness has risen in line with housing prices.

When the repo rate was cut below zero and the Riksbank began purchasing government bonds, there were fears that this would have a negative effect on the functioning of the financial markets. In general, however, the financial markets have so far been able to manage the negative interest rate relatively smoothly.<sup>4</sup> With regard to the purchases of government bonds, the Riksbank now holds around 40 per cent of the outstanding stock of nominal government bonds in SEK. This means that a relatively large proportion of the stock is not available for trade on the market, which could influence the functioning of the market. However, the overall assessment is that the Swedish government bond market is still functioning relatively well. The Swedish National Debt Office, which has a good insight into the functioning of the market, also assesses that it is functioning in a satisfactory manner.<sup>5</sup> In addition, there are other factors, such as regulation, that affect liquidity in the market.

Cash withdrawals could increase if households, companies and other parties face negative interest rates on their deposits, as cash gives zero per cent interest and could therefore be a more attractive alternative. Excessively large and rapid cash withdrawals could create risks in the financial system. But at present neither households nor most companies have negative

Figure 1:11. 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

<sup>3</sup> See also Financial Stability Report 2016:2.

<sup>4</sup> However, there have been some exceptions. For instance, many bonds with variable coupons, so-called FRN bonds, gained negative coupons when the reference rate became negative. This means that the investor should actually pay a coupon to the issuer rather than the other way around. But so far, no investors have needed to pay for the coupon in the cases where it has been negative. Currently the coupons on FRN bonds have a supplement to avoid the coupon becoming negative.

<sup>5</sup> See the report "Central government borrowing: Forecast and analysis 2017:1", Swedish National Debt Office.

interest rates on their deposits. On the other hand, there are some larger corporations and some municipalities who have to pay for their bank deposits.<sup>6</sup> However, these companies and municipalities can often in turn borrow money at a negative interest rate, which means they are better equipped to manage bank deposits at a negative interest rate than smaller agents. At present, around 13 per cent of the deposits from non-financial corporations are at negative interest rates. So only a relatively small share of deposits are covered. At the same time, there are no signs that cash holding has increased as the repo rate has been cut, instead the demand for cash has declined steadily over several years.

Negative interest rates could to some extent also reduce the banks' profitability, which could ultimately lead to higher lending rates and a reduced credit supply and thereby counteract the intended effect of monetary policy. However, Swedish banks' profitability has remained high and stable in recent years. The high profitability is partly explained by continued low loan losses. It has also been possible to maintain the results thanks to somewhat larger income from other operational areas, such as asset management and advice, and a relatively high credit growth, especially with housing and property as collateral.<sup>7</sup>

Furthermore, the Riksbank does not see any signs that the negative repo rate is being interpreted as a crisis signal and thus creating unease and dampening demand. Domestic demand has been an important driver of improved economic activity in Sweden, and sentiment among households and companies is more optimistic than normal according to various confidence indicators.

## Uncertainty and risks

Forecasts of future economic developments are always uncertain, as illustrated by the uncertainty bands in Figures 1:1–1:4. In the Riksbank's forecasts, the risks of both more and less favourable development shall in principle be balanced. It is difficult, however, to assess the likelihood of future events and the consequences they might have should they occur.

It is moreover not obvious how monetary policy should relate to 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.

Although the Swedish economy is currently well-equipped, negative surprises can occur in the future that make it necessary to adapt monetary policy further. The Riksbank therefore is still prepared to make monetary policy even more expansionary if

### 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. 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. Further information on various measures of inflation and related issues can be found in the Riksbank Study "The Riksbank's inflation target – target variable and interval" (September 2016).

<sup>6</sup> In practice, this is done in the form of a deposit fee, which means that it is not captured in the interest statistics. However, the banks report the fees in their net interest income.

<sup>7</sup> See also the article "How do low and negative interest rates affect banks' profitability?" in Monetary Policy Report, April 2016.

the upward trend in inflation were to be threatened and confidence in the inflation target weakened. All of the tools that the Riksbank has described earlier, most recently in the September 2016 Monetary Policy Report, can as always be used if necessary.

### **Uncertainty surrounding the inflation forecast**

Outcomes and indicators have on the whole developed in line with the forecasts since February. However, the political situation in some parts of the world contributes to making the geopolitical situation unstable and this makes it difficult to predict economic developments. The policies announced by the US president will probably lead to less trade with other countries and less migration into the United States. Such a development could entail a lower global economic growth, primarily in the somewhat longer run (see also the article “Economic consequences of increased protectionism” in this report). More protectionism and thereby higher import costs and lower competition could at the same time lead to higher global inflation. The United Kingdom's decision to leave the EU could have similar consequences.

In Europe, the political situation in several countries contributes to creating uncertainty over economic policy. During the spring, presidential elections will be held in France and parliamentary elections will be held in the United Kingdom, while Italy will hold parliamentary elections some time before May 2018. These elections will have an important bearing on whether the development towards a more introvert economic policy is further reinforced. There are strongly EU-critical parties in both France and Italy, whose agendas include proposals for referendums to leave the EMU. Higher government bond yields in euro countries which have a high national debt in relation to GDP and are struggling with structural problems reflect the fact that the perceived risk has increased. The scenario “The significance of international developments for monetary policy” in this report describes how monetary policy in Sweden could be affected if economic developments abroad are weaker than in the main scenario. In addition to the political risks, developments in the banking sector in the euro area are already an important risk factor. The banks in some countries have long faced problems of poor profitability and a large percentage of non-performing loans. These are just some examples of important international risks that the Riksbank and other central banks need to monitor closely, as unfavourable developments could rapidly change the conditions for monetary policy.

The fluctuations in the krona over the past year illustrate the very uncertain nature of exchange rate forecasts. A large and rapid appreciation of the krona would hold back import prices and demand, which would make it more difficult to reach the inflation target at the pace now anticipated by the Riksbank. The problems could be particularly serious if confidence in the inflation target was to once again weaken. This risk is particularly high given that inflation has been low for a longer period.

The relationship between the krona's development and inflation is largely dependent on what causes the exchange rate movements.<sup>8</sup> If the krona strengthens as a result of a global economic upturn and increasing demand for Swedish exports, then GDP growth in Sweden will rise at the same time. Higher demand will then mean that inflation can rise despite a stronger exchange rate.

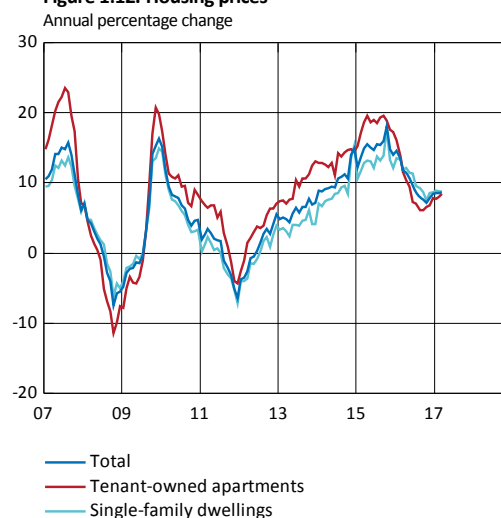
Resource utilisation is continuing to increase and is expected to be higher than normal during the forecast period. According to historical correlations, wages should therefore increase at a faster pace and inflation should become higher going forward. But despite the situation on the labour market being assessed as increasingly strained, the normative collective agreements signed by the social partners recently indicate that cost pressures will rise more slowly than the Riksbank has previously forecast. This illustrates the difficulty of knowing how quickly resource utilisation will affect the rate of wage increase and inflation.<sup>9</sup> Especially if there have been structural changes in the economy or price-setting and wage formation have adapted to a long period of low inflation it can take time before economic activity has an impact on wages and prices. But if this is more a question of remaining cyclical effects from the financial crisis, it is possible that wages and prices may rise faster than expected when these effects wane.

Economic developments could also be stronger than forecast. Recently, the real economy has strengthened relatively quickly both abroad and in Sweden. If this development were to continue, resource utilisation and thus inflation may be pushed up fairly quickly. However, inflation has been below target for a long time and, inflation temporarily exceeding the target would not necessarily mean that monetary policy must be made less expansionary in the near future. This is also illustrated in the scenario "The significance of international developments for monetary policy" in this report.

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

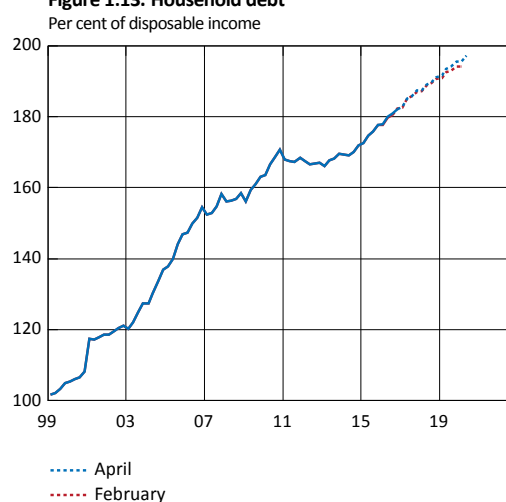
Many asset prices and particularly housing prices have risen substantially in recent years, and household indebtedness has risen in line with housing prices (see Figures 1:12 and 1:13). The high and increasing indebtedness could jeopardise financial and macroeconomic stability. A combination of measures in different policy areas is needed to attain a long-run sustainable development for the Swedish economy with stable economic activity and inflation. This is particularly important as interest rates are expected to remain low for a long time. Targeted measures are required within the housing and taxation policy areas. In the short term, there may be a further need for macroprudential policy measures, for instance, the introduction

Figure 1:12. Housing prices



Source: Valueguard

Figure 1:13. Household debt



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

Sources: Statistics Sweden and the Riksbank

<sup>8</sup> See also the article "The impact of the exchange rate on inflation" in the Monetary Policy Report, December 2016.

<sup>9</sup> See also the article "The relationship between resource utilisation and inflation" in the Monetary Policy Report, October 2016.



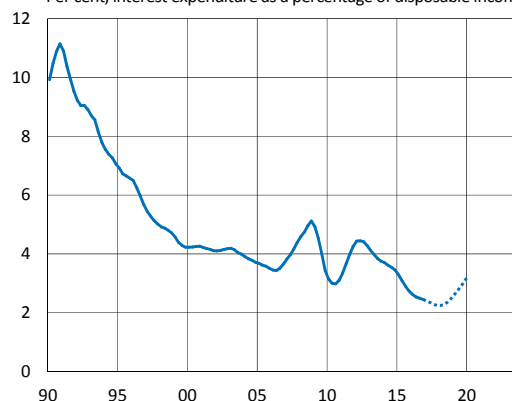
of a debt-to-income limit that restricts how much a household may borrow in relation to its income. Another feasible measure is to review the regulatory framework to give banks a greater incentive to provide loans with long interest-rate fixation periods, and give households a greater incentive to choose such loans. The Riksbank has also stated that it is important that Finansinspektionen's assignment and goals for macroprudential policy, and the process for allocating tools to Finansinspektionen, should be clarified and set out in law.<sup>10</sup>

High indebtedness in combination with most loans having a variable interest rate makes households highly sensitive to interest rate changes. Their interest expenditure as a share of disposable income may change relatively substantially in the period ahead even if changes in the repo rate are relatively small (see Figure 1:14). At the end of the forecast period, the repo rate is expected to have risen by one percentage point from its current level. An increased percentage of loans at fixed mortgage rates would make households' finances less sensitive to rising interest rates.

A large increase in the repo rate would certainly slow down the build-up of debts but would also lead to higher unemployment, a much stronger krona and lower inflation. Other measures more specifically aimed at reducing the risks associated with household debt have less negative effects on the economy as a whole. Socioeconomic imbalances are expected to increase unless further measures are taken. This may ultimately be very costly for Sweden's economy.

**Figure 1:14. The Swedish households' interest ratio**

Per cent, interest expenditure as a percentage of disposable income



Sources: Statistics Sweden and the Riksbank

<sup>10</sup> On 23 February, the Swedish Ministry of Finance presented a bill that aims to give Finansinspektionen further tools for macroprudential policy, which the Riksbank welcomes. According to the proposal, Finansinspektionen's regulations regarding the application of tools shall be subject to the Government's consent. The Riksbank considers that there are better ways of meeting the Government's need for control while at the same time safeguarding the necessary scope for flexibility and for Finansinspektionen to be able to take rapid action. See further "Consultation response on the Memorandum Further tools for macroprudential policy", 18 April 2017. Sveriges Riksbank.



## ARTICLE – The significance of international developments for monetary policy

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The economic upswing in the global economy is continuing and includes an increasing number of countries. In the past six months, outcomes and indicators have provided grounds for increased optimism and it is possible that the strength of the economic upturn is being underestimated. At the same time, however, there are risks of setbacks linked to developments in economic policy abroad. This article describes how two alternative scenarios for international developments can affect economic developments in Sweden. The fact that inflation has been low for a long time means that a weaker economic development in Sweden than in the main scenario could have a greater impact than normal on confidence in the inflation target. Lower inflation than in the main scenario is hence a more troublesome scenario than one in which inflation temporarily overshoots the inflation target. If the economy were to develop more weakly than expected, the Riksbank can take a number of different measures to make monetary policy more expansionary. If the development were instead to be stronger than in the main scenario, the low inflation of recent years is an argument in favour of a more cautious adjustment of monetary policy than normal.

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### **Economic recovery fraught with political risks**

The global economy is in a recovery phase. In 2016, global GDP grew by 3.1 per cent and growth this year is expected to be 3.4 per cent. After several years of surprisingly low growth, recent outcomes have been more in line with expectations. Furthermore, forward-looking indicators, such as the global purchasing managers' index and consumer confidence, have strengthened since 2016. Predicting turning-points in the economy is difficult and it is possible that the strength of the economic upturn is being underestimated.

At the same time, the political situation in many parts of the world makes economic and political development difficult to predict. Support for anti-EU political parties in Europe is, for example, greater than it has been for some considerable time and the agendas of these parties, should they be realised, have the potential to radically change economic policy. Examples include Front National in France and the so-called Five Star Movement in Italy. There is also uncertainty in the United States regarding the shaping of economic policy, and of financial and trade policy in particular.

There are therefore both upside and downside risks to international development. Here they are illustrated by means of two alternative scenarios that relate to Europe but could more generally be used to illustrate risks in other parts of the world economy, too. The main purpose is to discuss how monetary policy could be shaped, given the current strong economic situation and that inflation has at the same time been low for a long time.

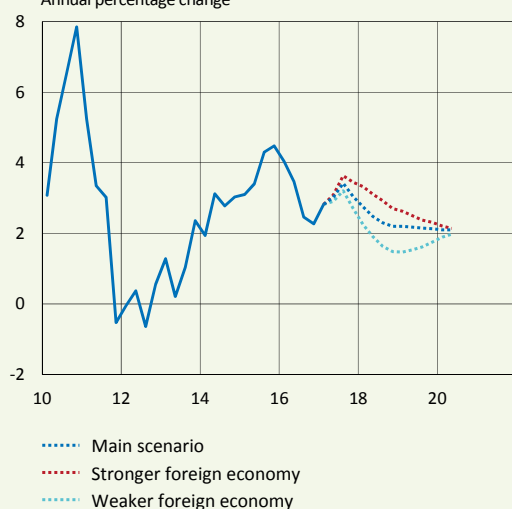
### **Stronger European economy**

Indicators point to rising GDP growth in several European countries and there may be a pent-up need for investment after several years of weak investment growth. At the same time, confidence among households and companies is strengthening. In the first scenario, it is assumed that these trends will continue to strengthen quite quickly and contribute to higher investment growth, and hence a faster economic upturn, in Europe compared with the assessment in the main scenario. GDP growth abroad (KIX-weighted) is assumed to be an average of 0.2 percentage points higher per year than in the main scenario in 2017–2019, and the difference is mainly due to higher growth in the euro area.

Better prospects in Europe affect the Swedish economy in several different ways. A major part of Swedish exports go to European countries and these are in turn made up of investment goods to a large extent. The fact that confidence is strengthening further also means that households save less and instead consume more. All in all, this means that demand in Sweden increases more rapidly and GDP growth is higher than in the main scenario (Figure 1:15). Accordingly, demand for labour also rises more rapidly, leading ultimately to a higher wage rate and higher costs for companies. Higher demand and higher costs means both greater opportunities and greater need for companies to raise their prices. CPI inflation is therefore be higher than expected (Figure 1:16). The krona is slightly stronger than in the main scenario but the effects of this on the real economy and inflation are minor.

The scenario illustrates the effects on growth and inflation when monetary policy is not changed in comparison with the main scenario. However, under normal circumstances the development in this scenario would mean that monetary policy was made clearly less expansionary, particularly given the strong economic activity to begin with. But inflation has been below target for a long time and monetary policy has been made increasingly expansionary. In the current situation, there is an evident risk that confidence inflation target is being affected more than normal by negative inflation surprises.<sup>11</sup> This risk is an argument in favour of a more cautious adjustment of monetary policy than normal in the scenario. Such a monetary policy mitigates the risk of the upturn in inflation being interrupted and of once again weakening confidence in the inflation target. Therefore, inflation is allowed to be slightly higher than the inflation target for a time.

**Figure 1:15. GDP growth**  
Annual percentage change



Sources: Statistics Sweden and The Riksbank

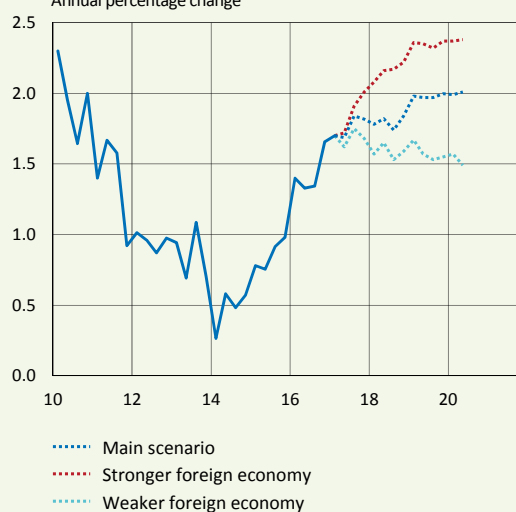
### Concern over setbacks gives weaker developments

In the second scenario, it is assumed that political developments in Europe in 2017 will impair the prospects for EMU and EU cooperation. This concern manifests itself partly in the form of the yields on a number of countries' government bonds rising markedly relative to German yields. Several of these countries have a high sovereign debt in relation to GDP and the fact that their yields are rising reflects an increased credit risk, that is a greater probability for the value of the sovereign debt being written down. The yield gap for these countries in relation to Germany is assumed to increase by a maximum of three percentage points in 2017 and then fall back to more normal levels at the end of the

forecast period. This development means that the problems of poor profitability and weak balance sheets in the European banking sector are further reinforced. Confidence among households and companies is negatively affected and the recovery in the European economy is interrupted. GDP growth abroad (KIX-weighted) will be an average of 0.6 percentage points lower than in the main scenario in 2017–2019.

Concern linked to political developments in Europe affects the Swedish economy through several different channels. Weaker real economic development in Europe implies a lower demand for Swedish export than in the main scenario while household and company confidence is negatively affected. Precautionary saving among households rises and companies' willingness to invest declines. GDP growth in Sweden is affected to approximately the same extent as internationally and is lower than in the main scenario (see Figure 1:15). This is also true for CPI inflation (see Figure 1:16). The krona is slightly weaker than in the main scenario but the effects of this are minor.

**Figure 1:16. CPI**  
Annual percentage change



Sources: Statistics Sweden and The Riksbank

The scenario calculates the effects on growth and inflation when monetary policy is the same as in the main scenario. This is done to clarify the effects that would be caused by the weaker international developments. However, the relatively large negative effects on CPI inflation mean that this assumption for monetary policy is not realistic, but that there is a need in the scenario to make monetary policy more expansionary. This could, for example, be achieved by cutting the repo rate, prolonging the period with a negative repo rate, or by additional government bond purchases, or by a combination of these measures. As Swedish public finances

<sup>11</sup> The IMF's World Economic Outlook, October 2016 presents empirical findings indicating that the sensitivity of inflation expectations to surprises in inflation outcomes is greater in countries where policy rates are very low. This suggests that

the sensitivity of inflation expectations is affected by how large the scope for monetary policy to respond is perceived to be.

are in good condition, there would also be scope for fiscal policy stimulation.

**Monetary policy takes the risks of low inflation into account**

In summary, the discussion based on both the scenarios illustrates that monetary policy, in the current situation, might not necessarily react as forcefully if inflation were to be surprisingly high or low respectively. Inflation has been lower than 2 per cent for a long time, which means that the risk of weakening confidence in the inflation target would be greater than normal if economic development were once again to be weaker than expected. In a scenario where economic development is stronger than expected, this may justify a more cautious adjustment of monetary policy than normal. In a scenario where development is instead weaker than in the main scenario, monetary policy would need to be made more expansionary, which in that case could be achieved in a number of different ways.

## CHAPTER 2 – Financial conditions

Since the February Monetary Policy Report, developments on the financial markets have been relatively stable. The Federal Reserve raised its policy rate in March while central banks in Europe have stuck to their previously adopted policy. Government bond yields abroad have moved in different directions and the spread between Germany and the countries in Europe where uncertainty over economic and political developments is greater has fallen again after the first round of the French presidential elections. In Sweden, government bond yields have fallen somewhat. The krona is weaker in competition-weighted terms than forecast in February. Households and companies are still paying low interest rates and credit growth is high. All in all, the financial conditions are deemed to be favourable for growth in the near term.

### International developments

#### New rate increase from the Federal Reserve

At the time of the Riksbank's monetary policy decision in mid-February, prices in the financial markets indicated a relatively low likelihood of the Federal Reserve implementing a new rate rise in the near term. But after clear signals in various speeches by members of the Federal Reserve's monetary policy committee, the outlook changed and prior to their meeting in March, the consensus on the market was that the central bank was going to increase its policy rate. As the increase was therefore entirely expected, market reactions at the time of the decision were limited. Market pricing for the US policy rate during the remainder of the year has shifted upwards, while expectations in the longer run have fallen somewhat (see Figure 2:1).

At the Federal Reserve's meeting, the plans were repeated to continue reinvesting all maturities in the securities portfolio until the tightening cycle is well under way. The meeting minutes make it clear that reinvestments can probably begin to be phased out during the year provided that the economy develops in line with expectations. The message is that changes will happen gradually and in a predictable manner, and that they will be communicated in good time before any actual change is implemented.

At the ECB's monetary policy meeting at the beginning of March, monetary policy was left unchanged. The deposit rate, which is currently the interest rate steering the overnight rate in the euro area, was held unchanged at -0.40 per cent and the

Table 2:1.

Developments on financial markets since the February Monetary Policy Report
Somewhat lower government bond yields in Sweden. Yield spreads between Germany and the countries in Europe where uncertainty over economic and political developments is greater has fallen again after the first round of the French presidential elections.
The krona is weaker in competition-weighted terms than forecast in February.
The share index in Sweden has risen in line with other countries.
Continued low interest rates for households and companies.
Continued high growth in lending to households and non-financial corporations.

#### 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 lending rates offered to households and companies.



asset purchases will continue during 2017 in line with the plan announced earlier. At its December meeting, the ECB relaxed its regulations on government bond purchases. To ensure smooth implementation of the programme, purchases of government bonds are now allowed at an interest rate below the deposit rate to the extent considered necessary. This can now be seen, for example, in the fall in the average maturity for purchases of German bonds. The ECB maintains that its policy rates will remain at current or lower levels for a long time and well beyond the end of their asset-buying programme period. The market's expectations of the ECB's deposit rate have been basically unchanged since February (see Figure 2:1). At times during the period, however, market pricing was slightly higher after speculation that the ECB might consider increasing the deposit rate before asset purchases came to an end. This has since been rejected by representatives of the ECB, causing market pricing to shift downwards again.

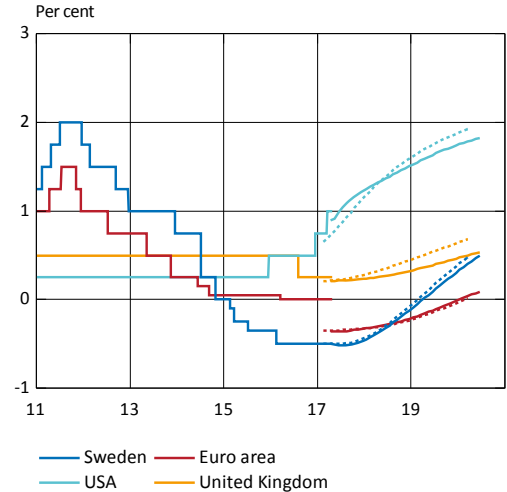
The Bank of England left its policy rate unchanged at 0.25 per cent and the market expects it to remain at this level for some time to come (see Figure 2:1). The Bank of England is hence expected to ignore the temporarily higher inflation rate, which is the product of the sharp depreciation in sterling following the Brexit referendum. Norges Bank left its policy rate unchanged at 0.50 per cent, but signalled that an initial rate rise has been pushed slightly further into the future. All in all, therefore, the central banks in Sweden's neighbouring countries are continuing to conduct very expansionary monetary policy.

**Yield spreads in Europe have declined**

In the United States, longer government bond yields have fallen slightly since the Riksbank's monetary policy decision in February, while shorter government bond yields are basically unchanged. This development can be seen in light of the market now expecting slightly less expansionary monetary policy than previously, which has helped push yields up, especially for shorter maturities. At the same time, greater uncertainty regarding political developments and possible reforms implemented by President Trump have contributed to slightly lower yields. All in all, the effects on short-term interest rates have largely offset one another. Seen in a slightly longer perspective, the longer government bond yields have been relatively stable at notably higher levels than prior to the presidential election (see Figure 2:2).

In Germany, 10-year government bond yields are in principle unchanged (see Figure 2:2). Yields with shorter maturities, on the other hand, are somewhat higher than in February, after a clear rise following the outcome of the first round of the French presidential elections. There have been large fluctuations during the period, however. At the end of February, German government bond yields fell significantly, especially those with shorter maturities. The two-year government bond yield was close to -1 per cent at the end of February. This was a result not only of the ECB purchasing German bonds with shorter

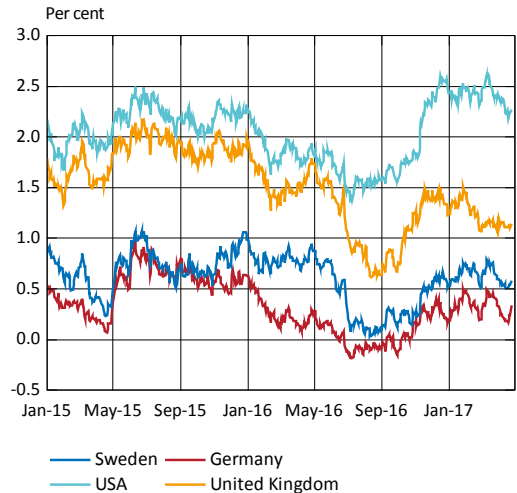
**Figure 2:1. Policy rates and rate expectations according to forward rates**



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 24 April 2017, broken lines are estimated on 14 February 2017.

Sources: Macrobond and the Riksbank

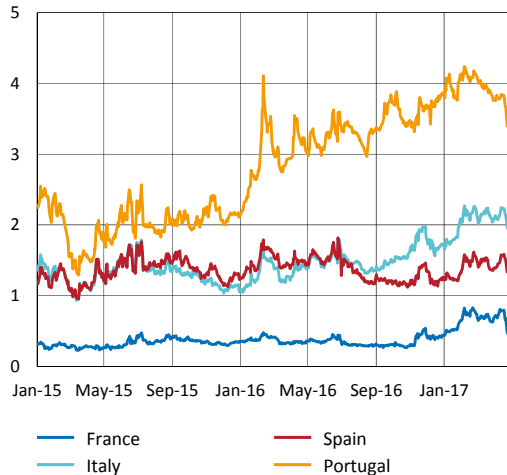
**Figure 2:2. Government bond rates with 10 years left to maturity**



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

Sources: Macrobond and the Riksbank

**Figure 2:3. Yield differential in relation to Germany, 10 year**



Note. Yield differentials refer to 10-year zero coupon yields.

Source: Thomson Reuters

maturities but also of a higher demand for assets seen as secure in times of greater political uncertainty.

This development is also evident in the yield spreads between various European countries. Until the end of February, yield spreads increased between Germany and the countries in Europe where there is greater uncertainty surrounding economic and political developments, such as France and Italy. After that, yield spreads fell somewhat, only to rise again for the first round of the French presidential elections. After the election outcome, yield spreads fell back (see Figure 2:3).

In the United Kingdom, continued uncertainty about the effects of the country's exit from the European Union on the UK economy has contributed to a fall in government bond yields (see Figure 2:2).

**Strong stock market movements but the risks have increased**

Since February, stock prices in the United States have remained constant, while they have increased in most European countries. The stock markets in many developing countries have also risen (see Figure 2:4). In Mexico, for example, where the stock market fell sharply directly after the US presidential election, prices are back at their pre-election levels. The Mexican currency is also back at the same level it was before the US election. The expected volatility on the stock market in both the United States and Europe has increased slightly in connection with increased geopolitical unease, but fell after the first round of the French presidential elections and is still at relatively low levels. In the United States, the cost of insuring oneself against major stock exchange falls via options is relatively high. For example, the "SKEW" index, which rises when selling options are expensive in relation to buying options, is at relatively high levels. This means that the market, despite low volatility, is now pricing an elevated risk for major stock exchange falls (Figure 2:5).

On the foreign exchange market, the euro has strengthened somewhat after the election outcome in France. The Japanese yen has also strengthened somewhat during the period, while the US dollar has weakened.

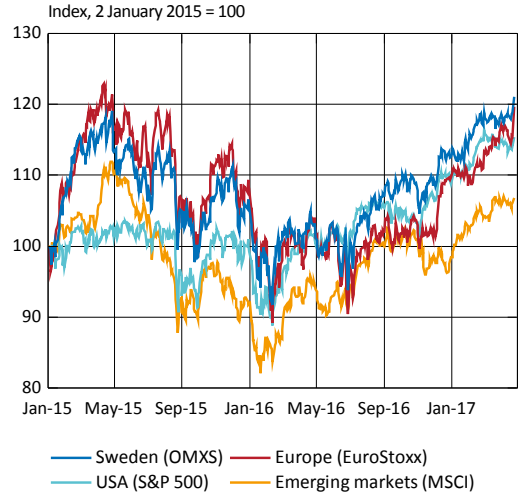
**Financial conditions in Sweden**

**Small movements in Swedish market rates**

According to pricing on the financial markets, expectations about the future repo rate have been almost unchanged since February (see Figure 2:1). Forward rates are marginally higher than the Riksbank's repo-rate path for the coming years. Surveys of market participants' expectations about the level of the repo rate in the future are also slightly higher than the Riksbank's interest rate forecasts one and two years ahead (see Figure 2:6). In a historical perspective, however, the deviations from the Riksbank's interest rate forecast are small.

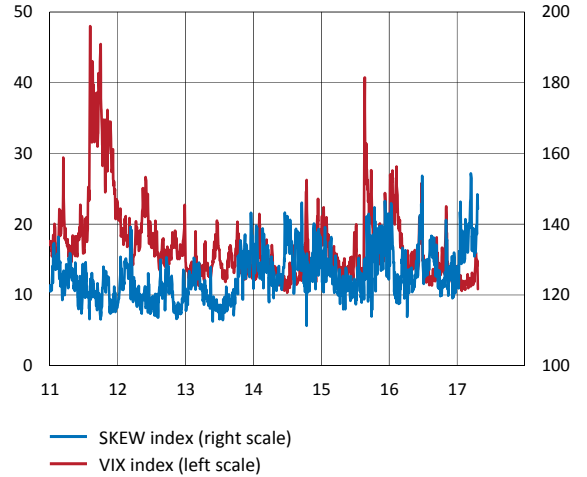
Swedish government bond yields have fallen somewhat since February and the spread in relation to Germany has declined.

**Figure 2:4. Stock market movements**



Sources: Macrobond and Thomson Reuters

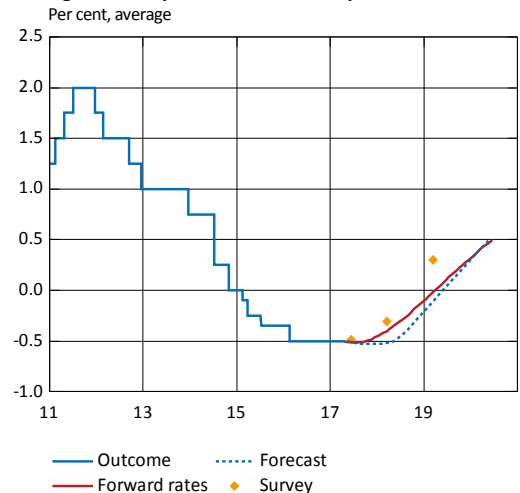
**Figure 2:5. Volatility and risk of large falls on the stock market**  
VIX and SKEW index



Note. Both VIX and SKEW are calculated on the basis of options on the S&P 500 share index. The VIX index matches the expected volatility of the stock market, while the SKEW index shows how expensive it is to purchase protection against large stock exchange falls.

Source: Thomson Reuters

**Figure 2:6. Repo rate and market expectations**



Note. The forward rates are estimated as of 24 April 2017 and measure the expected repo rate. The survey responses show the average for money market participants on 12 April 2017.

Sources: Macrobond, TNS Sifo Prospera and the Riksbank



Yields on other types of bonds, such as covered bonds and corporate bonds, have also fallen somewhat during the period.

Yields with shorter maturities have risen somewhat but the yield on a treasury bill with a short maturity is still significantly under the policy rate (see Figure 2:7). One contributory factor here is the Riksbank's government bond purchases (see also the article, "The effects of monetary policy on financial variables").

The purchases of government bonds have resulted in the Riksbank now holding around 40 per cent of the outstanding stock of nominal government bonds in SEK. This means that a relatively large proportion of the stock is not available for trade on the market, which could influence the functioning of the market. In recent years, however, different types of new financial regulations have been introduced that may also have affected the market's functionality. Even if the picture is not clear-cut, several indicators suggest that the Riksbank's bond purchases have had a limited impact on market liquidity and the overall assessment is that the Swedish government bond market is still working relatively well.<sup>12,13</sup>

**Krona weaker than in February**

In competition-weighted terms (KIX), the Swedish krona has weakened compared with the forecast in February (see Figure 4:14). The krona has weakened against some currencies included in the index, such as the euro and sterling, but has strengthened slightly against others, for instance the US dollar and the Norwegian krona (see Figure 2:8).

The Swedish stock market has developed in line with the stock market in the rest of Europe and has risen slightly since February (see Figure 2:4).

**Credit growth among households and companies still high**

The banks' continuing good funding conditions mean that lending rates to households and companies remain on historically low levels. The average mortgage rate for new agreements remained at 1.6 per cent in February, while the average interest rate for new bank loans for non-financial corporations amounted to 1.3 per cent (see Figure 2:9).

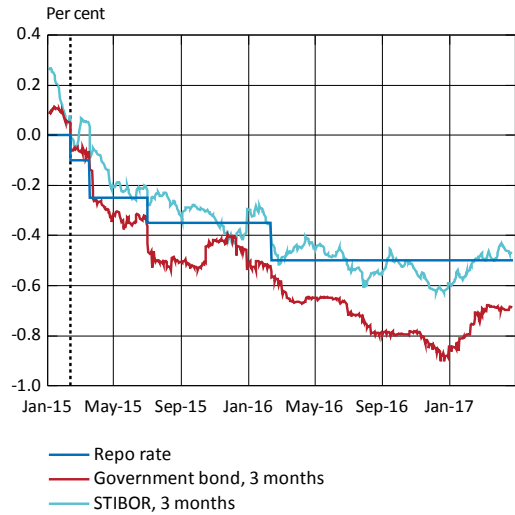
Since the repo rate entered negative territory for the first time in February 2015, lending rates to households have fallen slightly less than the repo rate, while lending rates to companies have fallen slightly more. Average deposit rates for households and companies have remained largely unchanged since the middle of 2015 and are close to zero.<sup>14</sup> Overall, the impact of the repo rate on deposit and lending rates has been in line with the Riksbank's expectations.

<sup>12</sup> For a discussion of indicators of market liquidity, see Bonthron, F. Johansson, T. and Mannent, J. Market liquidity on the Swedish bond market and its importance for financial stability, Economic Commentary no. 3, 2016. Sveriges Riksbank.

<sup>13</sup> See also Financial Stability Report 2016:2.

<sup>14</sup> Most financial undertaking corporations and some non-financial corporations and municipalities are experiencing negative deposit rates. For technical reasons, however, the negative deposit rate is usually reported as a charge and is therefore not always visible in the figures from Statistics Sweden. Despite this, deposits at negative rates form a small portion of total deposits from non-financial corporations. See the article "Perspectives on the negative repo rate" in the Monetary Policy Report, July 2016.

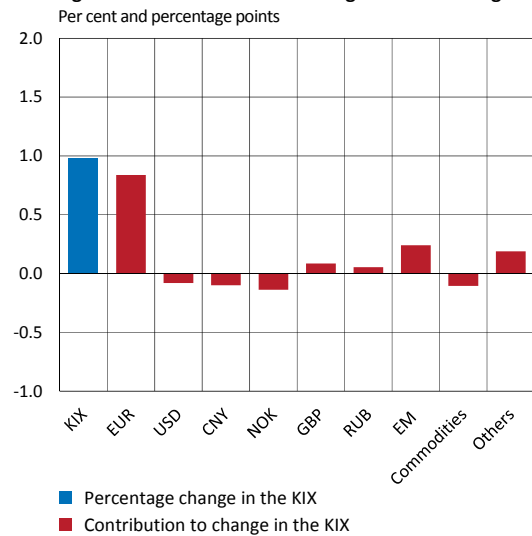
**Figure 2:7. Short market rates and the repo rate**



Note. The broken line refer to the start of the bond purchases.

Sources: Macrobond and the Riksbank

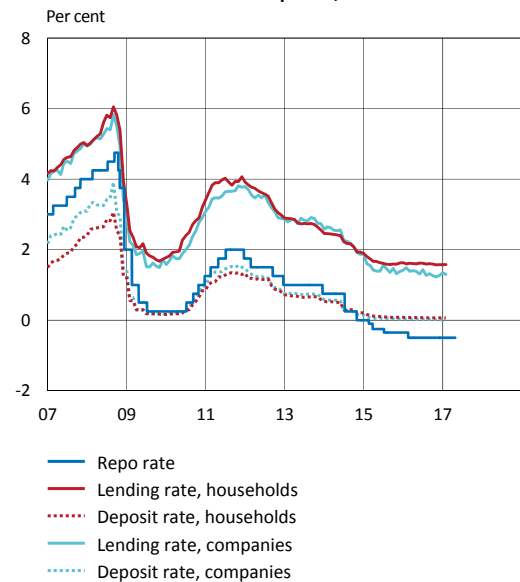
**Figure 2:8. Contributions and changes to KIX exchange rates**



Note. The figure shows change in KIX and contributions from different currencies between 14 February 2017 and 24 April 2017. 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 2:9. Repo rate together with the deposit and lending rate to households and companies, new contracts**



Note. MFI's average deposit and lending rates for households and companies.

Sources: Statistics Sweden and the Riksbank

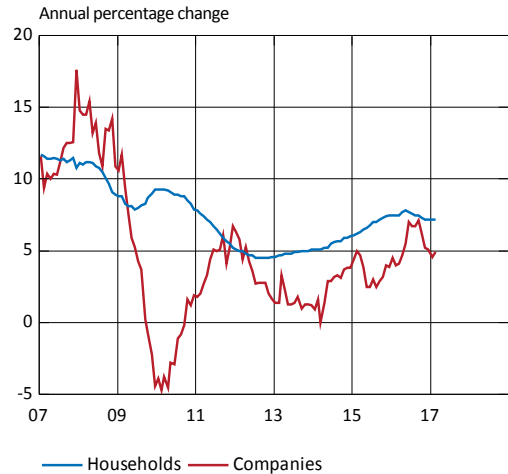
Credit growth among households and companies continues to be high, even if it has slowed down slightly since mid-2016. The annual growth rate in bank loans to households in February was 7.2 per cent. The rate of increase in lending to companies decreased slightly to 4.9 per cent, which is in line with a historical average (see Figure 2:10). The rate of increase in corporate borrowing in securities also slowed down somewhat in February and amounted to 6.8 per cent. Surveys show that companies' funding conditions continue to be good, however.

The rate of increase in housing prices stabilised at the end of 2016, although there are still considerable regional differences. In March, housing prices rose by an annual rate of 8.7 per cent (see Figure 1:12). At the same time, surveys indicate continued optimism among the general public and estate agents, and a belief that housing prices will rise going forward.

### Financial conditions in Sweden continue to be expansionary

If one summarises financial developments in a financial index, it indicates that the financial conditions in Sweden continue to be expansionary (see Figure 2:11).<sup>15</sup> Low interest rates, in the form of both low market rates and low rates to households and companies, have contributed to the development. Strong stock market movements, a high growth rate in housing prices, good lending growth and relatively good funding terms are also contributing to favourable conditions for growth in the near term.

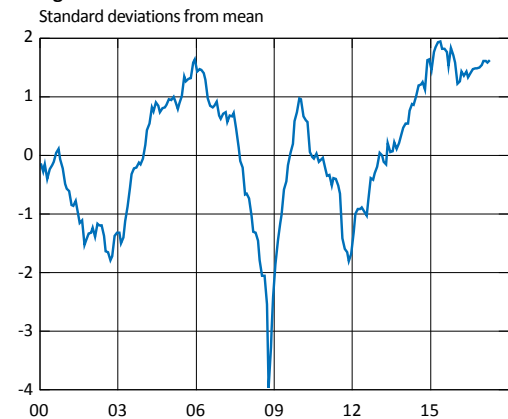
**Figure 2:10. Bank lending to households and companies**



Note. MFI's lending to households and non-financial companies according to financial market statistics adjusted for reclassifications and traded loans since 2006.

Source: Statistics Sweden

**Figure 2:11. Financial index for Sweden**



Note. The index is based on a principal component analysis of twelve different financial variables. A higher value indicates more favourable financial conditions.

Sources: Thomson Reuters and the Riksbank

<sup>15</sup> For more information on the index, see Fransson, L. and Tysklind, O. An index for financial Conditions in Sweden, Economic Review 2017:1, 2017. Sveriges Riksbank.



## ARTICLE – The effects of monetary policy on financial variables

Since February 2015, the Riksbank has gradually cut the repo rate from zero down to –0.50 per cent, carried out extensive purchases of government bonds and furthermore had special contingency plans to intervene on the foreign exchange market. In an historical perspective, this represents unusual monetary policy. The monetary policy has affected the overall financial conditions in an expansionary direction, with a significant impact on short- and long-term interest rates as well as on the krona exchange rate.

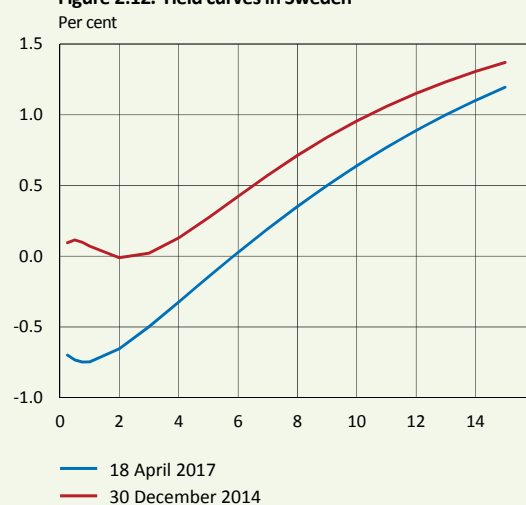
Since the beginning of 2015, the Riksbank has gradually cut its repo rate from zero to –0.5 per cent and announced purchases of increasingly large volumes of government bonds, amounting to a total of SEK 290 billion at the end of 2017. An overall analysis shows that the monetary policy conducted over the last two years has had a clear impact on many financial variables. Furthermore, the monetary policy has also had a positive effect on economic development and inflation. So far there do not appear to have been any clearly negative side-effects, see Chapter 1.<sup>16</sup>

### Market rates have fallen

The cuts in the repo rate to below zero since the beginning of 2015 have had a clear impact on short-term market rates, roughly in the same way as when the repo rate is positive.<sup>17</sup> Short-term market rates have in total fallen by 70–80 basis points (hundredths of percentage points) compared with the repo rate, which has been cut by 50 basis points (see Figure 2:7). Interbank rates and government bond yields for maturities up to five years are now negative.<sup>18</sup>

Longer-term government bond yields have also fallen somewhat since the beginning of 2015 when the Riksbank started buying government bonds. For example, the yield on a 10-year nominal government bond was 30–40 basis points lower at the end of 2016/beginning of 2017 than two years earlier. So far in 2017, however, they have risen marginally, which is in line with international developments. All in all, both short-term and long-term government securities yields have fallen significantly since the repo rate was cut below zero and the Riksbank began buying government bonds (see Figure 2:12).

Figure 2:12. Yield curves in Sweden



Note. Horizontal axis shows maturities in years. Zero coupon yields interpolated from treasury bills and government bonds using the Nelson-Siegel method.

Source: The Riksbank

The yield on real government bonds, which the Riksbank has been buying since April 2016, has fallen by one percentage point since the Riksbank began its purchases.

A common method of measuring the effects on financial variables is to look at what happens when monetary policy decisions are announced.<sup>19</sup> A decision that is more expansionary than expected should lead to short-term and long-term interest rates falling and to the krona exchange rate weakening. The total effects are probably greater than the measured announcement effects as financial variables can have been affected both prior to and some time after the decisions.<sup>20</sup> If market participants have fully or partially

<sup>16</sup> A longer article on the effects of the Riksbank's monetary policy including a discussion on the side effects can also be found in the Account of Monetary Policy, 2016.

<sup>17</sup> There are occasions when the market effects have been the reverse, for instance, in April 2015 when rates rose and the krona strengthened after the Riksbank announced it would extend the government bond purchases. This was probably due to market participants having expected an even more expansionary policy than the one announced.

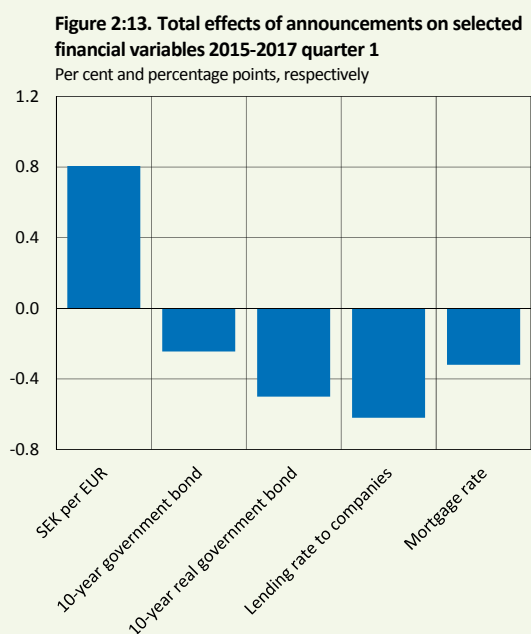
<sup>18</sup> The Riksbank's purchase of government bonds has also contributed to a fall in short-term government bond rates, see also "Government bond purchases push down long and short-term rates" in Monetary Policy Report October 2016.

<sup>19</sup> Here, the effects of the change are measured during the day on which the decisions have been announced. Measuring announcement effects is a common method of measuring how central banks' asset purchases have affected financial prices, see for instance Gagnon J., Raskin M., Remache J. and Sack B. (2011), "The Financial markets Effects of the Federal reserve's Large Scale Asset Purchases", *International Journal of Central Banking* Vol. 7 No. 1. The method is used as there is only limited experience of the effects of these asset purchases.

<sup>20</sup> To discuss the effectiveness of bond purchases, it may also be important to calculate measures of how great the effect on interest rates is for a certain volume of unexpected purchases. See De Rezende, R. B., Kjellberg, D. and Tysklind, O., "Effects of the Riksbank's government bond purchases on financial prices", *Economic Commentary* no. 13, 2015.

predicted the measures, for example, then this is reflected in the prices even before the announcement. However, as this can occur gradually over a longer period, it is considered much more difficult to identify the effects and link them to the Riksbank's purchases.<sup>21</sup>

The total effect of the announcements has been that the yield on 10-year nominal bonds has fallen by 25 basis points (see Figure 2:13). For inflation-indexed government bonds, the fall has been roughly twice as large, around 50 basis points. However, this measures the effects to the extent that the announcements have been unexpected.



Note. The bars show the total effect of the announcements, measured as the sum of the changes in the respective variables on the date of the announcement. For lending rates to households and companies the effect is calculated as a change between January 2015 and December 2016.

Source: The Riksbank

### Lower interest rates for households and companies

Interest rates charged to households and companies have been affected in a somewhat different way than before during the period with a negative repo rate. Deposit rates normally fall when the repo rate is cut. However, the banks have chosen not to introduce negative deposit rates for most of their customers, which means that they have remained on average close to zero. (see Figure 2:14).<sup>22</sup> The fact that deposit rates, at the current repo-rate level, did not in general become negative was also expected.

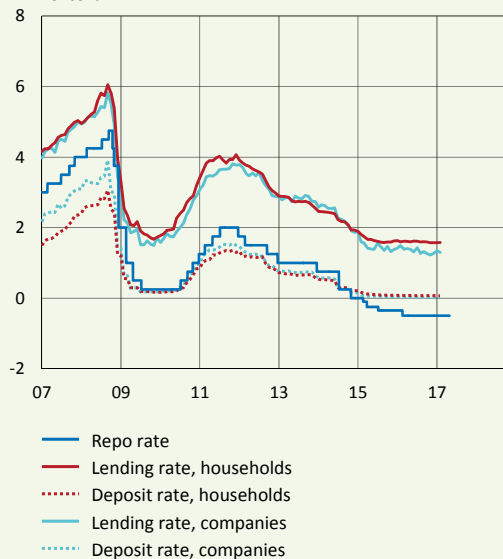
Lending rates to companies have fallen more than the repo rate since the beginning of 2015, while lending rates to

households fell primarily at the beginning of 2015 and have since then remained more or less unchanged. The fact that the downturn has slowed down is partly due to the banks' funding costs not falling as much as the repo rate, which in turn is partly due to them not applying negative deposit rates for households and most companies.

### The krona has weakened

The monetary policy has also affected the krona exchange rate. The effect of the announcements has been different with regard to the exchange rate against the euro and against the US dollar. At the time of the announcements, the krona weakened in total by almost 1 per cent against the euro.<sup>23</sup> For the krona, too, however the total effect of the monetary policy is greater than that which is captured by the changes in connection with the announcements. The krona would probably have been considerably stronger today if the Riksbank had not conducted such an expansionary monetary policy. At the end of 2016, the krona was significantly weaker against the US dollar and slightly weaker against the euro, than two years earlier. In 2017, the krona has basically remained unchanged against the euro, while it has strengthened slightly against the dollar.

**Figure 2:14. 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

<sup>21</sup> The fact that liquidity in the economy increases when the Riksbank buys government bonds may also have an expansionary monetary policy effect. See Alsterlind J., Erikson, H., Sandström, M. and Vestin, D. (2015), "How can government bond purchases make monetary policy more expansionary?", Economic Commentary, No.12, 2015.

<sup>22</sup> Most financial undertaking corporations and some non-financial corporations and municipalities are facing negative deposit rates. For technical reasons, however, the negative deposit rate is usually reported as a charge and is therefore not always visible in the figures from Statistics Sweden.

<sup>23</sup> That the effects differ between the currencies is due to other factors than monetary policy affecting exchange rate fluctuations.

## CHAPTER 3 – The current economic situation

Confidence indicators point to optimism among households and companies both abroad and in Sweden. Developments in the Swedish labour market continue to be strong. Resource utilisation is deemed overall to be higher than normal and is expected to rise further in the period ahead. Previous energy price increases are now contributing less and less to international and Swedish inflation. In addition to the reduced contribution from energy prices, temporary factors also contributed to inflation in Sweden falling in March. CPIF inflation excluding energy prices is expected to rise again in the coming months. The upturn in CPIF inflation will in total be somewhat smaller.

### Inflation

#### Volatile energy prices contribute to fitful inflation growth

As expected, previous energy price rises are contributing less and less to CPIF inflation, which fell back to 1.5 per cent in March. At the same time, CPI inflation, which, in contrast with the CPIF, is affected by changes in household mortgage rates, was 1.3 per cent. If we ignore the development in energy prices, the rate of price increase, measured in terms of the CPIF excluding energy, was 1.0 per cent. Inflation in March was slightly lower than in the Riksbank's forecast in the latest Monetary Policy Report in February. It is deemed that most of the forecasting error can be explained by temporarily weak development in some particularly volatile CPI components. For example, prices of international air travel and vegetables fell much more than expected. At the same time, more sluggish prices for services increased slightly more rapidly than expected.

Inflation has shown a rising trend since 2014 (see Figure 3:1).<sup>24</sup> Some measures of inflation, for instance, CPIF excluding energy, are lower than they were one year ago, however. The rate of price increase for food and other goods slowed down last year (see Figure 3:2). This was partly due to the appreciation of the krona up until the middle of last year. Going forward, however, the weakening of the krona, which occurred during the second half of last year, and rising resource utilisation are expected to help prices for goods to increase more rapidly again. The rate of price increase for services has risen in recent years and is expected to continue to do so in the months ahead. The increase in services prices has been broad in recent years. Rents, which are determined through negotiations and comprise around one quarter of services prices, are still increasing slowly, partly due to the low inflation.

#### Strong economic activity but inflation rising slowly

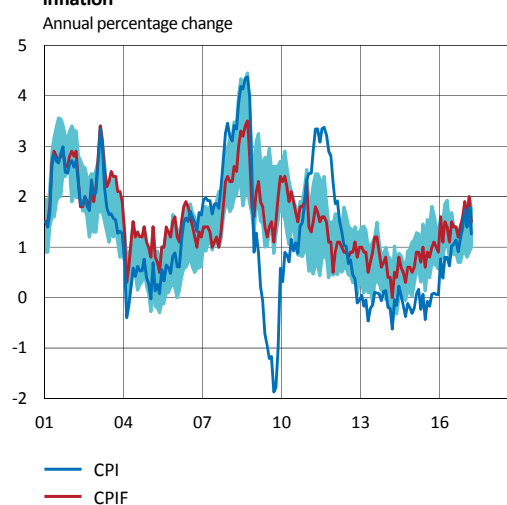
Rising international prices, a delayed impact from last year's depreciation of the krona and the ever-stronger Swedish

Table 3:1.

Expected development in February MPR	Actual development
CPIF inflation 1.7 per cent in March.	CPIF inflation 1.5 per cent.
GDP growth 2.9 per cent in fourth quarter	GDP increased by 4.2 per cent.
Unemployment 6.8 per cent in first quarter.	Unemployment is 6.6 per cent.
GDP growth in the euro area 1.9 per cent in first quarter.	Indicators slightly stronger than expected.
GDP growth in the USA 2.3 per cent Q1.	Indicators slightly weaker than expected.

Note. MPR refers to the Monetary Policy Report. The CPIF is the CPI with a fixed mortgage rate. Inflation refers to the annual percentage change. GDP growth refers to the seasonally-adjusted quarterly change in per cent, calculated as an annual rate. Unemployment refers to percentage of the labour force, seasonally adjusted.

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



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

Sources: Statistics Sweden and the Riksbank

<sup>24</sup> For a more detailed discussion of various measures of inflation, see also the article "A broader picture of price development in Sweden", Monetary Policy Report, April 2016.

economy are factors indicating that inflation will increase in the period ahead. Forward-looking indicators also point more actors preparing for rising inflationary pressures. According to the Economic Tendency Survey, the business sector's expectations of sales prices have risen and the retail trade is planning faster-than-normal price increases. The Riksbank's Business Survey in February shows that manufacturing companies are expected higher sales prices this year, mostly thanks to stronger demand. At the same time, however, retailers' price plans continue to be burdened by tough competition. Further, higher rates of price increase can be seen in the producer channel (see Figure 3:3). The depreciation of the krona in the second half of last year has contributed to an ever-faster rise in the import prices of consumer goods over the past six months. The rate of price increase on the domestic market has also risen gradually in recent years, which is probably linked to the increase in resource utilisation.

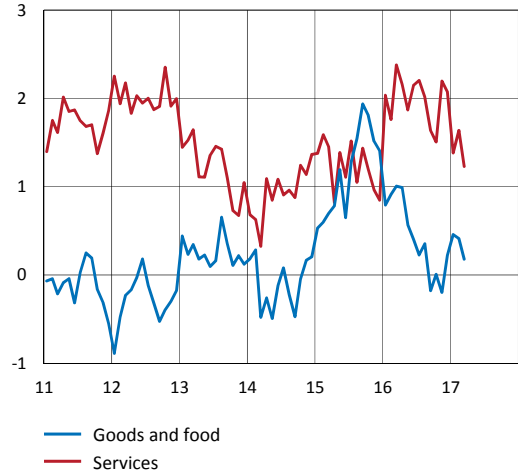
At the same time, however, there are factors that will subdue inflation in the months ahead. Although energy prices are expected to continue to make a positive contribution to the rate of increase in the CPI, this contribution will diminish as last year's relatively high energy price increases fall out of the twelve-month comparisons. Domestic air travel prices are also expected to increase more slowly than last year. This is, however, largely due to Statistics Sweden introducing new calculation methods for this component as from 2007, which cause more seasonal variation in the measured prices.

One way of aggregating information from outcomes and indicators is to use statistical models. A model analysis indicates that CPI inflation excluding energy will increase slightly more rapidly in the months immediately ahead (see Figure 3:4). The Riksbank's forecast is based on such a development, which is also approximately in line with the forecast in the Monetary Policy Report in February. A reduced contribution from energy prices means that the upturn in CPI inflation will on the whole be somewhat lower in the coming months. Forward pricing indicates that oil prices are expected to be slightly lower in the year ahead compared with the forecast in February and are therefore partly responsible for CPI inflation being revised downwards slightly.

**Long-term inflation expectations close to 2 per cent**

The upturn in inflation in recent years has been followed by rising inflation expectations. In Prospera's quarterly survey in March, inflation expectations increased over all time horizons. Expectations five years ahead have, for some time, been back close to 2 per cent, which is slightly below the historical average. Prospera's monthly survey among money market participants in April indicated small changes in inflation expectations compared with March and one and two years ahead, inflation is expected to be 1.7 and 1.9 per cent respectively (see Figure 3:5). According to

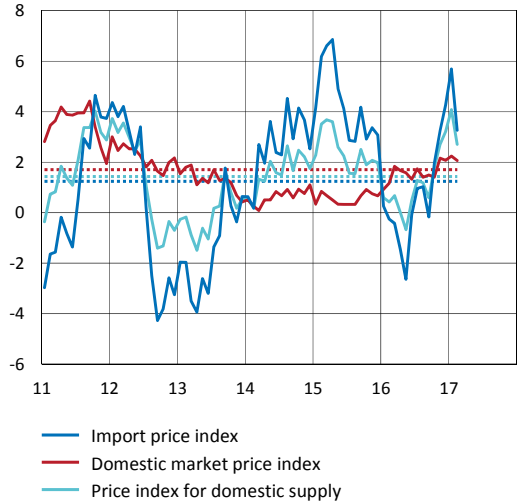
**Figure 3:2. Prices of goods and services in the CPI**  
Annual percentage change



Note. Goods and food is a combination of the aggregate goods and food in the CPI. Together, these account for 43 per cent of the CPI. Service prices account for 45 per cent of the CPI.

Sources: Statistics Sweden and the Riksbank

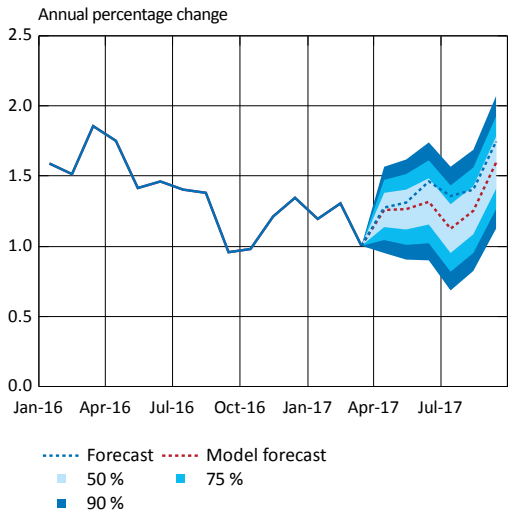
**Figure 3:3. Producer prices for consumer goods**  
Annual percentage change



Note. Import price index measures what Swedish importers pay for their goods at the border. Domestic market prices measure what Swedish producers are paid when sale takes place in Sweden. The price index for domestic supply is an aggregate of the import- and home market price index. Broken lines refer to average rate of increase since the year 2000.

Sources: Statistics Sweden and the Riksbank

**Figure 3:4. CPI excluding energy, model forecast with uncertainty bands**  
Annual percentage change



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

Sources: Statistics Sweden and the Riksbank

the Economic Tendency Survey in March, the one-year inflation expectations of households were unchanged at 2 per cent.<sup>25</sup>

## Global and Swedish economic activity

### Signals of stronger economic activity abroad

Recently published international confidence indicators have on the whole been strong (see Figure 4:2). Even if global trade was on the same level in January as it was in December, trade grew rapidly towards the end of last year after weak development during most of 2016 (see Figure 3:6).

GDP in the euro area grew by 1.9 per cent in the fourth quarter, compared with the immediately preceding quarter and calculated as an annual rate. Growth was thus somewhat higher than during the third quarter. The indicators point to a relatively strong start to 2017. Not least companies in the industrial sector are reporting higher confidence, although this can so far only be seen to a lesser degree in actual outcomes. GDP growth in the United States slowed somewhat during the fourth quarter after temporary factors had pushed up growth during the third quarter. Growth in both housing investment and business investment increased during the fourth quarter. Consumer and corporate confidence have risen significantly in recent months, which, in combination with a strong labour market, points to continued relatively good growth in the near term.

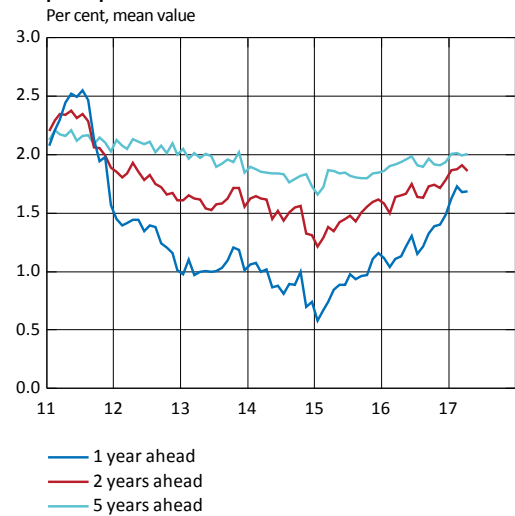
Measured in terms of KIX-weighted GDP, growth abroad rose marginally during the fourth quarter compared with the third quarter. Indicators and monthly outcomes suggest approximately the same growth rate at the start of 2017.

### Low inflation abroad

Inflation abroad increased at the end of 2016, mainly as a result of energy prices rising at a faster rate. Growing demand probably contributed to the gradual increase in oil prices last year after they bottomed out at the beginning of 2016. In the period ahead, the oil price is expected to remain on about the same level of around 55 US dollars a barrel, in line with what forward pricing indicates. Last year's rising oil price will, however, affect the twelve-month comparisons for a while longer.

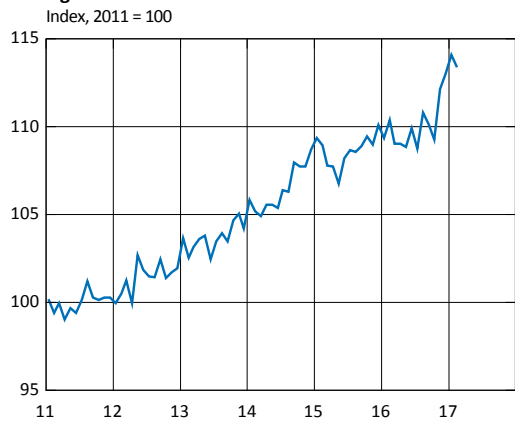
In the euro area, inflation fell back from 2.0 per cent in February to 1.5 per cent in March according to preliminary statistics. The upturn at the start of the year can largely be explained by a greater contribution from energy prices, although prices of unprocessed foods, not least vegetables, have also contributed to the upturn. If these components are excluded, inflation in the euro area is still below 1 per cent and has only changed marginally in the past year. In the United States, however, underlying inflation has risen in the past year, and the rate of increase in the consumption deflator excluding energy

**Figure 3:5. Inflation expectations among money market participants**



Source: TNS Sifo Prospera

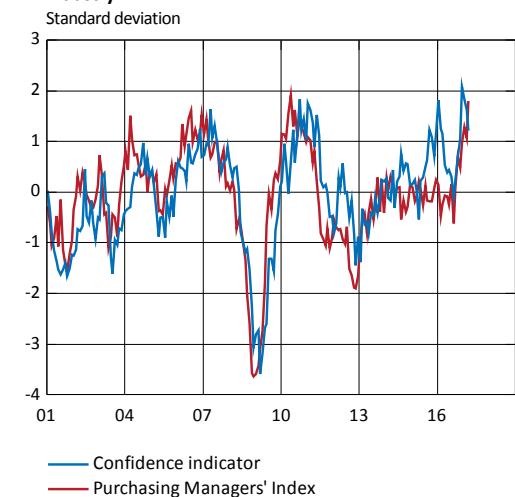
**Figure 3:6. World trade volume**



Note. Refers to trade in goods.

Source: CPB Netherlands Bureau for Economic Policy Analysis

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



Note. The confidence indicator has been standardised so that the mean value is 100 and the standard deviation is 10.

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

<sup>25</sup> In April 2015, the National Institute of Economic Research changed its method of measuring inflation expectations. The Monetary Policy Report shows inflation expectations measured using the old method.



and food, the measure to which the Federal Reserve attaches the most importance, was 1.8 per cent in February.

Overall, inflation abroad is expected to rise for a few more months and then fall back when the contribution from energy price increases starts to wane. The forecast for inflation is slightly lower than in the Monetary Policy Report in February.

### Continued high Swedish growth in the first half of 2017

According to the National Accounts, seasonally-adjusted growth during the fourth quarter was just over 4 per cent compared with the previous quarter and calculated as an annual rate. Similar to the development in the third quarter, the growth can largely be explained by rapidly increasing exports while domestic demand grew at a more moderate pace. The rate of growth thus increased during the fourth quarter and helped Swedish GDP to grow by just over 3 per cent in 2016. The fact that growth was so high in 2016 can also be explained by an improvement in global industrial activity towards the end of the year and high growth in the number of persons employed, as well as factors that are expected to decline in significance in the years ahead. Public sector consumption grew unusually rapidly in the wake of the high level of asylum immigration in the autumn of 2015 and housing construction continued to increase substantially in 2016.

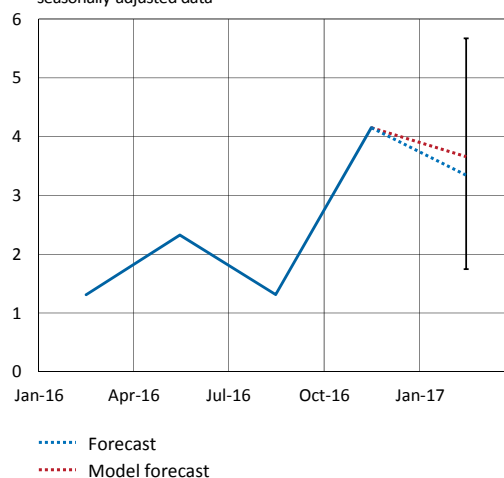
Growth indicators for the first quarter continue to be positive, especially survey-based indicators. Both the Economic Tendency Survey and the Purchasing Managers' Index point to marked optimism in much of the business sector. This is particularly true in the manufacturing industry, whose indicators are on very high levels after a clear upturn during the second half of 2016 (see Figure 3:7). The monthly statistics for production, household consumption and foreign trade are not quite so positive, however. Based on the relatively positive development in exports in recent quarters and the general upturn in confidence indicators on many of Sweden's important export markets the conditions are nevertheless in place for continued strong development at the start of 2017. The Statistics Sweden investment survey for February indicates that investment plans in the business sector for the whole of 2017 look slightly stronger than they did in the autumn. In the Riksbank's most recent business survey, respondents also painted a picture of an ever-stronger economic situation largely thanks to unexpectedly good international demand.

The development of both household consumption and retail trade confidence and turnover has been relatively weak in 2016. According to the Economic Tendency Survey, however, confidence among households is, at the same time, relatively high and overall consumption is expected to grow at a historically average pace in the period ahead.

The information in a large number of GDP growth indicators in the first quarter can be summarised with the help of statistical models. The model forecasts indicate GDP growth of 3.3 per cent during the first quarter of 2017, compared with the previous quarter and calculated at an annual rate (see Figure 3:8). The

**Figure 3:8. GDP, model forecast with uncertainty bands**

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



Note. The model forecast is an average forecasts from different statistical models. The vertical line refers to a 50 per cent uncertainty band. The uncertainty band is based on the models' historical forecast errors. One explanation for the wide uncertainty interval is the large variation in growth outcomes between different quarters.

Sources: Statistics Sweden and the Riksbank

### Rapid population growth making LFS difficult to interpret

Growth in the labour force and the number of persons employed have been very strong in the autumn of 2016 and the beginning of 2017. There is reason to believe, however, that the growth figures in the Labour Force Surveys (LFS) overestimate the actual development, as the sample in the underlying survey cannot be assumed to be representative of the population as a whole.

The sample in the LFS survey is a random sample from the Total Population Register (TPR), the data in which are updated daily. The LFS sample is drawn in November every year and includes persons who were registered as resident in September of the same year. The weights for the various sub-groups in the LFS monthly survey are then adjusted based on how the total population in the TPR, broken down by age, country of birth, sex and county, changes. For a population group that grows more than the rest of the population, this means that the persons representing this group in the LFS monthly survey receive a relatively larger weight in the aggregate and therefore represent relatively more people. An implicit assumption in LFS is hence that the growing group is homogeneous as regards labour force participation, employment rate and unemployment.

During the autumn, the number of approved residence permits increased sharply, leading to a rapid increase in the working-age population after September. These persons will not be included in the LFS sample until September of this year and are instead represented by the persons who were registered as resident in September 2016. However, those whose resident permits have recently been approved probably have a lower labour force participation rate and employment rate and are to a greater extent unemployed than those who currently represent them in LFS.

Even if it is difficult to determine exactly how large this sampling problem is, the Riksbank deems that the LFS statistics for labour force and employment growth have overestimated the actual development in the autumn of 2016 and the beginning of 2017.

Riksbank’s forecast, which also takes into account factors that are not considered in the models, is much the same as the model forecast. Even during the second quarter of 2017, growth is expected to be higher than the historically average growth rate.

**Strong development on the labour market this year**

The favourable economic developments have contributed to a continued improvement in the labour market situation at the beginning of the year. The development has been surprisingly strong and both the number of employed persons and the labour force have increased more rapidly than in the forecast in the Monetary Policy Report in February. Unemployment has, at the same time, decreased slightly more than expected.

The forward-looking indicators suggest continued strong development on the labour market. According to the Economic Tendency Survey, recruitment plans in the business sector are still on a high level and indicate good employment growth (see Figure 3:9). Growth in the number of new vacancies registered at the Swedish Public Employment Service (Arbetsförmedlingen) has indeed slowed somewhat, but the number of vacancies is still on a high level in a historical perspective. The overall assessment is that the situation on the labour market will continue to develop in a positive way, even though the decline in unemployment is expected to slow down (see Figure 3:10).

**Resource utilisation in the economy higher than normal**

The amount of spare capacity in the economy is affecting GDP growth, as well as the development of wages and prices, albeit with a certain time lag. Resource utilisation in the economy is not observable, however, but is ultimately based on an assessment of a number of indicators.

According to Statistics Sweden, capacity utilisation in the manufacturing industry is higher than its historical average and companies’ recruitment plans indicate that they need to increase their workforce to be able to meet demand. At the same time, the percentage of companies in the Economic Tendency Survey reporting labour shortages has increased to a high level (see Figure 3:10). Even in the interview survey conducted by Arbetsförmedlingen, shortages have risen to a high level, particularly in the public sector. In its survey, the Employment Service also asks companies about the occurrence of “hidden shortages”, that is whether companies have refrained from trying to recruit because of the labour shortage. Only a small percentage of companies refer to “hidden shortages” but the percentage is nevertheless almost as large as in 2007, which can be interpreted as companies finding it increasingly difficult to find the right personnel.

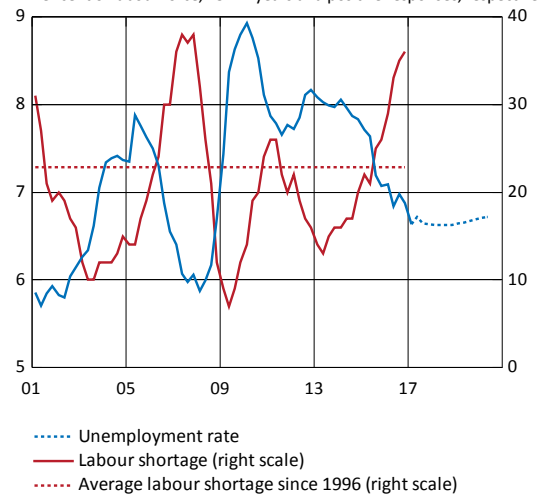
The Riksbank’s RU indicator summarises a large amount of survey and labour market data and is intended to reflect resource utilisation in the economy. In the fourth quarter, the RU indicator increased further and, all in all, resource utilisation in the economy is deemed to be higher than normal (see Figure 3:11). Resource utilisation in the economy normally affects both wage

**Figure 3:9. New vacancies and recruitment plans**  
Seasonally-adjusted net figures and annual percentage change



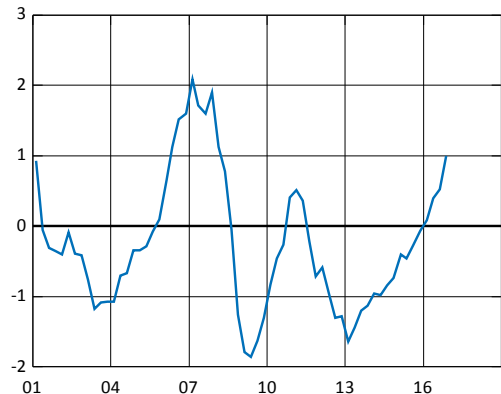
Note. Recruitment plans refer to expectations of the number of employed in the business sector three months ahead.  
Sources: National Institute of Economic Research and The Swedish Public Employment Service

**Figure 3:10. Unemployment and labour shortage**  
Per cent of labour force, 15–74 years and positive responses, respectively



Note. Red broken lines refer to average between 1996 and the latest outcome.  
Sources: The National Institute of Economic Research, 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

and price development in the economy with a certain time lag. The normative agreements recently concluded within the industrial sector indicate that cost pressures will be lower than expected in the years ahead, which illustrates the uncertainty surrounding how long it takes for resource utilisation to affect wage and price development.



## CHAPTER 4 – The economic outlook and inflation prospects

Industrial activity abroad is getting stronger and the recovery is broadening. The rise in international inflation has largely been due to the development of energy prices but, as resource utilisation rises in the period ahead, other price increases are expected to play an increasing role for inflation. In Sweden, growth is still good and economic activity is expected to strengthen further in the coming years. Demand for labour is also expected to be high in the period ahead but it will become increasingly difficult to match vacancies with jobseekers. Increased competition for labour is contributing to higher wage increases but the upturn in the rate of wage increases looks likely to be slower than in earlier assessments. Inflation is expected to stabilise around 2 per cent at the start of 2019, which is somewhat later than predicted in the previous forecast.

### International developments

#### Stronger industrial activity leading to broader global recovery

After a relatively weak 2016, the global economy is now in a phase of increasingly strong industrial activity and rising global trade. Forward-looking indicators such as the Purchasing Managers' Index, for example, turned up towards the end of 2016 and have strengthened further in recent months. The cyclical recovery in industrial output and foreign trade is expected to contribute to the upturn in economic activity broadening and investment strengthening. This upturn continues to be supported by an expansionary monetary policy. Fiscal policy on the global level will be largely neutral, but a more expansionary direction is expected in the United States, even if uncertainty over US economic policy is significant.

Despite the relatively favourable international economic activity, several factors are restraining global growth, particularly slightly further ahead. For example, these include weak underlying productivity growth and an aging population, primarily in developed countries but also increasingly in several emerging market economies. Political uncertainty involving an increased risk of setbacks can be added to this. All in all, global GDP growth is expected to rise gradually from 3.2 per cent in 2016 to 3.6 per cent in 2019. The increasing growth in KIX-countries, which are the countries important for the Swedish economy, is expected to be more moderate, from 2 per cent in 2016 to just over 2.2 per year in 2017 to 2019 (see Figure 4:1).

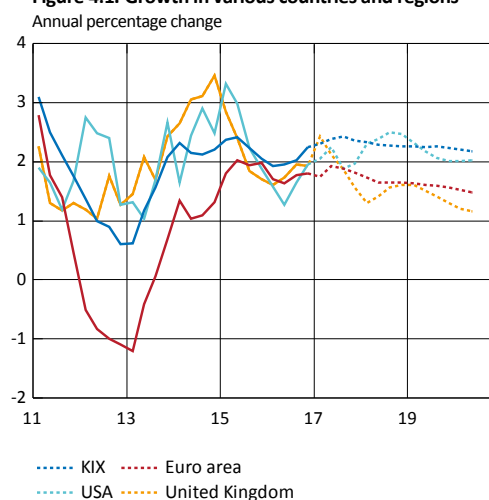
#### Economic activity will strengthen further in the United States

The economic upswing in the United States is one of the longest since the end of the Second World War according to the classification of economic cycles made by the National Bureau of Economic Research. However, growth has been moderate and there are still no signs that the economic

Table 4.1.

The forecast in brief
The economic upswing abroad will broaden as the industrial sector and foreign trade pick up pace. An increasing number of countries are included in the recovery.
International inflationary pressures are still weak but are expected to rise as resource utilisation becomes more strained.
Growth in Sweden will be restrained in the period ahead, but GDP is continuing to grow above trend and economic activity is strengthening further. Krona to appreciate slowly.
Increased matching problems on the labour market will lead to employment growth slowing down and unemployment levelling off, despite continued high demand for labour.
Rising resource utilisation is contributing to a higher rate of wage increases and towards inflation stabilising around 2 per cent at the start of 2019.

Figure 4:1. 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

upturn is about to break. After a slump in growth in the first six months of 2016, the economy picked up renewed impetus in the autumn and winter, among other reasons due to stronger consumption, a changeover in the stock cycle and a slowdown in the decline of the energy sector. The stabilisation of the energy sector has also benefited companies in the manufacturing industry, which have become increasingly optimistic. In the period ahead, it is expected to contribute towards investments increasing at a slightly faster rate.

The conditions for households continue to be relatively bright, manifested in clearly rising consumer confidence. Employment is continuing to rise, albeit at a slowing rate, and this, combined with a rising rate of wage increases, is contributing towards maintaining growth in household incomes. Household wealth has strengthened after several years of rising prices for real estate and shares. This is also supporting consumption.

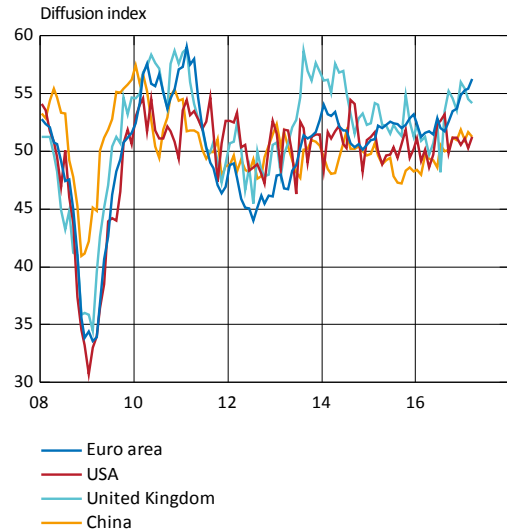
Over the forecast period, it is assumed that some fiscal policy stimulation measures will be implemented. Tax cuts are expected for wage-earners and entrepreneurs, as well as investments in infrastructure, which will contribute to higher demand in the economy. However, uncertainty surrounding these proposals is high as regards their design, the degree to which they will be supported and when it will become possible to implement them. Over the next few years, employment growth is expected to slow down gradually as supply on the labour market slackens. This will contribute towards a slowdown in GDP growth, even if slightly stronger productivity growth is expected to partially compensate for the supply restrictions on the labour market.

All in all, the expectation is for GDP growth to rise from 1.6 per cent in 2016 to 2.0 per cent this year. Next year, growth is expected to rise to 2.4 per cent, among other reasons due to fiscal policy investments, before then slowing down slightly again in 2019.

#### Continued recovery in the euro area

The economic recovery in the euro area has been underway since 2014. Unemployment has fallen from almost 12 per cent to 9.5 per cent, or by just over 3.5 million people. However, it is still clearly above the level seen in the years prior to the financial crisis and spare capacity is still deemed to be relatively high. Over the short-term perspective, growth seems to have shifted up slightly. Corporate confidence according to the Purchasing Managers' Index has risen slightly over the last six months and is now at the highest level since the start of 2011 (see Figure 4:2). As yet, however, outcomes such as industrial output have not risen at the same rate as the indicators. Household confidence also lies at a relatively high level, suggesting that consumption is continuing to develop relatively well. Over the present year, however, household consumption is expected to slow down slightly due to higher inflation undermining some of the increases

**Figure 4:2. Purchasing managers' index in various countries and regions**



Note. Diffusion index (DI) is a transformation of net numbers (NN):  
 $DI = NN/2 + 50$ .

Sources: ISM and Markit

in income. Wages are also expected to rise at a faster rate, providing support for incomes and consumption.

The corporate sector is facing slightly stronger international demand, which, together with rising capacity utilisation and good funding terms, is expected to contribute towards investments rising at a faster rate in the period ahead. Housing investments are also expected to turn up from low levels as housing prices continue to rise. According to the latest statistics, housing prices in 2016 were higher than in 2015 in almost all euro area countries. Even if short-term growth prospects look relatively bright and resilience towards various political events has so far been good, there remain political risks that could break the economic upswing. High indebtedness and weaknesses in the banking system, where there is a large proportion of non-performing loans, are other factors weighing the economy down.

All in all, GDP growth in the euro area is expected to increase slightly to 1.8 per cent in 2017 and then to fall marginally over the coming years. GDP will thereby continue to grow above trend over the forecast period, meaning that resource utilisation will gradually rise.

#### **British resilience but signs of weakening**

The United Kingdom's decision to leave the EU has, so far, not had any clear negative effects on the economy. Recently, however, indications that growth may be starting to slow down have started to become visible. For example, the retail sector has declined for several months in a row and households have become less optimistic. Signs of weakness are also visible regarding investments. The assessment is that the approaching withdrawal from the EU will increasingly negatively affect investments and recruitment decisions in the period ahead and that GDP growth will decrease from just over 2 per cent this year to just under 1.5 per cent in the coming years.

Uncertainty remains high over the future relationship between the EU and the United Kingdom. At the end of March, the United Kingdom activated Article 50, giving the British the right to leave the EU. At present, it seems most likely that the United Kingdom will leave the EU's single market and that it will therefore have to negotiate new trade agreements with both the EU and all countries with which the EU has trade agreements. Recently, a parliamentary election was called, to take place at the start of June. The Government hopes that this election will provide it with increased legitimacy in the negotiations with the EU.

#### **Higher growth in emerging economies**

The slightly stronger growth in emerging economies is largely being driven by the stabilisation of several commodity-exporting countries as commodity prices have risen. The Brazilian economy is certainly still struggling with major problems, but the downturn is expected to level off this year before then being followed by a cautious recovery. In Russia, GDP is expected to increase weakly this year after last year's stagnation.

China's readjustment towards more consumption-driven growth has also been an important driving force behind the development of other emerging market economies, not least the commodity-exporting countries. This rebalancing goes hand in hand with a slowing trend in growth in China. However, over the short-term perspective, growth has picked up renewed impetus, among other reasons as a consequence of major infrastructure investments. Over the last six months, optimism in the manufacturing industry has also strengthened tangibly, even if this can also be ascribed to stronger international demand. This year, the Chinese economy is expected to grow in line with the government's new goal of about 6.5 per cent, after which it will continue its slow downturn. Even if the Government has lowered its target for credit growth in 2017, the highly-indebted corporate sector continues to comprise a risk for the Chinese economy. Indebtedness is also high in several other emerging economies. The ongoing tightening of monetary policy in the United States and the stronger US dollar are making countries with large loans in dollars, such as Turkey, particularly vulnerable.

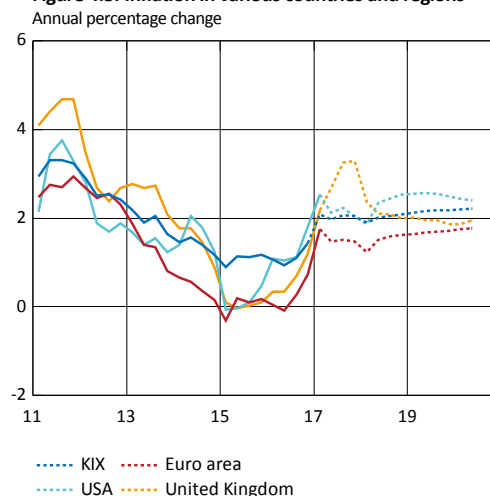
#### Low but rising inflationary pressures abroad

International inflation has clearly risen over the last six months (see Figure 4:3). This increase can primarily be explained by rising energy price increases and also, more recently, the development of food prices to a certain extent. In contrast, other prices are still rising slowly. In the period ahead, the positive contributions to inflation from energy prices are expected to abate. The forecast assumes a more or less unchanged price for oil, in line with pricing on the futures markets (see Figure 4:4). One reason that the market does not expect any upturn in the oil price despite the stronger economic activity is that the present level of the oil price is stimulating increased supply, with increasing numbers of oil rigs re-entering use in the United States, among other things.

In the United States, unemployment has fallen to what can be considered a long-term normal level. The United States is one of the few developed economies where a clear upward trend in the wage rate is discernible. Inflation excluding energy and food prices has also risen and is now close to 2 per cent. This year, the development of energy prices will also contribute towards raising CPI inflation to an average of 2.2 per cent. Over the next few years, inflation is expected to be slightly dampened due to smaller contributions from energy price increases, but this will be partly counteracted by other prices rising at a faster rate due to rising resource utilisation.

In the euro area, inflation is expected to rise from 0.2 per cent in 2016 to 1.6 per cent in 2017. However, the higher inflation in 2017 depends almost exclusively on the development of energy and food prices, while inflationary pressures in general will continue to be low. Unlike in the United States, spare capacity remains relatively plentiful and there are still no signs of a rising wage rate. Unemployment has certainly fallen to historically low levels in Germany, but wage increases there have been restrained by weak productivity growth and previously-

**Figure 4.3. Inflation in various countries and regions**



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 4.4. 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

implemented reforms on the labour market (for example, the so-called Hartz reforms, which included new rules for unemployment benefits). The last decade's wage increases in Germany have led to labour costs' share of added value rising slightly. In this sense, wage increases in Germany have been low. As unemployment falls further in the euro area, the wage rate is expected to slowly recover and inflation to rise.

Overall, inflation in the KIX countries is expected to rise from just over one per cent in 2016 to two per cent in 2017. The contribution made by energy prices will successively decrease over the course of 2017, but, at the same time, inflationary pressures in general will rise and inflation will stabilise at around 2 per cent over the coming years.

## Sweden

### Swedish economic activity still strong

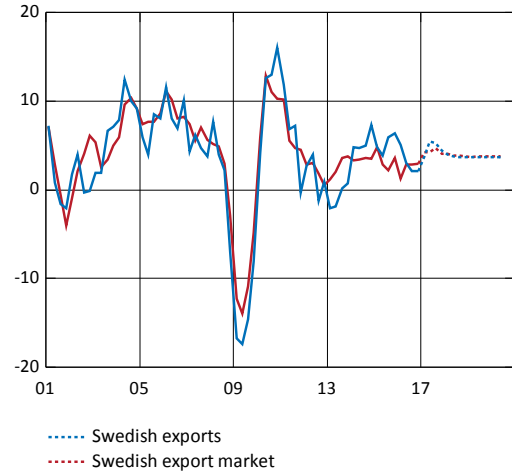
Growth in Sweden slowed down somewhat in 2016, compared with 2015, but GDP nevertheless increased by just over 3 per cent and the economic situation is strong. The expansionary monetary policy has contributed to high demand, among other effects by creating favourable financing conditions for housing construction. The large numbers of asylum seekers in autumn 2015 contributed towards a temporary upswing in the rate of increase of public consumption in 2015 and 2016. Growth will slow down slightly in the next few years as public consumption and housing construction grow at a slower rate. At the same time, this will be balanced by increased activity on many of Sweden's export markets.

Swedish export markets continued to develop relatively weakly in 2016 and growth in Swedish exports was modest last year (see Figure 4:5). The strong development in the fourth quarter and continued rising confidence indicators for many Swedish export markets at the start of 2017 are expected to contribute to slightly higher export growth in the period ahead. This development will also contribute towards investments by the business sector increasing. As housing construction meets increasingly clear capacity limitations, for example shortages of certain professional groups, housing investments' contributions to growth will also slow down. However, from a historical perspective, the number of newly-constructed homes will continue to be high in the years ahead (see Figure 4:6).

For households, both incomes and wealth have developed favourably on the whole, against the background of recent years' increasingly strong level of economic activity and rapid price increases for housing. For a longer period, households have also saved an increasing proportion of their disposable incomes and saving ratios are continuing to be at historically high levels, even if collective pension savings are excluded (see Figure 4:7). When growth in employment slows down and households' interest expenditure gradually starts to rise, there will consequently be scope for households to reduce their saving and thereby hold

**Figure 4:5. Exports and the Swedish export market**

Annual percentage change, calendar-adjusted data

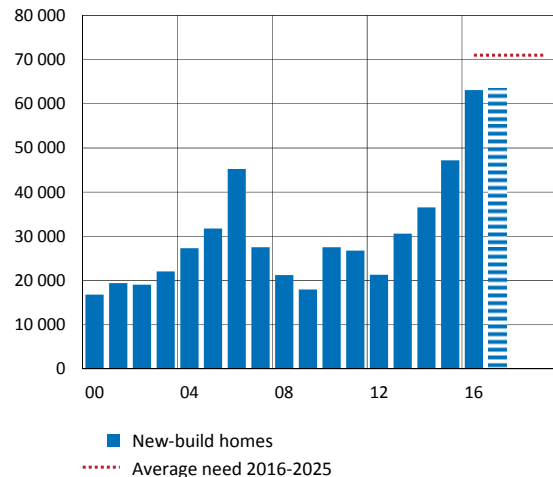


Note. The Swedish export market index aims to measure import demand in the countries to which Sweden exports. This is calculated by aggregating 32 countries and covers around 85 per cent of the total Swedish export market.

Sources: Statistics Sweden and the Riksbank

**Figure 4:6. Housing construction**

Number of homes

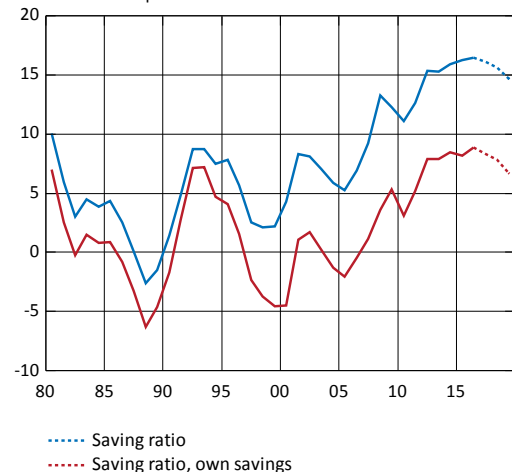


Note. Refers to new construction in multi-family houses and single-family houses. Outcome from SCB. Preliminary figures for 2016. The forecast refers to the estimate from the National Board of Housing in November 2016. Dashed line refers to the Housing Agency's forecast in July 2016 for average construction needs 2016-2025

Sources: National Board of Housing, SCB and the Riksbank

**Figure 4:7. Household savings with and without collective insurance savings**

Per cent of disposable income



Note. Total household savings include collective insurance savings. In the older definition, also called households' own total savings, collective insurance savings are excluded and the saving is the difference between income and consumption.

Sources: Statistics Sweden and the Riksbank

consumption up. Household consumption is expected to grow in line with its historically average growth rate over the coming years.

In the Spring Fiscal Policy Bill for 2017, the Government presented unfinanced measures for about SEK 3 billion. Combined with previously decided measures, the proposals imply that the government net lending will fall slightly this year to 0.6 per cent of GDP. The continued good development of the Swedish economy means that tax revenues will continue to increase. At the same time, the composition of the population, in which the proportions of young people and older people will increase in the period ahead, will contribute towards higher public consumption. However, compared with recent years, growth in public consumption will be restrained as expenditure for the reception of refugees is expected to decrease clearly in 2017 and 2018. The Riksbank assumes that the government net lending will increase slightly 2018 and 2019.

All in all, Sweden's GDP is expected to grow by 2.8 per cent in 2017 and then by an average of 2.2 per cent in 2018 and 2019 (see Figure 4:8). The high population growth means that the annual growth per capita will be about one percentage point lower.

**Housing prices and household debt increasing fast**

Even if the annual rate of price increase for housing slowed down slightly in 2016 compared with 2015, prices still increased by about 10 per cent on an annual basis, which is significantly faster than household incomes. These price increases are expected to decrease slightly in the years ahead, among other reasons due to lower income growth and because mortgage rates are not expected to fall any further. As households incur debt to fund housing purchases, household debt has also increased. Even if the rate of debt increase is slowing down in line with the development of housing prices, debt as a percentage of households' disposable incomes is expected to increase and reach about 197 per cent (see Figure 1:13).

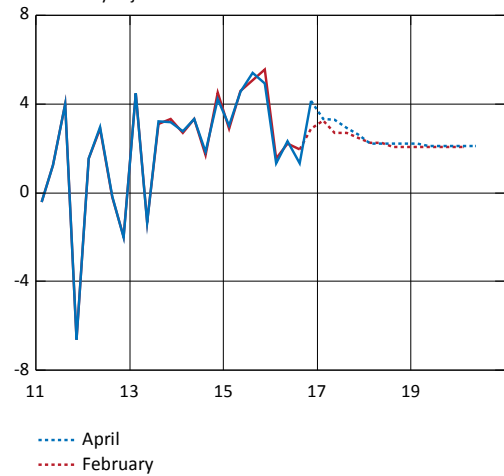
**Strong development on the labour market this year**

The situation on the labour market has continually improved since the start of 2013 (see Figure 4:9). The supply of labour has increased rapidly in recent years and is expected to continue to rise, this year in particular, due to the rapidly growing population. The strong economic situation also means that the demand for labour is expected to remain high in the years ahead. However, the employment rate in some groups in the population is already so high that it is expected to be increasingly difficult for companies to find the staff they need. For example, the employment rate in the age group 25–54 years with post-secondary education is close to 90 per cent. This will contribute towards employment growth dampening coming years.

Population growth will increase this year and can primarily be explained by many asylum seekers and family member immigrants being granted residence permits. Those of working

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

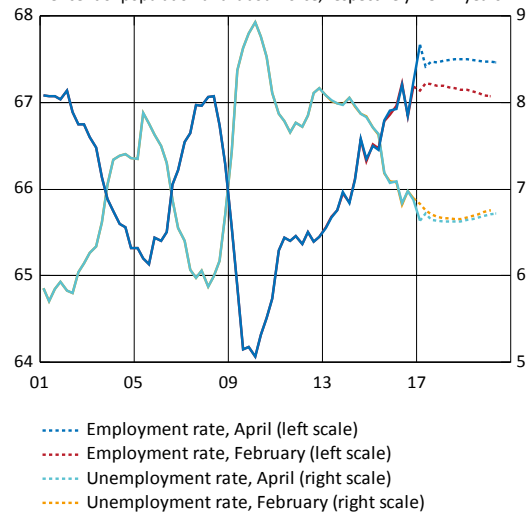
Quarterly change in per cent, calculated as an annual percentage change, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

**Figure 4:9. Employment and unemployment rate**

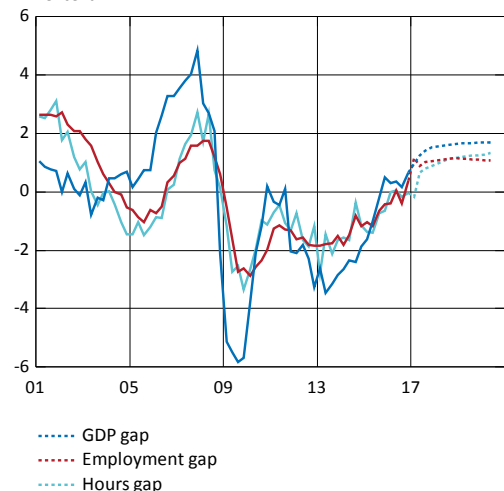
Per cent of population and labour force, respectively, 15-74 years.



Sources: Statistics Sweden and the Riksbank

**Figure 4:10. GDP gap, employment gap and hours gap**

Per cent



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

Sources: Statistics Sweden and the Riksbank



age are then expected to gradually enter the labour market. According to historical patterns, this group can be characterised by an initially low employment rate and high unemployment, as it takes time to become established on the Swedish labour market. The development of the composition of the labour force is therefore expected to lead to the employment rate ceasing to rise and levelling off. Unemployment is expected to start rising slightly in 2019.

### Imbalances on the labour market

At the same time as the employment rate has increased, various indicators of resource utilisation in the labour market have also risen (see Figure 4:10). According to the National Institute of Economic Research's Economic Tendency Survey, the proportion of companies reporting labour shortages has risen to a high level and the average recruitment time in the business sector is long (see Figure 4:11). An interview survey conducted by Arbetsförmedlingen (the Swedish public employment service) also indicates increasing labour shortages, particularly within the public sector. This is an indication that there are imbalances on the labour market since companies are not finding the staff they are looking for, despite there still being a large number of unemployed persons.

A common way of illustrating how well matching on the labour market is functioning is the so-called Beveridge curve that shows the relationship between unemployed persons and vacancies. A normal cyclical movement is that unemployment falls when the vacancy rate rises, and vice versa. If both vacancy rate and unemployment rise simultaneously, the curve shifts outward, which is a sign of impaired matching on the labour market.<sup>26</sup> For example, this happened in connection with the financial crisis, which meant that unemployment was higher at a certain level of vacancies than prior to the financial crisis (see Figure 4:12). During 2016, unemployment was largely unchanged, even though the vacancy rate rose. This development can be illustrated by an upward shift of the Beveridge curve and can probably be largely explained by unemployment now largely consisting of individuals lacking the competence demanded.<sup>27</sup>

### New three-year agreement indicates lower cost pressures than expected

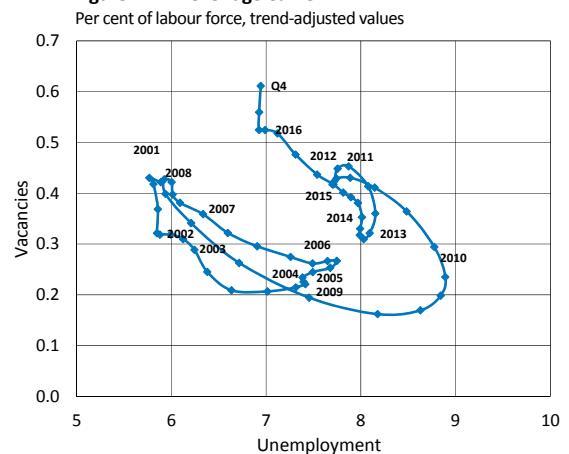
The social partners in the industrial sector recently signed a three-year agreement giving 6.5 per cent in labour cost increases over the entire agreement period, including allocations for part-time and flexible pensions. The new three-year agreement was concluded in a stronger economic situation and in a situation with higher inflation expectations than the previous one-year

**Figure 4:11. Average recruitment time and shortage of labour**  
Number of months and net figures, respectively



Sources: National Institute of Economic Research and Statistics Sweden

**Figure 4:12. Beveridge Curve**



Note. The year marks the first quarter of each year. Vacancies in the business sector.

Sources: Statistics Sweden and the Riksbank

### Collective bargaining in 2017 – so far

The ongoing wage bargaining rounds cover around 2.4 million employees and around 500 collective wage agreements are expected to be renegotiated this year. Early on in the wage bargaining process, in October 2016, the Swedish Trade Union Confederation (LO) announced that the unions had agreed on coordinating the demands for the agreements. The industrial sector trade unions were the first to present their demand for 2.8 per cent for one year, which was the same general wage increase demand as in the two previous bargaining rounds in 2013 and 2016. The employers in the industrial sector wanted much lower wage increases, with reference to international competitiveness, for instance.

On 31 March, the social partners in the industrial sector presented agreements that will act as a guide for other sectors of the labour market. The agreement entails labour cost increases of a total of 6.5 per cent over three years, including allocations for part-time and flexible pensions. The agreements signed so far since the industrial sector agreement, for instance in the retail trade, hotels and restaurants, have been largely in line with the cost benchmark of 6.5 per cent.

<sup>26</sup> The curve is also affected by the degree of separation, which is to say the proportion leaving a job during the time period and growth in the labour force.

<sup>27</sup> According to Arbetsförmedlingen's statistics, "vulnerable groups" now form about three-quarters of the registered unemployed. These are unemployed persons without upper-secondary education, those born outside Europe, those aged over 55 years and/or persons with functional impairments leading to reduced work capacity.

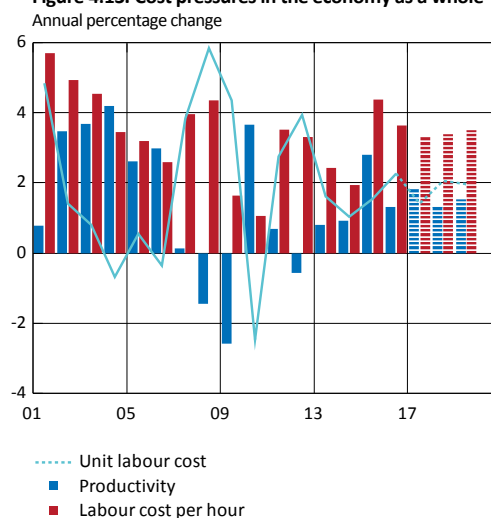
agreement. Despite this, the level is the same. Counted over the entire agreement period, the agreement gives an average of about 2.2 per cent per year.

Wage increases are not just determined by centrally-agreed wages. The Swedish labour market is characterised by matching problems and substantial labour shortages. In such a situation, wage increases over and above the central agreements usually rise. However, in recent years, these increases have been moderate, even if they seem to have been slightly larger in certain sectors over the course of 2016. Above all, wage increases over and above central agreements have increased in the construction sector. Other shortage occupations such as teachers and nurses have received higher wage increases than average. This cannot be seen in the agreements, but is, however, captured in the total wage increases.<sup>28</sup> The Riksbank's wage forecast refers to total wage increases and assumes that wage increases over and above central agreements will gradually increase over the forecast period. This view is supported by the Riksbank's latest business survey, among others, in which companies see rising wage drift ahead of them.

The wage agreements signed between the social partners in the industrial sector nevertheless indicate that the wage rate will be slightly lower than expected in the years ahead, so the Riksbank has therefore revised the wage forecasts down. According to short-term wage statistics, the wage rate is expected to rise gradually from about 2.4 per cent in 2016 to 3.2 per cent towards the end of the forecast period. The relatively modest wage rises despite increasingly strong economic activity could be due to several different factors, such as structural changes in the economy or to the financial crisis still affecting wages and prices around the world.

A lower wage rate suggests that cost pressures will rise more slowly, compared with earlier assessments. Last year, both hourly wages and hourly labour costs according to the National Accounts increased more than wages according to short-term wage statistics.<sup>29</sup> Over the forecast period, labour costs are expected to rise slightly faster than hourly wages due to centrally-agreed pension allocations. Productivity growth is expected to be stronger this year and, in the coming years, be around 1.5 per cent as an annual percentage change, which is to say approximately in line with the average development since the start of the century. The annual growth in unit labour costs is calculated to average just under 2 per cent per year (see Figure 4:13). All in all, unit labour costs have been revised downwards slightly more than labour costs have.

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



Sources: Statistics Sweden and the Riksbank

<sup>28</sup> Like many other professional groups, primarily within the public sector, teachers and nurses have so-called figureless agreements or 'zero agreements'. These agreements lack centrally-specified wage increases. Instead, wage increases are determined by negotiations at a local level.

<sup>29</sup> These measures are a ratio of variables from two different statistical sources, that is wage and labour cost totals reported by the Swedish Tax Agency and the number of hours worked from the labour force survey (LFS). But the measure is more comprehensive and also includes more cyclical components, which probably explains the stronger development of these measures last year.



**Inflation to rise eventually**

CPIF inflation has shown a rising trend since 2014. In particular, energy and food prices have increased at a faster rate recently. However, the rate of increase of energy prices is expected to slow down in the period ahead as the price of oil levels off. Even if the development of energy prices is disregarded, the rate of increase of the CPIF has risen since 2014. However, inflation measured as the CPIF excluding energy is lower than it is measured as the CPIF, and lower than it was one year ago. The Riksbank considers that the conditions are in place for the upturn in inflation to continue. One factor suggesting rising inflation is that resource utilisation in the economy has risen and is expected to continue to be above normal over the coming years. The rising resource utilisation seen over the last year has not yet had its full impact on inflation, as this is usually affected after a time lag.<sup>30</sup> Stronger economic activity, both in Sweden and abroad, is leading to companies' costs increasing more rapidly, at the same time as it is becoming easier for companies to raise their prices.

Another factor that affects inflation is the krona exchange rate. The krona is weaker than it was a year ago and even weaker compared with the previous forecast in February (see Figure 4:14). Like resource utilisation, changes in the exchange rate affect inflation after a delay. The weakening of the krona over the last year is thereby yet to have a full impact on inflation.

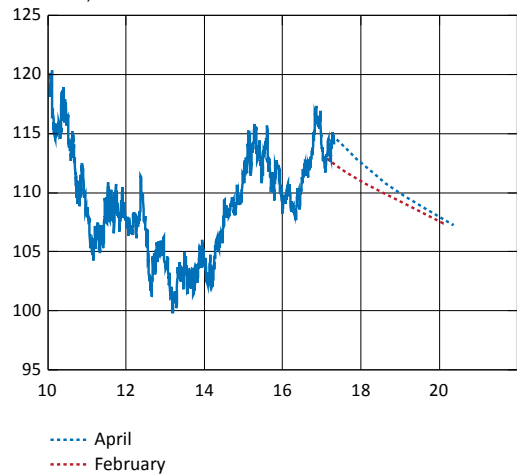
Over the coming years, the exchange rate is expected to strengthen slightly, which will contribute towards restraining inflation. Higher resource utilisation and higher international price pressures are then expected to contribute towards continued rising inflation.

**Inflation expected to stabilise around 2 per cent at start of 2019**

The forecast for inflation measured as the CPIF and the CPIF excluding energy has been revised slightly downwards for 2018 and 2019, compared with the Riksbank's forecast in the Monetary Policy Report from February. It is thereby expected to take slightly longer before inflation stabilises around 2 per cent. Compared with the previous forecast, unit labour costs are expected to increase slightly more slowly but, at the same time, the krona is expected to be weaker. CPIF inflation is expected to rise slowly over the next few years and to stabilise around 2 per cent at the start of 2019 (see Figure 4:15).

The development of energy prices in 2016 and 2017 will lead them to increase more rapidly than other prices over the next year and will contribute towards inflation becoming higher when measured according to the CPIF than according to the CPIF excluding energy. The EU harmonised measure of inflation, HICP, does not include households' mortgage costs. As a result of the rapid rise in housing prices, the CPIF will increase slightly more rapidly than the HICP over the forecast period (see Figure 4:16). When the repo rate, and thereby mortgage rates, starts to rise in

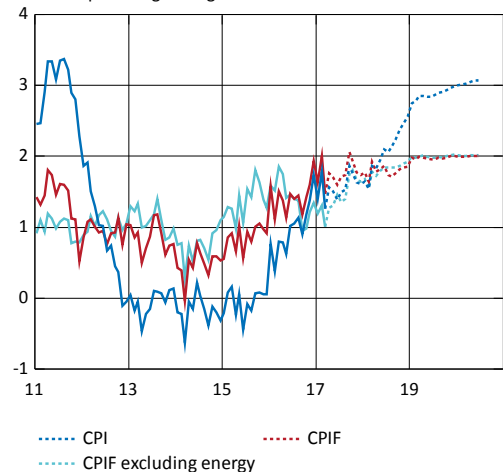
**Figure 4:14. KIX-weighted nominal exchange rate Index, 18 November 1992 = 100**



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

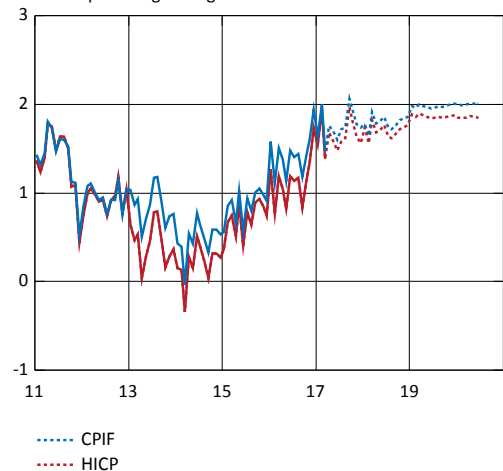
**Figure 4:15. CPI, CPIF and CPIF excluding energy Annual percentage change**



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

Sources: Statistics Sweden and the Riksbank

**Figure 4:16. CPIF and HICP Annual percentage change**



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

Sources: Statistics Sweden and the Riksbank

<sup>30</sup> See also the article "The relationship between resource utilisation and inflation" in the Monetary Policy Report, October 2016.

2018, household mortgage costs will also rise and the CPI will then increase more rapidly than the CPIF.

## ARTICLE – The economic consequences of increased protectionism

In recent years, support for free trade has declined in some parts of the world and new trade barriers have arisen. The US president has declared that he is willing to circumvent or ignore internationally-agreed regulations and to introduce high tariffs. In Europe, parties with a protectionist agenda have gained increasing support in the opinion polls. At the most recent G20 meeting, the explicit vow to resist all forms of protectionism that has been included in the communiqués following every summit meeting was omitted for the first time since the global financial crisis. Increased protectionism in the world would slow down global growth and probably reduce demand for Swedish exports. At the same time, inflation may become higher in those countries in which trade barriers are raised.

During the Great Depression of the 1930s, many countries used trade barriers to protect their economies and thereby aggravated the deep recession in the world economy. In an attempt to prevent a repeat of these experiences, the multilateral trade agreement GATT (General Agreement on Tariffs and Trade) was signed in 1947.

Since then a further seven multilateral trade negotiation rounds have been held, and the most recent one led to the establishment of the World Trade Organization (WTO) in 1995, which now has 164 member countries.<sup>31</sup> Through the agreements, the member countries have, by lowering their trade barriers, given other countries greater access to their markets and they have received greater access to the other countries' markets in exchange.

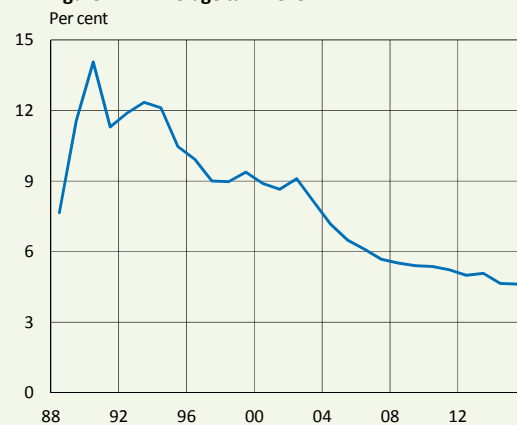
A number of regional and bilateral integration agreements have also been signed in recent decades. This includes the EU and the free trade agreements the EU has with several neighbouring countries, as well as NAFTA (the North American Free Trade Agreement) between Canada, Mexico and the United States.

### The results of the long liberalisation trend

All in all, the multilateral and regional trade agreements have meant that the average global tariff level has been reduced considerably, from over 20 per cent at the time of the first GATT to around 5 per cent today (see Figure 4:17).<sup>32</sup>

This 70-year history of multilateral and regional trade agreements has contributed to global trade growing in significance for the world economy as a whole (see Figure 4:18).

**Figure 4:17. Average tariff level**



Note. Import-weighted average of applied tariff rates

Sources: WITS (UN statistics division, UNCTAD, WTO and the World Bank)

**Figure 4:18. Global imports of goods**



Sources: WTO, the World Bank and the Riksbank

<sup>31</sup> In 2001, the so-called Doha round was initiated, but it has not yet been concluded.

<sup>32</sup> For estimates of the average global tariff level at the time of the first GATT, see further WTO (2007), World Trade Report – Six decades of multilateral trade cooperation: What have we learnt? and Bown, C. P. and Irwin, D. A. (2015), "The GATT's Starting Point: Tariff Levels circa 1947", National Bureau of Economic Research, Working Paper 21782. In addition to tariffs, there are a number of different

trade barriers which may have substantial effects that may be difficult to measure. The GATT therefore includes a number of clauses aimed at limiting the use of other trade barriers and where necessary replacing them with tariffs. See further Staiger, R. (2012), "Non-tariff Measures and the WTO", WTO Staff Working Paper, ERSD-2012-01.

Freer trade has also contributed to consumers around the world gaining higher real incomes and access to a larger supply of goods and services.<sup>33</sup> Their real incomes have become higher because international trade benefits productivity, that is, makes it possible to get more out of the available resources.<sup>34</sup> One reason is that freer trade increases the possibilities for international specialisation – countries can produce more of the goods and services that make the best use of their particular assets in the form of available land, capital, labour and natural resources.

Within individual sectors, international trade may moreover have benefitted more productive companies at the cost of less productive companies.<sup>35</sup> The possibility to reach a larger market also appears to stimulate innovation,<sup>36</sup> at the same time as free trade gives companies the opportunity to access potentially cheaper and better supplies of input goods. The productivity of the individual company may also benefit from being exposed to greater competition from abroad.<sup>37</sup>

However, liberalisation of trade could simultaneously disadvantage parts of the population. Goods that require a relatively large input of labour in their production (such as clothing) tend to be relatively cheap to manufacture in countries where there is a large supply of low-skilled labour. When trade is liberalised, the developed economies therefore increase their import of labour-intensive production from these countries. The domestic low-skilled labour thus indirectly meets increased competition from the low-skilled labour in other countries, and is forced to accept lower real wages or, in the worst case, unemployment. It would probably suffice to distribute part of the profits falling to other groups to compensate those losing out on freer trade. However, in practice, it is difficult to design a functioning model for compensation.<sup>38</sup>

### Tendencies towards increased protectionism

There may thus be groups who feel that free trade disadvantages them. In addition, opinion in favour of more protectionist policies tends to become stronger in conjunction with economic crises, as happened in the 1930s, in connection with the Great Depression. The G20 countries have therefore emphasised the importance of not following this pattern in the wake of the global financial crisis.

Nonetheless, there are signs that protectionist measures have become more common in recent years (see Figure 4:19). This is not primarily a matter of tariffs but of the introduction of different types of trade barriers, whose effects are more difficult to judge. At the same time, political representatives with a protectionist agenda have gained ground in several parts of the world. The US president has declared himself willing to introduce high tariffs for certain countries and, at the last G20 summit, the clear rejection of protectionism was left out of the joint communique for the first time.

### Existing agreements restrict possibilities for protectionist behaviour to some extent

The great majority of countries of greater significance to the development of the world economy or the Swedish economy are members of the WTO and participate in various forms of regional integration agreements, such as free trade agreements. These agreements generally have clauses regulating cancellation or withdrawal. For NAFTA, a period of notice of six months applies, which is a common arrangement in international agreements. For the EU, which involves more far-reaching integration, the corresponding period between notification and withdrawal is two years. So far, it has been highly unusual for countries to leave a regional integration agreement – the upcoming British withdrawal from the European Union is an exception.

If a country withdraws its membership of a regional integration agreement, it is still subject to its commitments as a WTO member. Under the prevailing WTO agreement, tariffs may not be raised above the levels to which a country has committed and, if any country is offered lower tariffs, this must also apply to all other countries. If, for example, the United States were to leave NAFTA, it could introduce tariffs towards Canada and Mexico up to the levels it has committed to under the WTO. Towards Mexico, this would mean an average tariff increase of about 4 percentage points, which is to say significantly less than the 35 percentage points mentioned during the presidential campaign.

A US president could, theoretically, under US legislation, initiate tariff increases above and beyond this without the explicit support of Congress. This could be done by citing national security interests or a large current account deficit.<sup>39</sup>

<sup>33</sup> For an overview and interpretation of empirical studies in this field, see Goldberg P. and Pavcnik, N. (2016), "The effects of trade policy", Chap. 3 in Bagwell K. and Staiger, R. (eds.), *Handbook of Commercial Policy*, New York: Elsevier North Holland.

<sup>34</sup> Ibid. and IMF (2016), "Is the Trade Slowdown Contributing to the Global Productivity Slowdown? New Evidence", Box 2.1. in *World Economic Outlook*, October 2016.

<sup>35</sup> See Melitz, M. (2003), "The Impact of Trade on Intra-industry Reallocations and Aggregate Industry Productivity", *Econometrica*, vol. 71, no. 6, pp. 1696-1725.

<sup>36</sup> The way that imports from China affected technology and productivity in OECD countries is described in Bloom, N., Draca, M. and Van Reenen, J. (2016), "Trade Induced Technical Change? The Impact of Chinese Imports on Innovation, IT and Productivity", *Review of Economic Studies*, vol. 83, no. 1, pp. 87-117. The effects of the 1990s trade liberalisation on global innovation tendencies have been estimated by Coelli, F., Moxnes, A. and Ulltveit-Moe, K.-H. (2016), "Better, Faster, Stronger:

Global Innovation and Trade Liberalization", Centre for Economic Policy Research, Discussion Paper 11506.

<sup>37</sup> Helpman, E. and Krugman, P. (1985), *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy*, MIT Press.

<sup>38</sup> Feenstra, R. C. (1998), "Integration of Trade and Disintegration of Production in the Global Economy", *Journal of Economic Perspectives*, vol. 12, pp. 31-50. Various forms of labour market programme are often mentioned as ways of compensating for trade-related losses of income and to facilitate employability within expanding sectors, see further OECD (2005), "Trade-adjustment Costs in OECD Labour Markets: A Mountain or a Molehill?", Chap. 1 of *OECD Economic Outlook*.

<sup>39</sup> Hufbauer, G. C. (2016), "Could a President Trump Shackle Imports?", in "Assessing Trade Agendas in the US Presidential Campaign", Peterson Institute for International Economics, Briefing 16-6. The WTO regulations also allow higher tariffs than agreed under such circumstances. Moreover, countries may have the right to protect

However, if this were to be carried out, the affected countries would probably claim a breach of the WTO's regulations and gain the right to adopt measures reducing the United States' access to their markets to a corresponding extent. There also exists a possibility for a country to entirely leave the WTO partnership.<sup>40</sup> In such a case, the country would no longer be subject to the tariff limitations agreed but would at the same time risk facing higher tariffs than those applying to WTO members.<sup>41</sup>

The agreements regulating world trade could thus make it costly, but not impossible, for countries to take a more protectionist stance.

### Effects of global protectionism

Widespread global protectionism would lead to a loss of the benefits brought about by previous trade liberalisation (see above). Global real incomes would fall and there would be a risk that the supply of goods and services would diminish.

Small economies like Sweden's would be impacted more than larger ones if the world, as a whole, started to restrict international trade. A significant part of Sweden's output is concentrated to goods and services produced on a large scale and sold across the entire world. In addition, Swedish consumption and output largely utilise imported goods and services.

### Effects of bilateral trade wars

If the increase in protectionism is restricted to trade conflicts between specific countries, there would still be noticeable consequences for the global economy. A trade war between the United States and China would have a clear negative impact on both countries. In the short term, before trade and production patterns have time to adjust, the effects could be very extensive, not least in communities in which companies with close connections to international trade play an important part.<sup>42</sup> Over the longer term, the countries involved would have to deal with the efficiency losses following from impaired access to an important export market, as well as impaired access to part of the global output of intermediate and consumer goods.

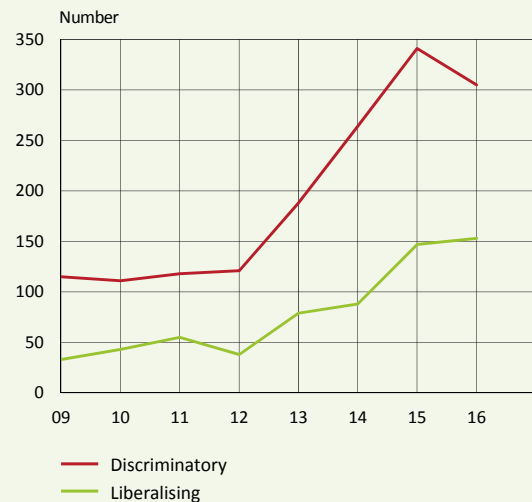
Other countries are also affected by a trade war between large economies. However, it is difficult to say in what ways and to what extent. In the short run, it can lead to problems for companies that are involved at some stage in the chain of

production of goods traded between the USA and China.<sup>43</sup> A powerful reaction by the financial markets to a spiralling trade war could strengthen the negative effects on investment and consumption around the world. On the other hand, if the United States and China were to trade less with each other, they could come to trade more with other countries, such as Sweden.<sup>44</sup>

### Increased protectionism would slow down global growth

All in all, increased protectionism would impede global output of goods and services and would probably reduce demand for Swedish exports. At the same time, more expensive imports of both consumer goods and input goods would lead to temporarily higher inflation in the countries raising trade barriers.

**Figure 4:19. Trade-influencing measures introduced by G20 countries**



Note. Discriminatory (liberalising) measures are those measures that Global Trade Alert deems increase (reduce) discrimination in favour of domestic producers and are therefore colour-coded as red (green). Only measures both implemented and reported in the respective calendar year have been included. See also Evenett, S. J. and Fritz, J. (2016), "FDI Recovers? The 20th Global Trade Alert Report", Centre for Economic Policy Research, CEPR Press.

Source: Global Trade Alert

themselves against so-called dumping (selling goods below cost price), imports that are supported by unlawful subsidies, and too rapid import increases within a particular sector.

<sup>40</sup> Article 15 in the WTO treaty specifies that a country's membership of the WTO and participation in the accompanying trade agreements can be terminated after 6 months' notice in writing, see WTO (1994), Agreement Establishing the World Trade Organization.

<sup>41</sup> For a more detailed review of the principles behind and the functions of the world trading system in general and the WTO in particular, see Hoekman, B. M. and Kostecky, M.M. (2009), *The Political Economy of the World Trading System: The WTO and Beyond*, third edition, Oxford University Press.

<sup>42</sup> For a review of the possible effects of a trade war on cities and regions in

the United States, see Noland, M., Robinson, S. and Moran, T. (2016), "Impact of Clinton's and Trump's Trade Proposals", in "Assessing Trade Agendas in the US Presidential Campaign", Peterson Institute for International Economics, Briefing 166.

<sup>43</sup> The effects of this depend on what expectations companies and participants on the financial markets have for how long-lasting a trade war may be. If it is expected to be short-term, those affected by higher costs for input goods and/or worsened conditions on a market may adjust their profit margins to some degree and the effects will be lesser than in the event of a trade war lasting for a longer time.

<sup>44</sup> Other countries' export goods would become slightly more competitive in the United States and China if Chinese and US goods respectively were to be subject to higher tariffs. In addition, purchasers of US (Chinese) goods and services would have less competition from Chinese (US) purchasers and could thus obtain more advantageous import prices.

## Tables

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

**Table 1. Repo rate forecast**

Per cent, quarterly averages

	Q4 2016	Q1 2017	Q2 2017	Q2 2018	Q2 2019	Q2 2020
Repo rate	-0.5	-0.5 (-0.5)	-0.5 (-0.5)	-0.5 (-0.4)	0.0 (0.1)	0.5

Source: The Riksbank

**Table 2. Inflation**

Annual percentage change, annual average

	2015	2016	2017	2018	2019
CPI	0.0	1.0	1.6 (1.6)	2.1 (2.1)	2.9 (2.9)
CPIF	0.9	1.4	1.8 (1.7)	1.8 (1.8)	2.0 (2.1)
CPIF excl. energy	1.4	1.4	1.4 (1.5)	1.8 (1.9)	2.0 (2.1)
HICP	0.7	1.1	1.6 (1.6)	1.7 (1.8)	1.9 (2.0)

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

	2015	2016	2017	2018	2019
Repo rate	-0.3	-0.5	-0.5 (-0.5)	-0.4 (-0.3)	0.0 (0.2)
10-year rate	0.8	0.5	0.9 (1.0)	1.6 (1.8)	2.3 (2.4)
Exchange rate, KIX, 18 November 1992 = 100	112.6	111.7	113.6 (112.0)	111.2 (110.1)	109.0 (108.4)
General government net lending*	0.3	0.9 (0.5)	0.6 (0.2)	0.7 (0.5)	0.9 (0.8)

\* 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	2015	2016	2017	2018	2019
Euro area	0.14	0.47	1.9	1.7	1.8 (1.7)	1.7 (1.7)	1.6 (1.6)
USA	0.19	0.09	2.6	1.6	2.0 (2.3)	2.4 (2.3)	2.1 (2.1)
Japan	0.06	0.03	1.2	1.0 (1.0)	1.2 (1.1)	0.9 (0.9)	0.8 (0.8)
China	0.15	0.08	6.9	6.7	6.6 (6.4)	5.9 (5.8)	5.7 (5.7)
KIX-weighted	0.79	1.00	2.3	2.0 (2.0)	2.4 (2.2)	2.3 (2.3)	2.2 (2.2)
World (PPP-weighted)	1.00	—	3.4	3.2 (3.1)	3.4 (3.4)	3.6 (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 National Institute of Economic Research updates the weights for the KIX krona index at the start of every year with a time lag of three years. The figures in the table are based on the new KIX weights for 2012 that are used for 2015, and on an assumption that the weights will develop according to the trend of the past five years in the coming forecast years.

CPI	2015	2016	2017	2018	2019
Euro area (HICP)	0.0	0.2	1.6 (1.7)	1.5 (1.4)	1.7 (1.6)
USA	0.1	1.3	2.2 (2.6)	2.3 (2.5)	2.5 (2.5)
Japan	0.8	-0.1	0.7 (0.7)	1.2 (1.4)	1.7 (1.7)
KIX-weighted	1.1	1.1 (1.1)	2.0 (2.2)	2.0 (2.0)	2.2 (2.1)

	2015	2016	2017	2018	2019
Policy rates in the rest of the world, per cent	0.1	-0.1	-0.1 (-0.1)	0.1 (0.0)	0.3 (0.2)
Crude oil price, USD/barrel Brent	53.5	45.1	54.8 (56.4)	55.2 (56.6)	54.6 (56.2)
Swedish export market	3.4	2.5 (2.1)	4.3 (3.4)	3.9 (4.1)	3.8 (3.8)

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

	2015	2016	2017	2018	2019
Private consumption	2.7	2.2 (2.2)	2.1 (2.5)	2.5 (2.7)	2.4 (2.4)
Public consumption	2.5	3.1 (3.6)	1.4 (1.6)	1.2 (1.1)	1.2 (1.1)
Gross fixed capital formation	7.0	5.9 (6.9)	3.9 (3.4)	3.7 (3.1)	3.0 (2.8)
Inventory investment*	0.3	0.1 (0.2)	-0.3 (-0.1)	0.0 (0.0)	0.0 (0.0)
Exports	5.6	3.4 (3.0)	4.2 (3.6)	3.6 (3.6)	3.6 (3.6)
Imports	5.5	3.7 (4.3)	2.6 (3.4)	4.0 (4.0)	4.0 (4.0)
GDP	4.1	3.3 (3.4)	2.8 (2.5)	2.3 (2.2)	2.1 (2.1)
GDP, calendar-adjusted	3.8	3.0 (3.2)	3.1 (2.7)	2.4 (2.3)	2.2 (2.1)
Final figure for domestic demand*	3.5	3.2 (3.5)	2.3 (2.4)	2.3 (2.3)	2.1 (2.1)
Net exports*	0.3	0.0 (-0.4)	0.9 (0.2)	0.0 (0.0)	0.0 (0.0)
Current account (NA), per cent of GDP	4.7	4.9 (4.2)	5.6 (4.3)	5.4 (4.1)	5.2 (3.9)

\*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

	2015	2016	2017	2018	2019
Population, aged 15–74	0.7	0.9	1.1 (1.1)	0.7 (0.7)	0.5 (0.6)
Potential hours worked	0.8	0.7 (0.7)	0.6 (0.6)	0.6 (0.5)	0.5 (0.5)
GDP, calendar-adjusted	3.8	3.0 (3.2)	3.1 (2.7)	2.4 (2.3)	2.2 (2.1)
Number of hours worked, calendar-adjusted	1.0	1.7 (1.8)	1.2 (1.2)	1.1 (0.9)	0.6 (0.6)
Employed, aged 15–74	1.4	1.5	1.8 (1.3)	0.7 (0.7)	0.5 (0.5)
Labour force, aged 15–74	0.8	1.0	1.5 (1.1)	0.7 (0.6)	0.5 (0.6)
Unemployment, aged 15–74 *	7.4	6.9	6.7 (6.7)	6.6 (6.7)	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

	2015	2016	2017	2018	2019
Hourly wage. NMO	2.4	2.4 (2.5)	2.8 (3.0)	3.1 (3.3)	3.2 (3.5)
Hourly wage. NA	3.5	3.2 (2.9)	3.2 (3.4)	3.3 (3.6)	3.4 (3.7)
Employers' contribution*	0.9	0.5 (0.6)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)
Hourly labour cost. NA	4.4	3.6 (3.5)	3.3 (3.4)	3.4 (3.6)	3.5 (3.7)
Productivity	2.8	1.3 (1.4)	1.8 (1.5)	1.3 (1.5)	1.5 (1.4)
Unit labour cost	1.5	2.3 (2.1)	1.4 (1.9)	2.1 (2.1)	1.9 (2.2)

\* 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





**SVERIGES RIKSBANK**  
SE - 103 37 Stockholm  
(Brunkebergstorg 11)  
Tel +46 8 - 787 00 00  
Fax +46 8 - 21 05 31  
registratorn@riksbank.se  
www.riksbank.se

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