



# Monetary Policy Report

February 2013



## Monetary Policy Report

The Riksbank's Monetary Policy Report is published three times per year. The report describes the deliberations made by the Riksbank when deciding what would be an appropriate monetary policy.<sup>1</sup> The report contains a description of the future prospects for inflation and economic activity based on the interest rate path that the Riksbank currently considers will provide a well-balanced monetary policy. Each report also contains a description of the new information received since the previous report and an assessment of how the Riksbank views the current economic situation.

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)). In the spring this takes the form of a report entitled "Material for assessing monetary policy". In the autumn it takes the form of the Monetary Policy Report.

The Executive Board decided to adopt the Monetary Policy Report at its meeting on 12 February 2013. The Report is available on the Riksbank's website, [www.riksbank.se](http://www.riksbank.se). From this address a printed version of the report can be ordered free of charge or the report can be downloaded as a PDF file.

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

# Monetary Policy in Sweden

## MONETARY POLICY STRATEGY<sup>2</sup>

- 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 with a view to achieving sustainable growth and high employment. This is achieved through the Riksbank, in addition to stabilising inflation around the inflation target, also striving to stabilise production and employment around long-term sustainable paths. 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, among other things, its own assessment of the future path for the repo rate. The interest 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 for monetary policy to be well-balanced. A well-balanced monetary policy is 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 the repo rate and the repo rate path 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 repo rate 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 during a year, at which it makes decisions regarding the repo rate. In connection with three of these meetings, a Monetary Policy Report is published and in connection with the other three meetings, a Monetary Policy Update is published. 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 interest rate decision and to see the arguments made by the different Executive Board members.

## PRESENTATION OF THE INTEREST RATE DECISION

The interest rate 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 members of the Executive Board voted and provides the main motivation for any reservations entered. A press conference is held on the day following the monetary policy meeting.

<sup>2</sup> A detailed description of the monetary policy strategy is given in the document *Monetary Policy in Sweden*. This document is available as a PDF file on the Riksbank's website [www.riksbank.se](http://www.riksbank.se).

# Contents

- Monetary policy considerations – a summary **5**
- CHAPTER 1 – The economic outlook and inflation prospects **7**
  - Summary: Low growth in the Swedish economy with some positive signs **7**
  - Recovery amidst uncertainty abroad **9**
  - Gradually brighter economic prospects in Sweden **12**
  - Monetary policy considerations **16**
- CHAPTER 2 – Alternative scenarios and risks **19**
  - Alternative scenario: Weaker labour market **20**
  - Alternative scenario: Uncertain recovery abroad **24**
  - Alternative paths for the repo rate **25**
- CHAPTER 3 – The current state of the economy **29**
  - Financial markets **29**
  - International economic situation **32**
  - Swedish economy **34**
- ARTICLES
  - Severe fiscal tightening avoided in the United States **39**
  - The household balance sheet and the macroeconomic assessment **42**
  - Perspectives on monetary policy expectations and forward rates **48**
- Appendix **53**
  - Tables **54**
  - Articles 2010-2012 **58**
  - Interest rate decisions 2008-2012 **59**
  - Glossary **60**



## ■ Monetary policy considerations – a summary

### ■ Repo rate unchanged at 1.0 per cent

**Growth in the Swedish economy is still weak and inflationary pressures are low. But there are some positive signs pointing towards stabilisation and strengthening in economic activity over the year. Developments are in line with the assessment made by the Riksbank in December. The repo rate needs to remain low to support the economy and to ensure inflation rises to the target of 2 per cent. The Executive Board of the Riksbank has therefore decided to hold the repo rate unchanged at 1.0 per cent. The repo rate is expected to remain at this low level over the coming year.**

### ■ Low growth but some positive signs

The Swedish economy is still being affected by the economic crisis in the euro area. The problems in the countries suffering debt crises are still a source of uncertainty and weak demand. This will contribute to Swedish GDP growth also being weak during the first half of the year. However, there are some positive signs. The unease on the financial markets has declined, and households and companies, both in Sweden and abroad, have become slightly more optimistic with regard to the future. At the same time, developments in the emerging economies are strong and the recovery in, for instance, the United States is continuing. Altogether, this implies that Swedish GDP growth will gradually increase over the year, although there is a risk of setbacks.

The labour market is affected by developments in GDP, but with some time lag. The increase in employment is now coming to a halt, and unemployment is expected to rise slightly over the year. All in all, resource utilisation in the economy is now expected to be lower than normal. As GDP growth picks up, employment will rise, however, and unemployment will fall.

### ■ Low repo rate to attain inflation target and support the economy

The weak economic developments in Sweden, together with falling prices on imported goods have contributed to low inflationary pressures. The repo rate needs to remain low for inflation to rise towards the target. The Executive Board of the Riksbank has therefore decided to hold the repo rate unchanged at 1.0 per cent. The low interest rate supports economic activity so that inflation will rise towards the target of 2 per cent. The repo rate is expected to remain at this low level for around a year. This repo-rate path will contribute to CPIF inflation being close to 2 per cent from the middle of 2014 and to resource utilisation normalising during the forecast period. Household debt as a percentage of their income is still high and the risks this entails for the economy in the long run still remain.

### ■ The repo-rate path is a forecast, not a promise

Developments abroad, particularly in the United States and the rapidly-growing economies in Asia, could be stronger than expected, which may lead to higher demand in the Swedish economy and higher inflationary pressures. This would justify a higher repo-rate path. At the same time, there are other factors that could mean the repo rate needed to be lower. At present, inflationary pressures are low and un-employment is rising. If unemployment were to increase more and inflation were to be lower than expected, the repo-rate path might need to be lower.



## ■ CHAPTER 1 – The economic outlook and inflation prospects

**The Swedish economy is still being affected by the economic crisis in the euro area. Concern among market participants has declined and uncertainty among households and companies has also fallen somewhat. However, major challenges remain and there is a risk of setbacks. Recent developments in Sweden and abroad have been largely in line with the assessment in the December Monetary Policy Update and the forecasts remain more or less unchanged.**

**The forecasts are based, as before, on the assumption that problems in the euro area will be managed so that confidence among households and companies, both in Europe and Sweden, will gradually return over the course of this year. This means that growth in demand will strengthen in Sweden and on our most important export markets. However, growth in the Swedish economy will be weaker than normal in the coming period and unemployment is expected to rise this year and then gradually begin to decline next year. This will contribute to inflation remaining low this year and then increasing as economic activity strengthens and resource utilisation rises.**

**The repo rate needs to remain low to support the recovery and enable inflation to attain the target of 2 per cent. The Executive Board of the Riksbank has therefore decided to hold the repo rate unchanged at 1 per cent. The repo rate is expected to remain at this low level for roughly one year, after which it will begin to be raised gradually.**

### Summary: Low growth in the Swedish economy with some positive signs

#### ■ Focus still on euro area challenges

Developments in the euro area are still marked by the economic crisis. The measures taken in individual euro countries, at EU level and by the ECB have contributed to reducing the uncertainty among market participants. This is reflected, for instance, in rising asset prices and slightly smaller spreads between government bond rates in the crisis countries and in Germany. The crisis countries are, however, facing high funding costs and several banks are dependent on the ECB for their funding. Major challenges remain before long-run sustainable solutions are in place, and there is a risk of setbacks. It is assumed in the forecast, as before, that the euro crisis will be managed so that confidence among households and companies gradually returns this year. This will enable growth in the euro area to gradually increase during the forecast period.

In the United States the acute threat of the fiscal cliff has been warded off and the recovery on the housing and labour markets is continuing. Continued fiscal policy consolidation is necessary, but will hold back demand for some time to come.

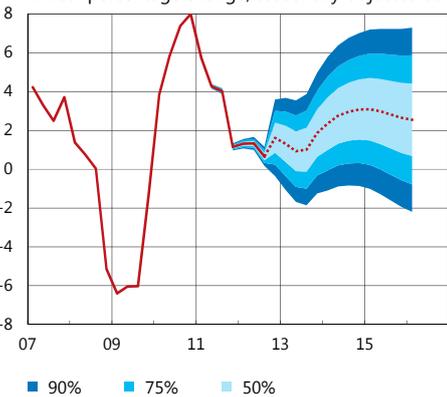
When GDP growth abroad is considered on the basis of the significance that different countries have for the Swedish economy, developments are currently weak but expected to improve in the coming period. International GDP growth in competition-weighted terms (KIX weights) is expected to rise from around 1.5 per cent this year to almost 3 per cent in 2015. Swedish export market growth,

**Figure 1:1. Purchasing managers' index in the manufacturing sector**



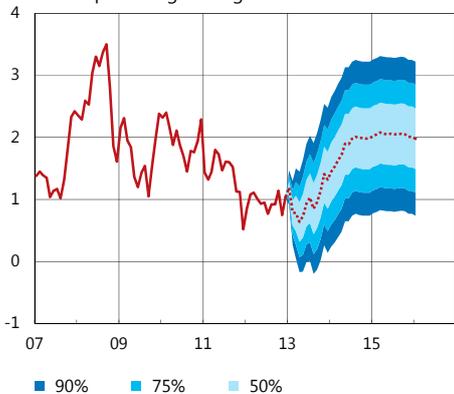
Note. Values above 50 indicate growth.  
Sources: Markit Economics and Swedbank/Sif

**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. CPIF with uncertainty bands**  
Annual percentage change



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

that is, growth in imports in the countries to which Sweden exports, is expected to increase from 1.5 per cent this year to almost 7 per cent in 2015.

■ **Gradually brighter economic prospects in Sweden**

The Swedish economy is affected to a large degree by developments abroad, not least in the euro area. Demand for Swedish exports has been low for some time and concern over potential consequences of the euro crisis for the Swedish economy contributed to a fall in confidence among Swedish households and companies at the end of last year. But there are some positive signs. For instance, concern among market participants has been reduced since the middle of last year, and uncertainty among companies and households has declined recently, both in Sweden and the euro area. This is reflected, for instance, in the confidence indicators for companies and households, which have risen since the end of last year (see Figure 1:1).

Confidence is expected to continue rising as crisis management and structural reforms in the euro area progress. This will contribute to demand for Swedish exports increasing at a faster pace during this year, while growth in domestic demand rises. Consumption is expected to grow at a faster pace as households reduce their high level of saving, companies to increase their investment as demand rises and housing construction begins to increase from a low level. This means that growth in Swedish GDP will increase gradually in 2013-2014 (Figure 1:2).

Developments in the labour market normally follow GDP with a time lag. The relatively high number of redundancy notices issued during a couple of months last autumn, combined with companies' plans to reduce their personnel also imply that the labour market will weaken further before the situation improves. All in all, employment is expected to be unchanged, and the labour force to continue to increase. This means that unemployment will increase. As demand rises, however, employment will begin to increase again. Unemployment will therefore fall gradually to 6.4 per cent at the beginning of 2016.

Inflation is currently low and is expected to remain low in the coming period. During the forecast period, inflationary pressures will increase gradually as economic activity improves and resource utilisation increases. CPIF inflation will rise and be close to 2 per cent from the middle of 2014 and onwards (see Figure 1:3). CPI inflation will also rise as inflationary pressures gradually increase. In addition, mortgage rates will rise when the repo rate is eventually increased, which means that CPI inflation will rise to just over 2.5 per cent during the latter part of the forecast period (see Figure 1:4).

■ **Continued low repo rate will stimulate the economy**

Economic developments in Sweden and abroad have been largely in line with the Riksbank's forecast in December and the forecast remains more or less unchanged. Uncertainty among investors over developments on the financial markets in Europe has declined since the middle of last year. Recently there have been preliminary signs that confidence among companies and households has increased somewhat. However, the structural problems are still a long way from being resolved and major challenges remain. Sentiment among households and companies is therefore still low, both in Sweden and in Europe, and growth in the Swedish economy is expected to be weaker than normal during the first half of this year. There is spare capacity in the economy, which will contribute to inflation remaining low in the coming period. The repo rate needs to remain at today's low level for around one year and then be raised slowly, to support the Swedish economy so that inflation rises towards the target of 2 per cent (see Figure 1:5).

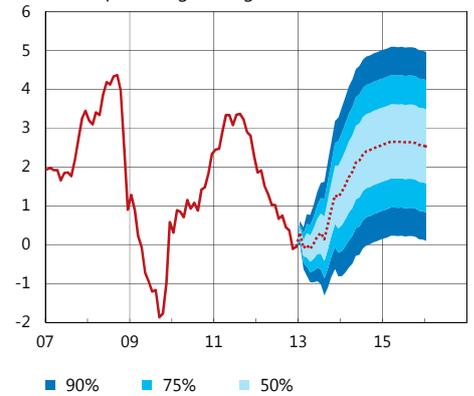
Recovery amidst uncertainty abroad

■ **Signs of stabilisation in the euro area**

Developments in the euro area are still marked by the economic crisis. The measures taken in individual euro countries, at EU level and by the ECB have contributed to reducing the uncertainty on the financial markets. This is reflected, for instance, in the fact that differences in bond yields in crisis countries such as Spain and Italy have declined compared to Germany since the middle of last year (see Figure 1:6). Confidence indicators for companies and households have also recently risen somewhat from low levels. But there is a risk of setbacks, which is reflected, for instance, in the fact that government bond yields in the crisis countries rose at the beginning of February. It is assumed in the forecast, as before, that the euro crisis will be managed so that confidence among households and companies gradually returns this year. However, this requires that the reform process continues and that credible measures are taken. This will enable growth in the euro area to begin to rise gradually in 2013 (see Figure 1:7).

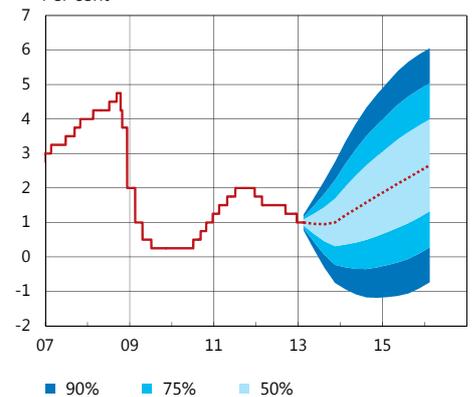
Debt consolidation in both the public sector and the banking sector in several euro area countries will take many years, which will hold back GDP growth during the entire forecast period. However, this process is necessary for growth in a longer-term perspective. Several countries in the euro area also need to improve their competitiveness to create the right conditions for sustainable growth, which takes time. This adjustment has begun in several countries and in Ireland, Spain and Portugal, for instance, competitiveness has improved since 2009, which is not the case in Italy and France, however (see Figure 1:8).

**Figure 1:4. CPI with uncertainty bands**  
Annual percentage change



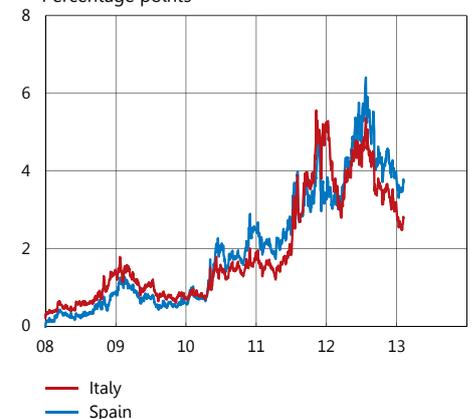
Note. The uncertainty bands are based on the Riksbank's historical forecasting errors.  
Sources: Statistics Sweden and the Riksbank

**Figure 1:5. Repo rate with uncertainty bands**  
Per cent



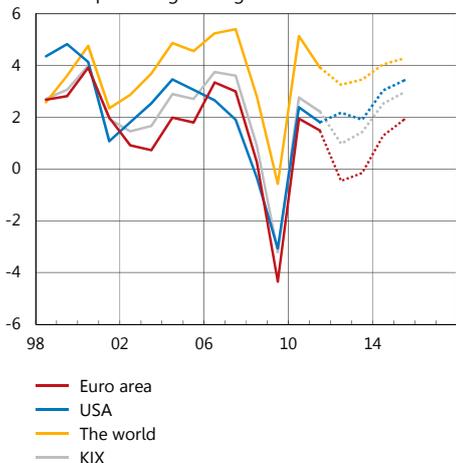
Note. The uncertainty bands for the repo rate are based on the Riksbank's historical forecasting errors and the ability of risk-premium adjusted forward rates to forecast the future repo rate for the period 1999 up to the point when the Riksbank started to publish forecasts for the repo rate during 2007.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

**Figure 1:6. Government bond rates (difference compared to Germany)**  
Percentage points



Note. Government bond rates with approximately 10 years left to maturity.  
Source: Reuters EcoWin

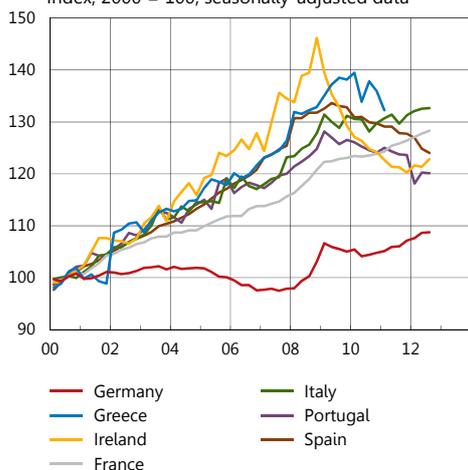
**Figure 1:7. GDP in different regions**  
Annual percentage change



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

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

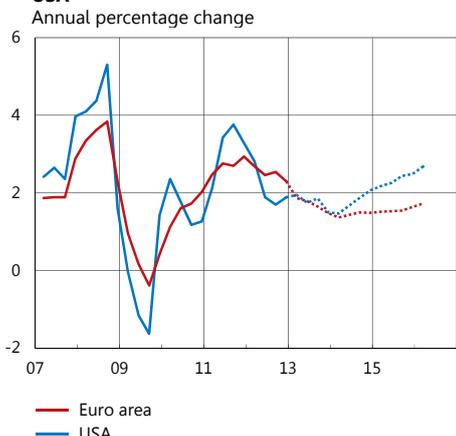
**Figure 1:8. Unit labour cost**  
Index, 2000 = 100, seasonally-adjusted data



Note. Only seasonally-adjusted data up to the end of Q1, 2011 is available for Greece.

Source: Eurostat

**Figure 1:9. Consumer prices in the euro area and USA**  
Annual percentage change



Note. This refers to HICP for the euro area and the CPI for the United States.

Sources: Bureau of Labor Statistics, Eurostat and the Riksbank

Inflation in the euro area slowed down in 2012 and is expected to fall slightly further in 2013 (see Figure 1:9). Lower increases in food and energy prices, together with lower cost pressures, will contribute to this. However, inflation will not fall so far below the ECB's target of just under 2 per cent, which is partly due to higher administrative prices and VAT rates.

As economic activity remains weak, the policy rate is expected to be low throughout the entire forecast period. However, the low policy rate will not have the same impact throughout the euro area. Many countries are struggling with problems in their banking sectors, which spill over to households and companies and mean they face relatively high interest rates and tough credit terms.

■ **Recovery in the USA**

The uncertainty over the United States' fiscal policy direction in the coming years has declined somewhat after the agreement reached in Congress on 1 January this year (see the article "Severe fiscal tightening avoided in the United States"). The decisions made mean that the fiscal policy tightening for 2013 is in line with the Riksbank's earlier assumptions. At the same time, there remain major challenges ahead to ensure that US public finances are sustainable in the long run. The Riksbank assumes that the fiscal policy consolidation will continue throughout the forecast period. However, the tightening will gradually ease, which will contribute to growth increasing more rapidly in 2014 and 2015 (see Figure 1:7).

The situation on the housing market is continuing to improve. Confidence in the construction sector has increased rapidly, house sales are increasing and house prices are rising. Housing construction is thus expected to provide a positive contribution to growth in the coming period. Rising house prices also increase households' wealth. Household debt as a percentage of disposable income has also declined since the peak in 2007. The need for further debt consolidation has thus declined and the restraining effect on consumption will weaken in the period ahead. The situation in the banking sector has also continued to improve. The percentage of households with payment problems is falling and credit terms have gradually been eased in recent years. All in all, GDP growth is estimated to be around 3 per cent a year 2014-2015.

As growth increases, employment will rise, and unemployment will fall, over the coming years. The assessment is that there will be considerable spare capacity in the economy in the coming years, but that it will decline relatively quickly when unemployment decline to around 6 per cent at the end of the forecast period. This will contribute to inflation gradually rising from 1.8 per cent in 2013 to 2.3 per cent in 2015 (see Figure 1:9 and Table 4).

In line with the Federal Reserve's most recent forecast, monetary policy is expected to be very expansionary throughout the forecast

period, and it is not until the first half of 2015 that they will begin to raise the policy rate.

**■ Rising growth in the United Kingdom, Denmark and Norway**

Growth in the United Kingdom is expected to be weak this year, and then to rise gradually. Monetary policy is expansionary and will contribute to the recovery. The measures taken to encourage credit growth (Funding for Lending) are also expected to have some positive effects on growth. Fiscal policy will be less tight in the coming period. This is expected to contribute to higher growth in domestic demand. Inflation is expected to be above the target of 2 per cent throughout 2013 and then to stabilise close to 2 per cent.

GDP in Denmark began to grow towards the end of 2012 and the growth rate is expected to increase to around 2 per cent a year towards the end of the forecast period. At the same time, inflation is expected to fall to around 2 per cent. Norwegian GDP is expected to grow by almost 3 per cent a year during the forecast period. Large incomes from the oil sector, low unemployment and expansionary monetary policy are expected to support a continuing high growth in domestic demand in Norway. Inflation is low, but is expected to rise to just over 2 per cent.

**■ Positive development in Asia**

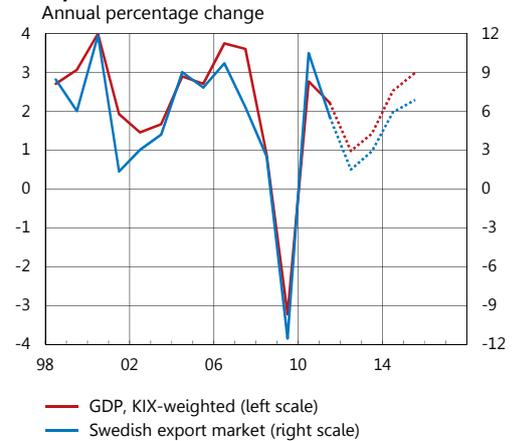
The new Japanese government has proposed a fiscal policy stimulation package. The stimulation will be divided over the period 2013-2015, and includes investments in the infrastructure, support to various regions and increased expenditure on defence. The Bank of Japan has raised its inflation target to 2 per cent and announced a new programme for bond purchases. As a result, the exchange rate has depreciated substantially in recent months. All in all, this contributes to higher GDP growth and rising inflation.

In China, GDP growth was 7.8 per cent last year. Developments in industrial production, the retail trade and exports imply that growth has improved recently, and GDP is expected to grow by just over 8 per cent a year in 2013-2015. Inflation is expected to increase to just over 3 per cent as resource utilisation rises.

**■ Developments in the euro area affecting international outlook for Sweden**

GDP for the global economy is expected to grow by around 3.5 per cent this year, and then rise to just over 4 per cent a year during the remainder of the forecast period. When international GDP growth is measured in trade-weighted terms (KIX weights) it rises from around 1.5 per cent this year to almost 3 per cent in 2015 (see Figure 1:10). Sweden's export market, that is, the increase in imports among the countries to which most of Sweden's exports go, is expected to grow by 1.5 per cent this year, and then to strengthen during the forecast period as developments in the euro area, in

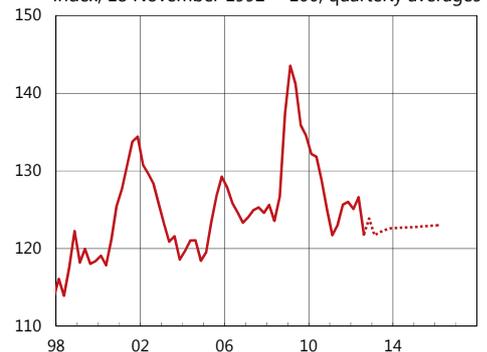
**Figure 1:10. GDP in the world and the Swedish export market**



Note. The export market aims to measure demand for imports in the countries to which Sweden exports. This is calculated by aggregating the imports of 32 countries and covers around 85 per cent of the Swedish export market. KIX refers to an aggregate of countries that are important for Sweden's international transactions.

Sources: National sources, Statistics Sweden and the Riksbank

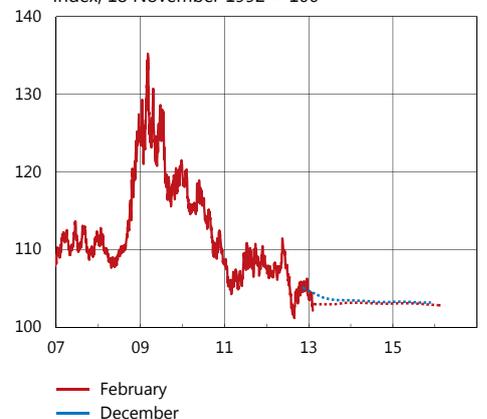
**Figure 1:11. KIX-weighted real exchange rate Index, 18 November 1992 = 100, quarterly averages**



Note. The real exchange rate is deflated by the CPIF for Sweden and the CPI for abroad. The CPIF is the CPI with a fixed mortgage rate. KIX refers to an aggregate of exchange rates that are important for Sweden's international transactions.

Sources: National sources, Statistics Sweden and the Riksbank

**Figure 1:12. KIX-weighted nominal exchange rate Index, 18 November 1992 = 100**

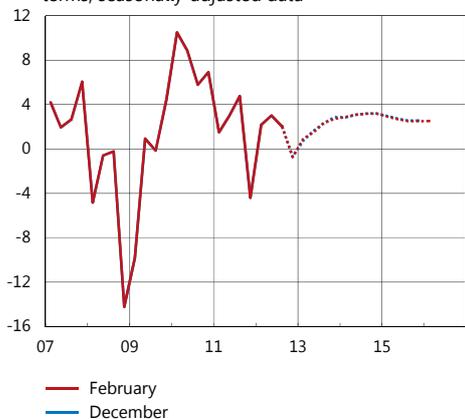


Note. Outcomes are daily rates and forecasts refer to quarterly averages. KIX refers to an aggregate of exchange rates that are important for Sweden's international transactions.

Source: The Riksbank

**Figure 1:13. GDP in Sweden**

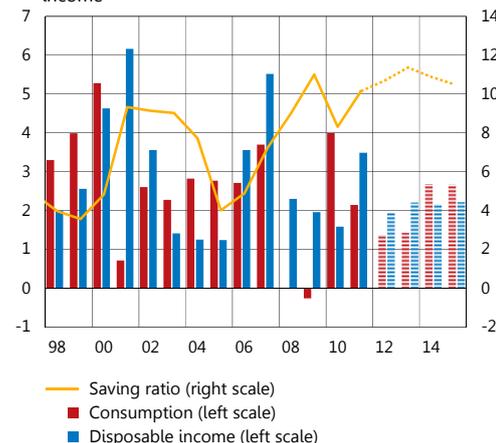
Quarterly changes in per cent calculated in annualised terms, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

**Figure 1:14. Households' disposable incomes, consumption and saving ratio**

Annual percentage change and per cent of disposable income

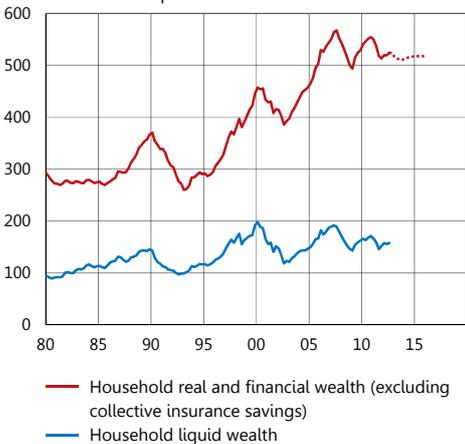


Note. Saving ratio including saving in collective insurance schemes.

Sources: Statistics Sweden and the Riksbank

**Figure 1:15. Households' wealth**

Per cent of disposable income



Note. There is no regular publication of official data for the households' total wealth. The series refers to the Riksbank's estimate of the households' total financial assets and housing assets.

Sources: Statistics Sweden and the Riksbank

particular, improve. Towards the end of the forecast period, the export market is expected to grow by almost 7 per cent (see Table 4).

#### ■ Minor changes in the krona rate

Since the Monetary Policy Update was published in December, the krona has strengthened somewhat, primarily against the dollar and sterling. The real exchange rate, that is, the nominal exchange rate adjusted for the relative price level in Sweden compared with other countries, is expected to be close to its long-run level and to remain at around this level over the coming years (see Figure 1:11). The nominal exchange rate is also expected to remain at roughly the current level throughout the forecast period (see Figure 1:12).

## Gradually brighter economic prospects in Sweden

#### ■ Rising confidence leads to higher growth

Growth in both domestic demand and exports slowed down at the end of 2012. This is largely due to the problems in the euro area reaching Sweden via weak demand for Swedish exports and to increased concern among Swedish households and companies. Confidence indicators point to developments being weak in the coming period.

The forecast assumes that the debt crisis in Europe will be managed so that the uncertainty affecting companies, households and market agents will gradually wane. Together with strong growth in countries such as the United States and China, this will contribute to a gradual rise in demand for Swedish exports. When confidence among Swedish households returns, they will reduce their saving and increase their consumption. Companies are expected to increase their investment to meet higher demand and housing construction to pick up from a low level.

Swedish GDP growth is expected to be around 1.2 per cent this year (Figure 1:13). During 2014 and 2015, when economic activity abroad picks up and domestic demand increases, GDP will grow by 2.7 per cent and 3.1 per cent respectively (see Table 5). The forecast for GDP growth is largely unchanged, compared with the one in December.

#### ■ Increase in consumption as unease subsides

Household confidence indicators, which reflect their views on developments in their personal finances and in the Swedish economy, rose in January, but are still lower than normal. The low level is connected to the unease over developments in the euro area and weak developments in the Swedish labour market. When household confidence is low, this usually means that households reduce their consumption and increase their saving. As developments

in the labour market weaken, households' disposable incomes will grow more slowly. This means that consumption will increase more slowly than normal in the coming period.

When confidence returns and the labour market improves, growth in household income will increase and saving will decline. This means that growth in household consumption will rise from 1.5 per cent this year to on average around 3 per cent a year in 2014 and 2015 (see Figure 1:14). Savings as a share of disposable income are expected to rise this year and then fall slightly over the coming years.

Household consumption and saving is also affected by the relationship between their wealth and debt (see the article "A balance sheet for households in the macroeconomic assessment"). Household wealth is expected to increase very slightly in 2014-2015, which is linked to an improvement in economic activity and an increase in house prices and financial asset prices (see Figure 1:15). This is expected to contribute to households saving less and consuming more of their disposable incomes during the forecast period. Growth in lending to households, which largely consists of mortgages, has slowed down in recent years. Over the coming years, debts are expected to increase at around the same rate as households' incomes. This means that households' debt ratio, measured as the share of debt in relation to disposable income, remains at today's high levels throughout the forecast period (see Figure 1:16).

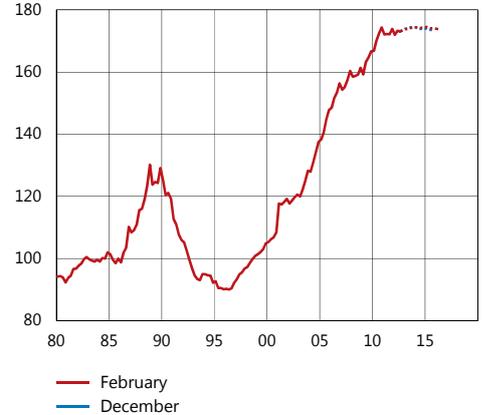
■ **Recovery in Europe important for Swedish exports**

The weak developments in large parts of Europe contribute to dampening demand for Swedish exports (see Figure 1:17). Just over 70 per cent of Swedish exports of goods are to Europe, and with the exception of Norway, which accounts for around 10 per cent, growth prospects in Europe are bleak for the coming period. In contrast to earlier periods of weak growth on the export market, export companies have not benefitted from a weaker exchange rate. However, growth in Europe is expected to rise during 2013-2014, which will contribute to faster growth in demand for Swedish exports.

All in all, exports are expected to grow by just over 1 per cent this year, just over 5 per cent next year and 7 per cent in 2015. Compared with the forecast in December, exports have been revised down for 2015. This is linked to a new assessment of long-run developments in world trade in relation to global GDP growth. Swedish export market growth, that is, growth in imports in the countries to which Sweden exports, is therefore expected to be lower.

Swedish imports have been weak recently. Weak demand, not least in the manufacturing industry, and destocking are expected to subdue imports in the coming period, too. Growth in imports will increase during the forecast period as exports and domestic demand also increase. Compared with the forecast in December, imports have

**Figure 1:16. Household debt**  
Per cent of disposable income



Sources: Statistics Sweden and the Riksbank

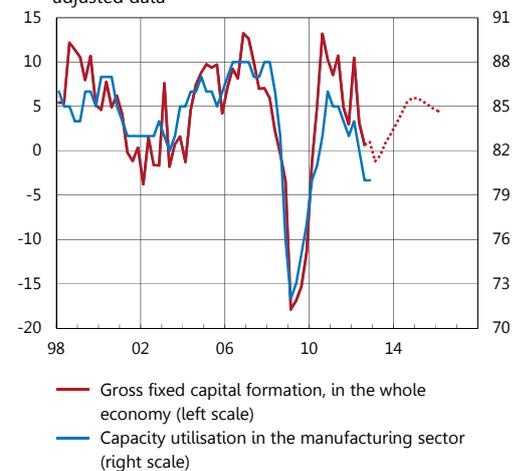
**Figure 1:17. Swedish exports and the world market for Swedish exports**  
Annual percentage change, seasonally-adjusted data



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

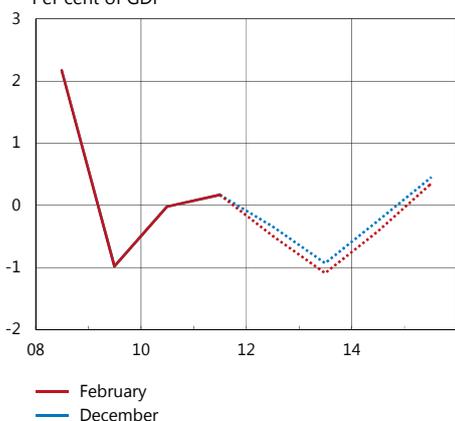
Sources: Statistics Sweden and the Riksbank

**Figure 1:18. Gross fixed capital formation and capacity utilisation in the manufacturing sector**  
Annual percentage change and per cent, seasonally-adjusted data



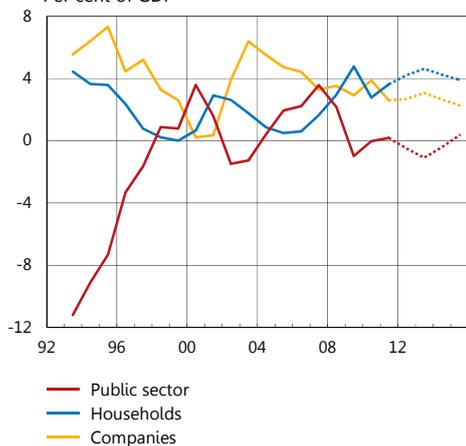
Sources: National Institute of Economic Research, Statistics Sweden and the Riksbank

**Figure 1:19. General government net lending**  
Per cent of GDP



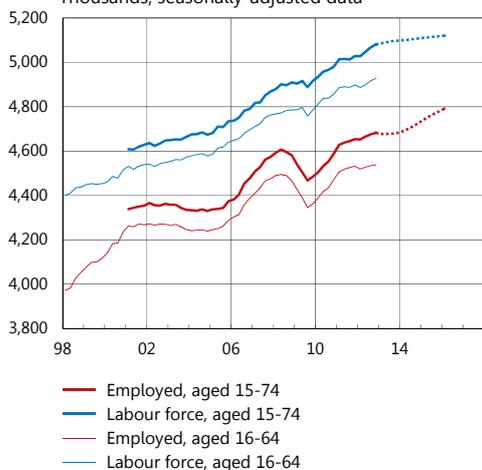
Sources: Statistics Sweden and the Riksbank

**Figure 1:20. Financial savings in different sectors**  
Per cent of GDP



Sources: Statistics Sweden and the Riksbank

**Figure 1:21. Labour force and number of employed**  
Thousands, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

been revised down for 2015. This is connected to the downward revision of the forecast for exports, which has a large import content.

#### ■ Investment will pick up in 2014

Investment is affected by the weak growth in exports and consumption. Companies reduce their production and thus reduce their need for investment to increase capacity. According to the Economic Tendency Survey, capacity utilisation within the manufacturing industry has declined, and was much lower than normal during the second half of last year. In addition, the uncertainty over economic activity contributes to planned investments being postponed and housing construction declining. All in all, investment is expected to be largely unchanged in 2013, which is in line with the investment survey from October 2012.

As international economic activity improves and companies recover their confidence, the need to invest will increase, at the same time as postponed investments are realised. Moreover, housing construction is currently assessed as much lower than the long-run need and thus housing construction is also expected to pick up again when economic prospects improve. This means that investment is expected to increase by an average of 5 per cent per year in 2014 and 2015 (see Figure 1:18).

#### ■ Temporarily lower public saving

The Riksbank's forecasts for fiscal policy are based on measures that have already been announced. In addition, an assessment is based on historical developments in fiscal policy in relation to the economic situation and the surplus target. According to the Riksbank's economic assessment, this entails reforms corresponding to SEK 16 billion in total for the years 2014 and 2015. As a result of the weak economic activity, the public sector financial balance deteriorated in 2012, and is expected to weaken further in 2013. As the economic situation improves, tax revenue will rise at the same time as transfer expenditure declines, which will lead to higher financial saving. All in all, financial saving is assessed to have been -0.5 per cent of GDP last year and to be -1.1 per cent of GDP this year, to then gradually increase to 0.3 per cent of GDP in 2015 (see Figure 1:19).

#### ■ Continued high saving in the economy as a whole

The surplus on the current account has remained at a relatively high level since the mid-1990s. This means that saving in the economy as a whole, that is, total financial saving among companies, households and the public sector, has been relatively high (see Figure 1:20). Over the coming years, total saving and the current account are expected to remain at high levels (see Table 5). This is mainly because private saving is expected to remain high.

■ **Recovery on the labour market delayed**

The labour market showed relatively stable development in 2012. The number of persons employed increased slightly, but the labour force increased more and unemployment therefore rose somewhat. The labour market normally follows developments in GDP with some time lag. The slowdown in growth, together with the rise in the number of redundancy notices, at the end of last year points to a deterioration in the labour market in the coming period. In the Riksbank's company interviews, companies in the manufacturing sector, in particular, state that their workforces are generally too large, which indicates that they will manage the rise in demand with the personnel they have already, at least initially. This means that employment is expected to be unchanged for the year as a whole and not pick up again until the middle of 2014 (see Figure 1:21). At the same time, the labour force is expected to grow slightly during the forecast period. This means that unemployment will rise to 8.2 per cent during the second half of 2013, and then gradually fall to 6.4 per cent as growth increases (see Figure 1:22).

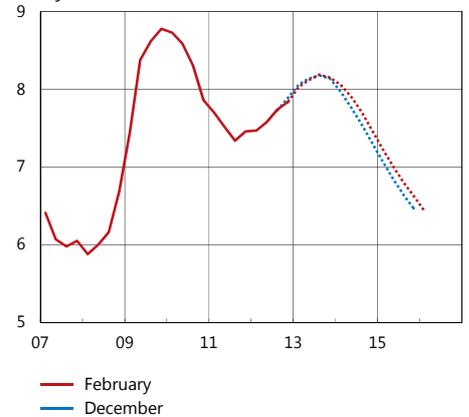
■ **Resource utilisation lower than normal**

The Riksbank's overall assessment is that resource utilisation is at present lower than normal. This assessment is supported by the Riksbank's indicators of resource utilisation, which summarise the information from surveys and from the labour market (see Figure 1:23). The employment rate, that is, the number of persons employed as a percentage of the population, is expected to fall in 2013 and then begin to rise in 2014. Other measures of resource utilisation, such as GDP, unemployment and the number of hours worked in relation to the respective estimated long-run sustainable levels, indicate that there is spare capacity in the economy. As demand returns, growth in production rises and employment picks up, resource utilisation will also rise and normalise during the latter part of the forecast period (see Figure 1:24).

■ **Relatively stable domestic cost pressures**

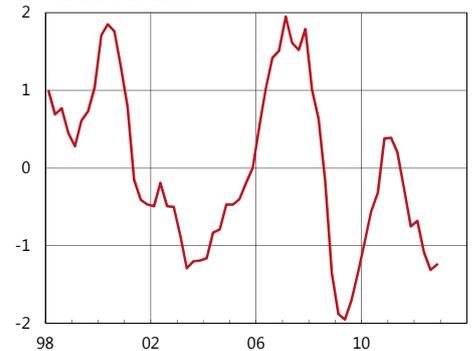
In 2013, around 500 wage agreements covering approximately 2.5 million employees will be concluded. The current wage agreements in the manufacturing industry will expire in March, and both employee and employer organisations have put forward their demands prior to the new bargaining rounds. As before, the Industrial Agreement is expected to set the standard for the other areas. The forecast assumes that wages throughout the economy will increase by 2.8 per cent in 2013, which is slightly lower than last year. The assessment for 2013 is based, for instance, on historical relationships between demands put forward in negotiation rounds and final wage outcomes. Furthermore, the weaker labour market situation is expected to dampen wage increases in 2013, compared with the previous year. During 2014 and 2015, economic activity is

**Figure 1:22. Unemployment**  
Per cent of the labour force, aged 15-74, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

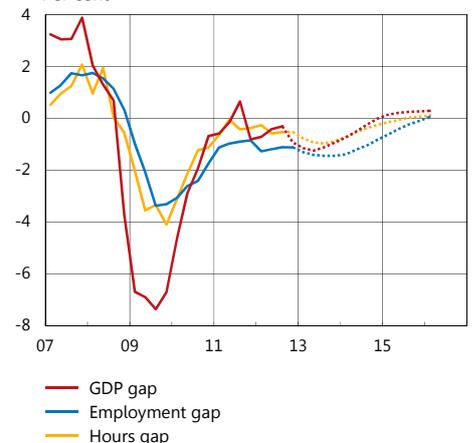
**Figure 1:23. RU indicator**  
Standard deviation



Note. The RU indicator is normalised so that the mean value is 0 and the standard deviation is 1.

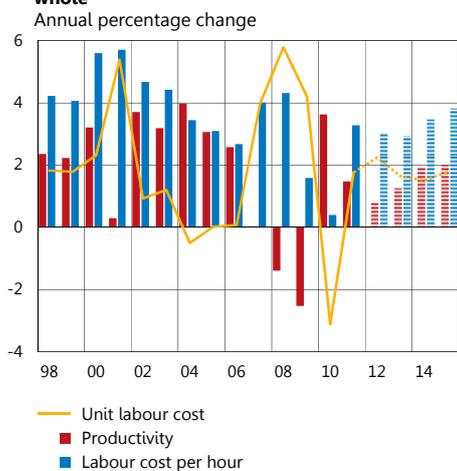
Source: The Riksbank

**Figure 1:24. GDP gap, employment gap and hours gap**  
Per cent

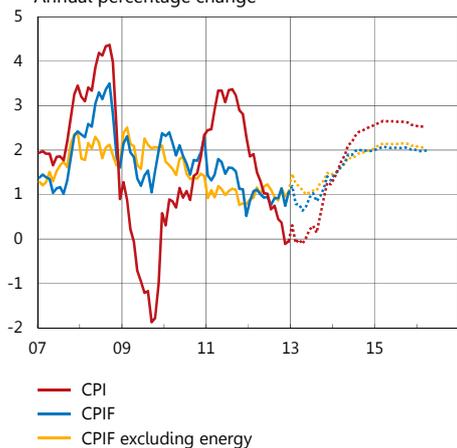


Note. GDP gap refers to the deviation from trend in GDP calculated using a production function. The hours gap and the employment gap refer to the deviation in the number of hours worked and the number of those employed from the Riksbank's assessed trend.

Sources: Statistics Sweden and the Riksbank

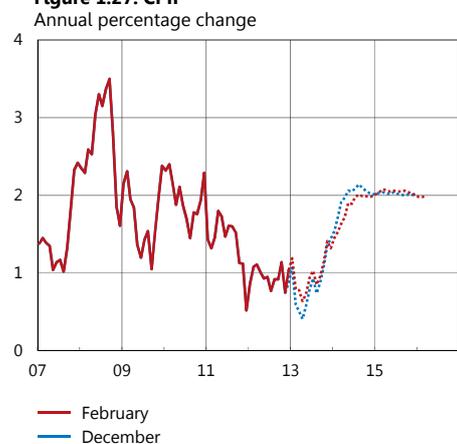
**Figure 1:25. Cost pressures in the economy as a whole**

Sources: Statistics Sweden and the Riksbank

**Figure 1:26. CPI, CPIF and CPIF excluding energy**

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

Sources: Statistics Sweden and the Riksbank

**Figure 1:27. CPIF**

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

Sources: Statistics Sweden and the Riksbank

expected to improve gradually, which will mean that the rate of wage increase rises.

Productivity growth is expected to rise from 0.8 per cent in 2012 to 1.3 per cent this year, and to around 2 per cent a year in 2014–2015 (see Table 7). This will slow down the rate of growth in unit labour costs from 2.2 per cent in 2012 to 1.5 per cent in 2014. They will later rise again to 1.8 per cent in 2015 (see Figure 1:25).

### ■ Low but gradually rising inflation

Inflation is low at present (see Figure 1:26). This is due to an earlier strengthening of the krona, a low rate of increase in the price of imported goods and low resource utilisation in the Swedish economy. These factors will continue to hold back inflation in the coming period, but to a lesser extent from the second half of the year, which will contribute to a gradual rise in inflation. The exchange rate is not expected to strengthen further, but to remain largely unchanged during the forecast period. As economic activity in Sweden strengthens, resource utilisation and wage increases will also strengthen.

All in all, CPIF inflation is expected to be around 1 per cent in the coming year, and then to rise and be close to 2 per cent from the middle of 2014 and onwards. CPI inflation will be slightly negative during the next few months, which is linked to the recent repo-rate cuts and falling mortgage rates. CPI inflation will then rise more than CPIF inflation from 2014 onwards, as households' interest expenditure will increase at a faster pace when the Riksbank begins to raise the repo rate. The rate of increase in the CPI is expected to be just over 2.5 per cent towards the end of the forecast period.

During periods with large interest rate adjustments, measures of inflation that do not include the direct effects of interest rate adjustments, such as the CPIF, provide a better picture of underlying inflationary pressures. In the longer run, when the repo rate has stabilised, CPI inflation and CPIF inflation will coincide, however.

Compared with the forecast in December, CPIF inflation has been revised upwards somewhat in the short run as a result of the outcome being higher than expected. The CPIF forecast for 2014 has been revised down somewhat, as energy prices are expected to increase at a slower rate (see Figure 1:27).

## Monetary policy considerations

### ■ Continued low repo rate stimulates the economy

Economic developments in Sweden and abroad have been largely in line with the December assessment and the forecasts remain more or less unchanged. The Swedish economy is affected to a large degree by developments abroad, not least in the euro area, where problems in the countries with debt crises remain a source of uncertainty and weak demand. This will contribute to Swedish growth being weaker

than normal during the first half of this year. However, there are some positive signs. The acute crisis on the financial markets has abated and several indicators point to confidence having risen among households and companies, both in Sweden and abroad. This supports the assessment that growth will gradually increase.

The weak growth has a delayed effect on the labour market, and unemployment is therefore expected to continue to rise somewhat over the coming year. The repo rate needs to remain at a low level to support the recovery in Sweden. This also reduces the risk of the slowdown in economic activity having lasting effects on unemployment. Inflation is currently low and is expected to remain low in the coming period. During the forecast period, inflation will rise gradually as economic activity improves and resource utilisation increases.

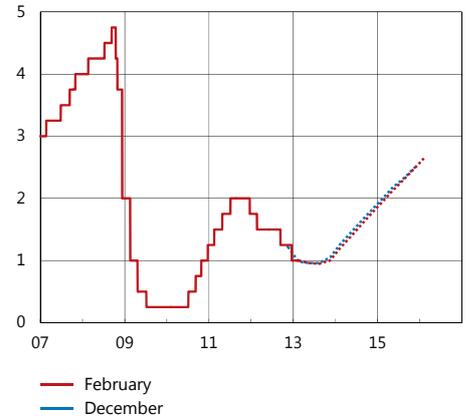
Since December 2011, the Riksbank has lowered its interest rate from 2 to 1 per cent. Monetary policy affects the economy with some time lag, which means that the effect of these cuts has not yet made a full impact on economic activity and inflation. Cutting the repo rate further in the present situation would probably have very minor effects on the low inflation and economic activity in the short run, but as monetary policy is already expansionary, there is a risk that CPIF inflation would be above 2 per cent towards the end of the forecast period (see the scenario "Lower repo rate" in Chapter 2). With regard to the labour market, the relatively high unemployment is partly explained by structural factors. This means that it would be difficult, even with a more expansionary monetary policy, to attain a significantly lower rate of unemployment in the coming years. Such monetary policy would also risk contributing to an even higher indebtedness and make households more vulnerable to shocks. The latter in turn entails greater risks of large fluctuations in resource utilisation and inflation in the future (see the article "The household balance sheet and the macroeconomic assessment").

The Executive Board of the Riksbank has decided to leave the repo rate unchanged at 1 per cent. The repo rate needs to remain at this low level for around a year. If the repo rate were to change in the coming six months, it is assessed as more probable that it would be cut than it would be raised, primarily in the light of the problems in the euro area still remaining a source of uncertainty. At the start of 2016, the repo rate is expected to have gradually been increased to 2.7 per cent (see Figure 1:28). Compared with the assessment in December, the repo-rate path has been marginally adjusted down.

The fact that monetary policy is expansionary is illustrated by the real repo rate being negative for almost all of the forecast period (see Figure 1:29). This is expected to support economic activity and to contribute to CPIF inflation being close to 2 per cent from the middle of 2014 onwards.

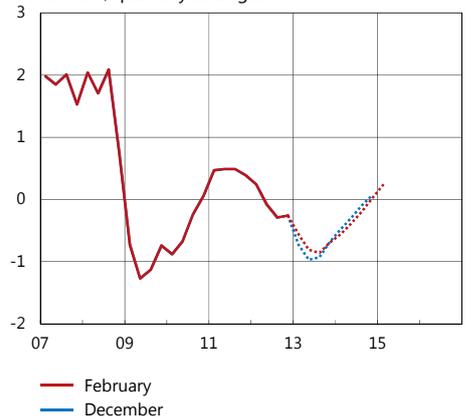
Household debt as a percentage of their income remains at a high level, around 170 per cent. During the forecast period, the debt

**Figure 1:28. Repo rate**  
Per cent



Note. Outcome data are daily rates and forecasts are quarterly averages.  
Source: The Riksbank

**Figure 1:29. Real repo rate**  
Per cent, quarterly averages



Note. The real repo rate is calculated as an average of the Riksbank's repo rate forecasts for the coming year minus the inflation forecast (CPIF) for the corresponding period.  
Source: The Riksbank

ratio is expected to be largely unchanged, and the risk linked to households' high indebtedness will thus remain unchanged.

#### ■ **Economic developments are uncertain**

The unease among market participants has declined since the middle of last year. But at the same time, government bond yields in crisis countries such as Italy and Spain are still high and their sensitivity is reflected in the fact that they rose at the beginning of February. The problems in the euro area thus remain a source of uncertainty in the forecasts. The main scenario is based, as before, on the assumption that the crisis in the euro area will be managed so that the uncertainty gradually subsides over the year. If the financial unrest were to increase, this would of course change the assumptions on which the forecast are based. However, developments abroad, particularly in the United States and the rapidly-growing economies in Asia may also be better than is assumed in the main scenario. The consequences of both a better and a worse scenario abroad are described in the scenario "Uncertain recovery abroad" in Chapter 2.

There is also a discussion in Chapter 2 of a scenario called "Weaker labour market", which illustrates how the functioning of the labour market affects the forecasts for unemployment, inflation and thus the direction of monetary policy.

## ■ CHAPTER 2 – Alternative scenarios and risks

**Fluctuations in developments on the labour market can be due both to changes in economic activity and to more structural changes that are not governed by economic activity. It is difficult to determine the causes behind the variations in the labour market, and in particular the long-run sustainable level that unemployment might attain. To illustrate how monetary policy can react to a weak labour market development, this chapter describes a scenario where unemployment rises for either cyclical or structural reasons. If the increase in unemployment is due to the economic cycle, the repo rate may need to be lowered more than if the increase is largely due to structural reasons.**

**There is still considerable uncertainty about economic developments abroad. There are signs that confidence around the world and global growth are now improving. At the same time, major challenges remain in both the euro area and the United States. If international growth and confidence are stronger or weaker than the Riksbank is forecasting now, the repo-rate path may need to be raised or lowered more than in the main scenario.**

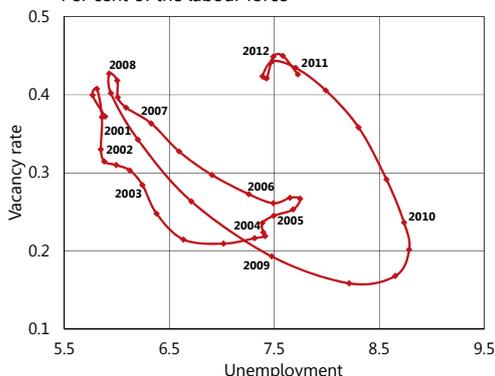
A number of circumstances could give a different course of economic development than the one described in the main scenario. This is reflected in the uncertainty bands around the forecasts in Figures 1:2-1:5. In this Chapter, the Riksbank presents two alternative scenarios for the development of the economy that differ from the main scenario. The aim of the scenarios is to highlight the uncertainty that prevails regarding the future and the risks that are regarded as being particularly important at present.<sup>3</sup>

The scenario "Weaker labour market" focuses on how the labour market is functioning and how this can affect developments in unemployment, inflation and the repo rate in the coming years. Short-term rises and falls in unemployment are often due to cyclical fluctuations. However, the level of unemployment around which the fluctuations occur depends on how efficiently the labour market is functioning. The percentage of the change in unemployment that can be explained by changes in the functioning of the labour market may also vary over time. The article "Long-run developments in the Swedish labour market" in the Monetary Policy Report published in July 2012 discussed factors that influence the functioning of the labour market and the article "Has the functioning of the labour markets changed?" in the Monetary Policy Report published in October 2012 discussed, inter alia, how matching efficiency appears to have deteriorated in recent years.

We describe the scenario in two different versions to clarify how monetary policy could react to an unexpected increase in unemployment. In the first version unemployment is affected by a cyclical fluctuation in demand, and in the second version the upturn in unemployment is mainly due to a deterioration in the functioning of the labour market, with poorer matching, higher recruitment costs and thus a higher long-run unemployment rate. The repo-rate path is lowered in both cases, when unemployment rises. The amount by

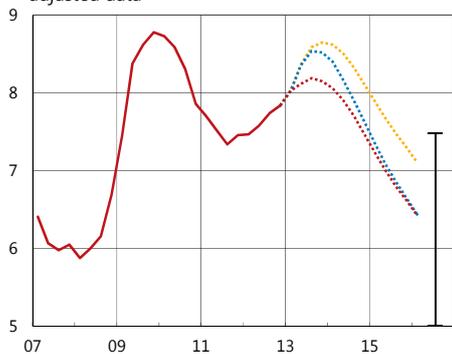
<sup>3</sup> The scenarios in this chapter are based on the Riksbank's general equilibrium model, Ramses. For a description of the model see L. Christiano, M. Trabandt and K. Walentin, "Introducing financial frictions and unemployment into a small open economy model", Working Paper no. 214, Sveriges Riksbank, 2007.

**Figure 2.1. Beveridge curve**  
Per cent of the labour force



Note. Data labels mark the first quarter of the respective year.  
Sources: Employment Service, Statistics Sweden and the Riksbank

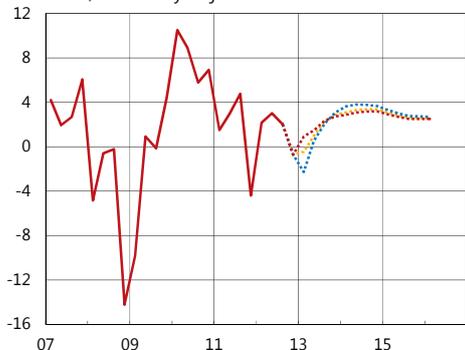
**Figure 2.2. Unemployment**  
Per cent of the labour force, aged 15-74, seasonally-adjusted data



— Main scenario  
— Weaker labour market, cyclical  
— Weaker labour market, structural

Note. The vertical line marks the interval for the Riksbank's assessment of long-run sustainable unemployment.  
Sources: Statistics Sweden and the Riksbank

**Figure 2.3. GDP**  
Quarterly changes in per cent calculated in annualised terms, seasonally-adjusted data



— Main scenario  
— Weaker labour market, cyclical  
— Weaker labour market, structural

Sources: Statistics Sweden and the Riksbank

which it is lowered depends on whether the higher unemployment is mainly due to cyclical or structural reasons.

Continuing developments in the euro area and other countries are a constant source of uncertainty. The most acute and imminent public finance problems appear to have been managed in a relatively orderly manner, but at the same time, it will take a long time before sustainable long-term solutions have been implemented. Hence, there is considerable uncertainty over developments and the situation could be either better or worse than assumed in the main scenario. This is illustrated in the scenario "Uncertain recovery abroad". If developments are less favourable, confidence and growth abroad may be lower than in the main scenario. The repo rate would then need to be cut to limit the negative effects on inflation and resource utilisation.

The problems abroad may also be less extensive and confidence may return sooner than expected. For example, there are now several signs that growth in the US economy and in China will gradually increase over the coming years. In a more favourable scenario, confidence could return rapidly and the recovery could be faster. Resource utilisation and inflation would then be higher than in the main scenario, and the need for more expansionary monetary policy would not be as great. The repo-rate path would therefore be higher than in the main scenario.

In conclusion, we discuss two alternative courses of action for monetary policy. The first entails the repo rate being raised more than in the main scenario, whereas the second alternative entails the reverse.

## Alternative scenario: Weaker labour market

Employment has developed in a relatively stable manner during 2012, while unemployment has risen as the number of persons in the labour force has increased. Various labour market indicators point to a deterioration in the labour market during 2013. According to business tendency surveys, companies are pessimistic about the future and they state that they are planning to reduce their staff. The number of redundancy notices increased relatively rapidly during autumn 2012, and although it is uncertain how many of these notices will actually lead to loss of jobs, the increase is a clear indicator that the labour market will weaken. How much it weakens will depend on how the labour market functions and what causes are behind the fluctuations in unemployment.

### ■ Difficult to assess the level of long-run sustainable unemployment

It is very difficult to assess what level of unemployment is sustainable in the long term. This appears to vary over time and is affected by both economic policy reforms and changes in the composition of the working-age population. The Riksbank's assessment is that the

reforms over the past decade will in the long run lead to lower unemployment. At the same time, the reforms and the demographic developments have also meant that groups with a lower average workforce participation and lower employment rate have increased as a percentage of the working-age population. This means it may take longer to attain a lower rate of unemployment. The Riksbank's assessment is that the long-run sustainable unemployment rate is between 5 and 7.5 per cent.<sup>4</sup> This interval illustrates the uncertainty over this type of assessment and the importance of constantly monitoring the functioning of the labour market.

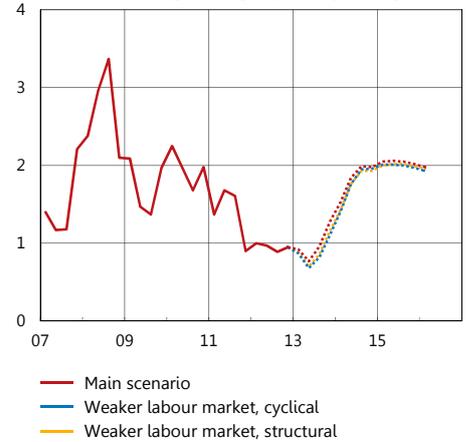
Matching efficiency plays a central role in the assessment of which developments in the labour market are sustainable in the long run. Several different indicators can be used to illustrate matching efficiency. Figure 2:1 shows the relationship between unemployed and job vacancies from 2001 to 2012. This negative relationship is usually known as the Beveridge curve. By studying this relationship, one can gain an indication of whether the changes on the labour market are cyclical or structural. A movement along the Beveridge curve is often interpreted as a cyclical change. An outward shift of the curve indicates poorer matching, and vice versa. Ineffective matching means that it takes a long time to pair vacancies and the unemployed together and that unemployment is thus higher, with a given number of job vacancies. Since 2009, the Swedish Beveridge curve appears to have shifted outwards, which can be interpreted as a sign of poorer matching.<sup>5</sup>

**■ Weaker demand entails higher unemployment in the short run**

The main scenario is based on the assumption that unemployment will rise to around 8.2 per cent in 2013, and that it will be around 6.4 per cent at the end of the forecast period. In the scenario with higher unemployment due to cyclical reasons (below called the demand scenario), unemployment is around 8.5 per cent in 2013 (see Figure 2:2). Households' expectations of future developments deteriorate in this scenario, which leads to lower domestic demand. The uncertainty increases and poorer growth prospects make households more pessimistic. Consequently, consumption and investment grow at a slower rate than in the main scenario, and the savings ratio is higher. Companies reduce their production to adapt to the lower demand and growth is lower (see Figure 2:3).

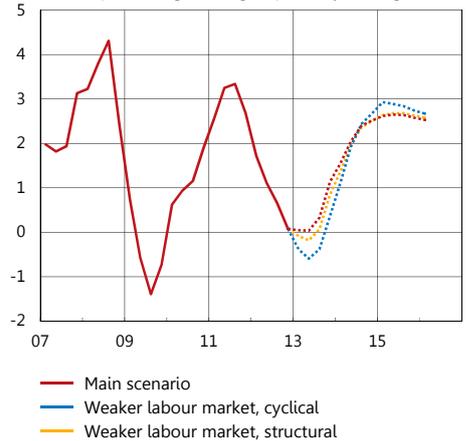
When companies are to reduce their production, they must reduce their input of capital and labour. Overtime becomes less common and some companies cut back their workforces. Resource utilisation in the labour market falls faster than in the main scenario and is lower than normal throughout most of the forecast period.

**Figure 2:4. CPIF**  
Annual percentage change, quarterly averages



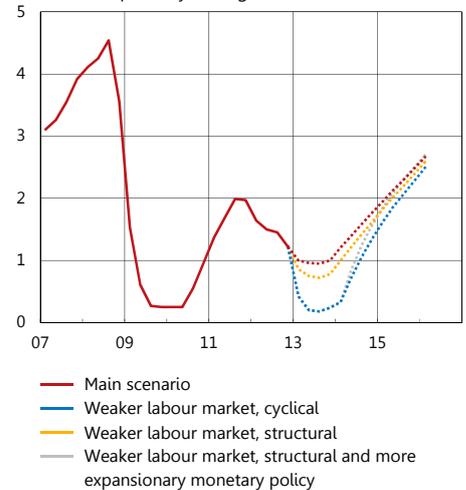
Note. The CPIF is the CPI with a fixed mortgage rate.  
Sources: Statistics Sweden and the Riksbank

**Figure 2:5. CPI**  
Annual percentage change, quarterly averages



Sources: Statistics Sweden and the Riksbank

**Figure 2:6. Repo rate**  
Per cent, quarterly averages

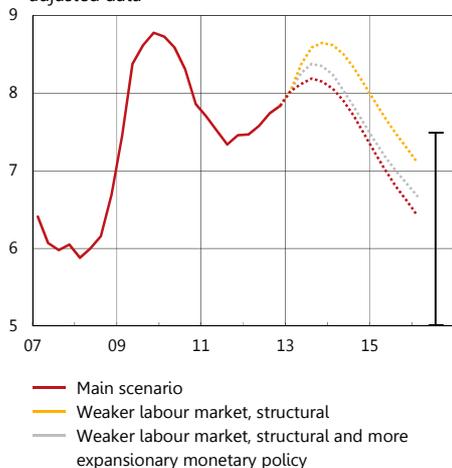


Source: The Riksbank

<sup>4</sup> The assessment is described in more detail in the article "Long-run developments in the Swedish labour market" in the Monetary Policy Report published in July 2012.  
<sup>5</sup> The Riksbank's assessment that the matching between job-seekers and vacancies has deteriorated in recent years is discussed in the article "Has the functioning of the labour markets changed?" in the Monetary Policy Report published in October 2012.

**Figure 2:7. Unemployment**

Per cent of the labour force, aged 15-74, seasonally-adjusted data

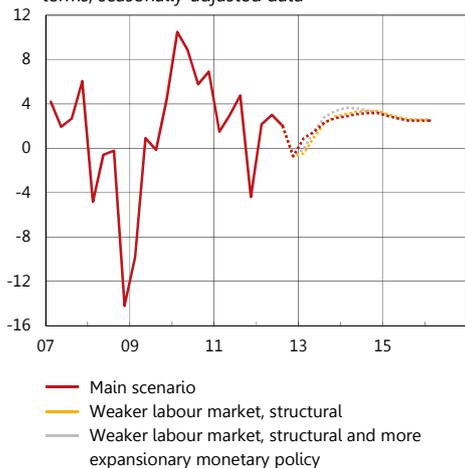


Note. The vertical line marks the interval for the Riksbank's assessment of long-run sustainable unemployment.

Sources: Statistics Sweden and the Riksbank

**Figure 2:8. GDP**

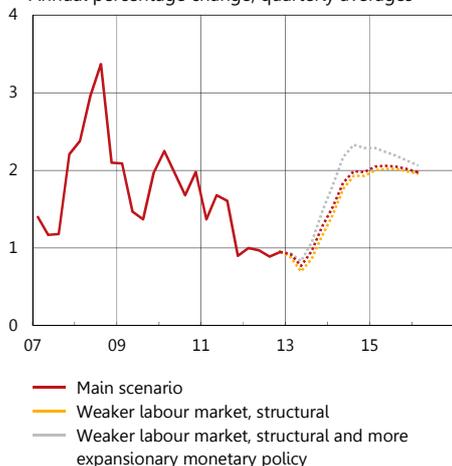
Quarterly changes in per cent calculated in annualised terms, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

**Figure 2:9. CPIF**

Annual percentage change, quarterly averages



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

Sources: Statistics Sweden and the Riksbank

Unemployment thus rises faster than in the main scenario and we have a cyclical movement along a given Beveridge curve as described above. When the demand for labour declines and unemployment increases, developments in wages are poorer and purchasing prices increase more slowly, which ultimately leads to the inflation rate being lower. The repo rate is cut to stabilise CPIF inflation around 2 per cent and give support to the Swedish economy (see Figure 2:4). CPI inflation is affected directly by the change in the repo rate, which means that CPI inflation varies more than CPIF inflation in the scenario (see Figure 2:5).

### ■ A labour market that functions poorly leads to higher unemployment in both the long and short run.

In addition to the fluctuations in demand, changes in the functioning of the labour market are an important factor that affects inflation. It is assumed, to make comparisons easier, that unemployment rises just so much that it will be the same during the early part of 2013 as in the scenario with lower demand (see Figure 2:2).

Unlike the demand scenario, however, the higher unemployment in this scenario is due to structural factors that entail poorer matching efficiency and higher recruitment costs. The long-run sustainable rate of unemployment then falls into the upper part of the interval between 5 and 7.5 per cent. In this scenario, companies experience greater difficulty finding personnel with the right skills. It therefore takes longer to recruit a given number of people, which in turn means that recruitment costs increase. Unemployment is now higher for a given level of vacancies, which entails a shift in the relationship between job vacancies and unemployment, that is, the Beveridge curve shifts outwards. Unlike the demand scenario, in which wages show a weaker development, companies have to raise wages slightly to be able to recruit the right personnel. In other words, there is stiffer competition for the personnel the companies wish to employ. However, despite rising wages, households' incomes and total consumption are lower in the economy as a whole. The effects on the rate of price increase are in total less than in the scenario where unemployment rises solely due to cyclical reasons (see Figures 2:4 and 2:5) The repo rate therefore does not need to be cut as much as in the demand scenario to stabilise CPIF inflation around 2 per cent.

### ■ Monetary policy reacts differently

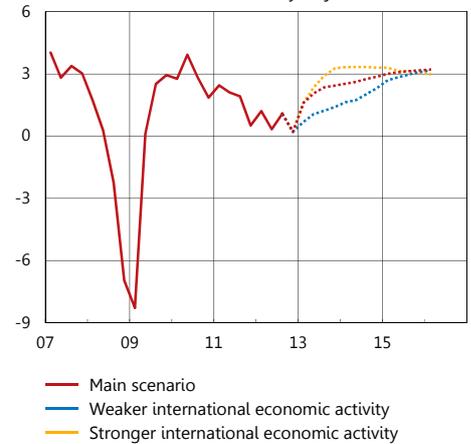
In the two scenarios for the labour market described here, inflation and resource utilisation are affected in slightly different ways. In the scenario with lower demand, falling real costs lead to lower inflation and higher unemployment. However, monetary policy slows down the fall in inflation and the increase in unemployment (see Figures 2:2 and 2:4) by cutting the repo rate relatively substantially (see Figure 2:6). Monetary policy is conducted in this scenario so that CPIF

inflation stabilises around the inflation target and unemployment has returned close to a long-run sustainable level at the end of the forecast period. CPIF inflation can be stabilised close to the target as the exchange rate weakens, which leads to higher import prices. On the other hand, it takes longer for monetary policy to affect domestic prices and resource utilisation. In the scenario with higher unemployment due to structural reasons, the level of unemployment rises, but resource utilisation does not fall as much because the long-run sustainable level for unemployment also rises. The repo rate therefore does not need to be cut as far as in the demand scenario to bring inflation close to the target of 2 per cent (see Figure 2:6).

As described earlier in this chapter, it is very difficult to determine the causes behind the variations in the labour market, and in particular the long-run sustainable level that unemployment can be expected to attain. A number of estimated matching functions, which show the relationship between job opportunities and rigidities in the Swedish labour market, point to the possibility that matching efficiency has deteriorated in recent years. As the large cyclical fluctuations have probably affected the matching efficiency, it is too early to draw any far-reaching conclusions as to the durability of the change. The labour market may thus be functioning less efficiently for both cyclical and structural reasons. To illustrate the significance of the assessment of what development of the labour market can be considered sustainable in the long run, and the view of what role monetary policy can play in this context, we show in a final alternative the effects of cutting the repo rate as far in the two scenarios (see Figure 2:6). If the upturn in unemployment is due to structural reasons, but the repo rate is cut as much as in the demand scenario, inflation will overshoot the target (see Figure 2:9). In this scenario the long-run sustainable rate of unemployment is assumed to be in the upper part of the interval of 5-7.5 per cent and unemployment will be lower than this level at the end of the forecast period (see the grey line in Figure 2:7).

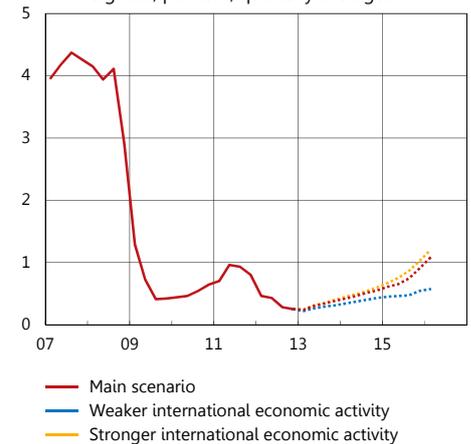
Determining how expansionary monetary policy should be in these different alternatives is largely a question of judgement. A relatively large repo-rate cut gives an inflation rate above the target and unemployment that is lower than the long-run sustainable level during the forecast period. A more expansionary monetary policy can reduce the risk of poorer matching having lasting effects on unemployment, but at the price of inflation overshooting the target. A further factor is how household and corporate sector debt would then develop, and the risks this would entail. In this scenario, the household debt ratio, which is already high to begin with, rises as a result of a lower real interest rate, lower GDP and lower disposable incomes. Such a development can in the long run make the economy more sensitive to shocks.

**Figure 2:10. GDP abroad**  
KIX-weighted, quarterly changes in per cent calculated in annualised terms, seasonally-adjusted data



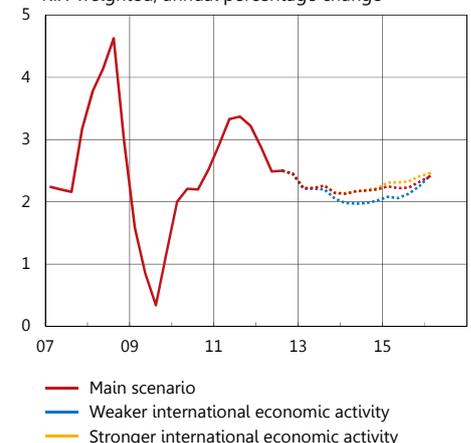
Note. KIX refers to an aggregate of countries that are important for Sweden's international transactions.  
Sources: National sources and the Riksbank

**Figure 2:11. Policy rate abroad**  
KIX-weighted, per cent, quarterly averages

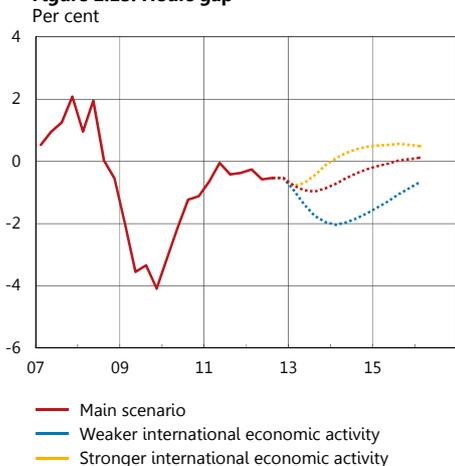


Note. KIX-4 is used when weighing together policy rates abroad. This includes the euro area, Norway, the United Kingdom and the United States.  
Sources: Bank of England, ECB, Federal Reserve, Norges Bank and the Riksbank

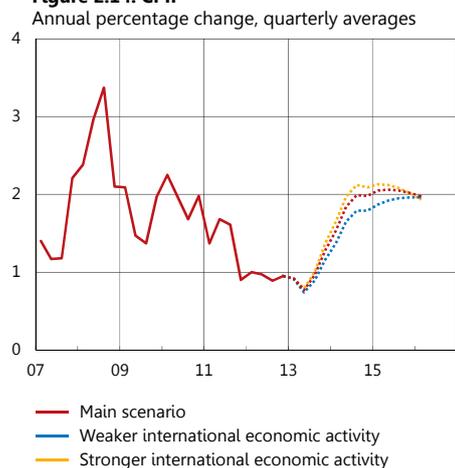
**Figure 2:12. Inflation abroad**  
KIX-weighted, annual percentage change



Note. KIX refers to an aggregate of countries that are important for Sweden's international transactions.  
Sources: National sources, OECD and the Riksbank

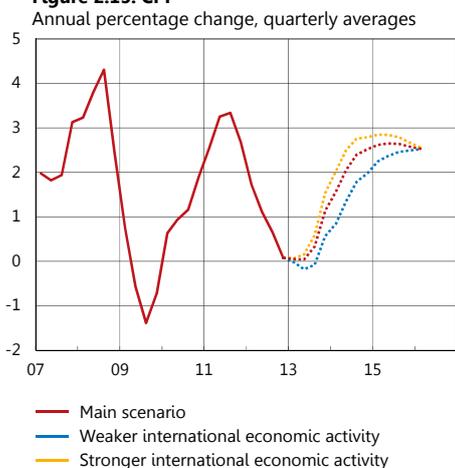
**Figure 2:13. Hours gap**

Sources: Statistics Sweden and the Riksbank

**Figure 2:14. CPIF**

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

Sources: Statistics Sweden and the Riksbank

**Figure 2:15. CPI**

Sources: Statistics Sweden and the Riksbank

## Alternative scenario: Uncertain recovery abroad

International developments are important to the Swedish economy, and an important condition for the forecasts presented in this report. However, developments are very uncertain. The main scenario assumes a slow recovery abroad, on Sweden's most important export markets. It is assumed in the forecast that economic policy measures will be taken in the euro area and that they will strengthen confidence among households and companies, which will lead to a gradual increase in GDP growth during the forecast period. The forecast for the United States and the rapidly-growing emerging economies is for higher GDP growth than in the euro area.

This section presents two alternative scenarios for economic developments abroad. The first alternative scenario illustrates the effects of a slow and prolonged recovery in Europe, while the second scenario illustrates the effects of confidence returning more quickly, primarily in the United States and China.

### ■ Lower growth in the euro area justifies a lower repo-rate path

It is assumed in the main scenario that growth in the euro area bottomed out during the last quarter of 2012. There is still considerable uncertainty over what shape the continued fiscal policy and structural reforms will take, and how quickly wages will adjust to more competitive levels. These reforms and adjustment processes are important in the management of the debt crisis and they are needed to ensure that confidence returns. If there were to be delays and breakdowns in the reforms, the financial unease might continue or deepen again, and the economic recovery would be slowed down. In that case, growth inflation and interest rates in the euro area would be lower than is forecast in the main scenario (see Figures 2:10 to 2:12).

If GDP growth abroad declines, demand for Swedish export goods will decline. Domestic demand for consumer and investment goods will also decline, as pessimism increases. This means that Swedish GDP growth will also be lower.

When aggregate demand falls, the situation on the Swedish labour market deteriorates and employment falls. This leads to a slower development in wages than in the main scenario. Slower developments in wages and lower employment give households less scope to further increase their consumption. The deterioration in the labour market also means that resource utilisation falls (see Figure 2:13).

The exchange rate weakens somewhat in this scenario, which increases inflationary pressures. However, inflation is nevertheless lower, partly because lower wage demands hold back companies' costs (see Figures 2:14 and 2:15).

The lower inflationary pressures and lower resource utilisation lead to the repo rate being cut (see Figure 2:16).

■ **Higher growth and confidence in the USA and China justify a higher repo-rate path**

The problems linked to the debt crisis in Europe may also be less extensive than has been assumed in the main scenario. Furthermore, there are now several signs that growth in the US economy and in China will gradually increase over the coming years. In a scenario with less extensive problems with the debt crisis in the euro area and a faster recovery in both the US and the Chinese economies, growth abroad would be higher than in the main scenario's forecast (see Figures 2:10 to 2:12).

The effects on the Swedish economy in this scenario are the reverse of those in the previous scenario. The higher GDP growth abroad results in increasing demand for Swedish export goods. Domestic demand for consumer and investment goods also increases, thanks to increased optimism regarding the future. This means that Swedish GDP growth will be higher.

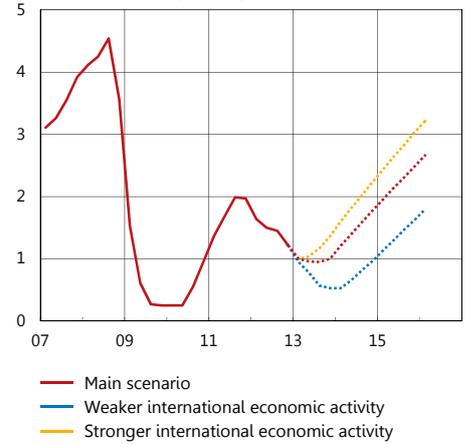
When aggregate demand increases, the labour market improves and employment increases. This means that wage demands increase at a faster pace than in the main scenario. The faster developments in wages and the higher employment give households the scope to further increase their consumption. The improvement in the labour market also means that resource utilisation rises (see Figure 2:13).

The exchange rate strengthens somewhat in this scenario, which holds back inflationary pressures. However, inflation nevertheless is higher, partly because higher wages push up companies' costs. The increased inflationary pressures and the higher resource utilisation lead to the repo rate being raised gradually to stabilise inflation around the target (see Figures 2:14 to 2:16).

**Alternative paths for the repo rate**

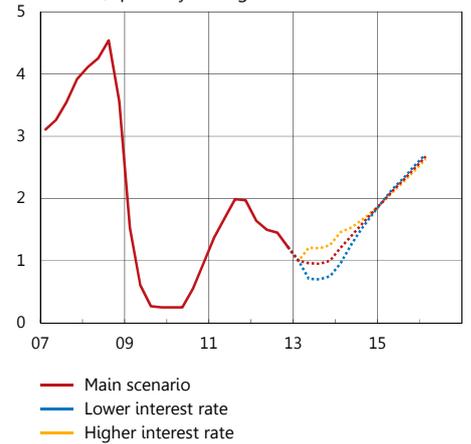
This section presents some arithmetical examples, which illustrate how inflation and some different measures of resource utilisation may develop if the Riksbank were to conduct a different monetary policy than assumed in the main scenario. In the first examples the repo rate is set 0.25 percentage points lower than in the main scenario for four quarters. The second example assumes a repo-rate path that instead is 0.25 percentage points higher than in the main scenario for four quarters (see Figure 2:17). These examples are part of the monetary policy background material that aims to illustrate what constitutes a well-balanced monetary policy.

**Figure 2:16. Repo rate**  
Per cent, quarterly averages



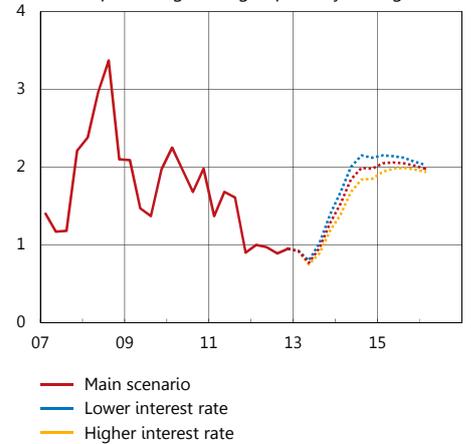
Source: The Riksbank

**Figure 2:17. Alternative repo-rate paths**  
Per cent, quarterly averages



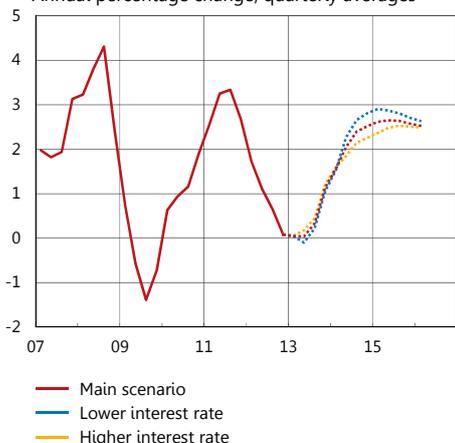
Source: The Riksbank

**Figure 2:18. CPIF**  
Annual percentage change, quarterly averages



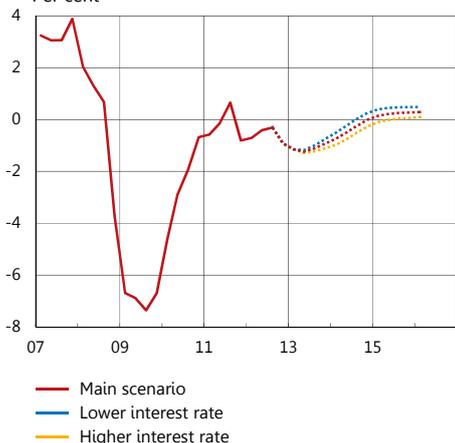
Note. The CPIF is the CPI with a fixed mortgage rate.  
Sources: Statistics Sweden and the Riksbank

**Figure 2:19. CPI**  
Annual percentage change, quarterly averages



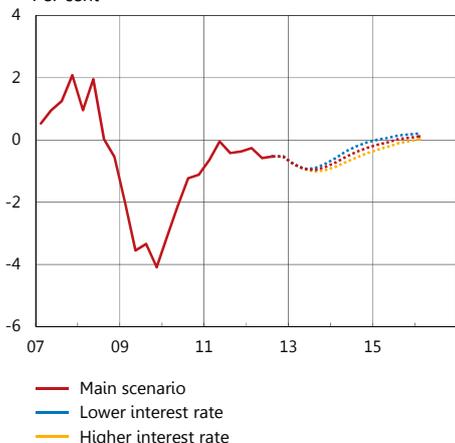
Sources: Statistics Sweden and the Riksbank

**Figure 2:20. GDP gap**  
Per cent



Sources: Statistics Sweden and the Riksbank

**Figure 2:21. Hours gap**  
Per cent



Sources: Statistics Sweden and the Riksbank

### ■ Inflation and resource utilisation with a lower and a higher repo-rate path respectively

The Riksbank influences interest rates in the economy partly through changes in the current repo rate affecting interest rates on short maturities, and partly through changes in the repo-rate path affecting expectations of the future repo rate, and thereby interest rates on longer maturities. A change in the general level of interest rates in turn affects the economy in a number of different ways. A lower repo rate and expectations of a lower future repo rate make it relatively cheaper to borrow money, at the same time as the return on savings falls. Households then consume more, at the same time as companies' costs for investing fall. A lower repo-rate path can thus be expected to lead to total demand being higher. The interest rate's impact on the krona exchange rate also contributes. When the repo rate is cut, it becomes relatively less profitable to invest in financial assets in Swedish krona. A lower repo rate therefore tends to lead to a weaker exchange rate, which stimulates demand for Swedish exports and holds back imports. Companies increase their use of labour, machinery and intermediate goods to meet the higher demand for their products. This means that resource utilisation increases slightly.

When resource utilisation in the labour market increase, wages also increase. The price of machinery, intermediate goods and premises then becomes higher. Companies choose to raise their prices at a faster rate to compensate for the higher costs. Ultimately, this leads to an increase in consumer prices. The weaker exchange rate also makes a contribution, as import prices become slightly higher than before. A lower repo rate thus leads to higher inflation and higher resource utilisation

On the other hand, a higher repo-rate path leads to households holding back on their consumption and to demand falling. The rate of investment also slows down, and a stronger exchange rate leads to a decline in the demand for Swedish exports. Resource utilisation then becomes somewhat lower and the rate of price increase slows down (see Figures 2:17 to 2:22).

### ■ The examples do not capture all of the important factors

The arithmetical examples using a slightly lower and a slightly higher repo-rate path used here are based on a macroeconomic model of the Swedish economy, which takes into account several fundamental and central factors that affect inflation and resource utilisation. But inflation and resource utilisation can also be affected by other factors, which are not captured in these examples.

Household debt is one such factor. A rapid build-up of debt, even if it is not considered to threaten financial stability, can make the economy more sensitive to shocks. Monetary policy may therefore need to be somewhat less expansionary when there is a high debt ratio or rapid build-up of debt, to dampen indebtedness

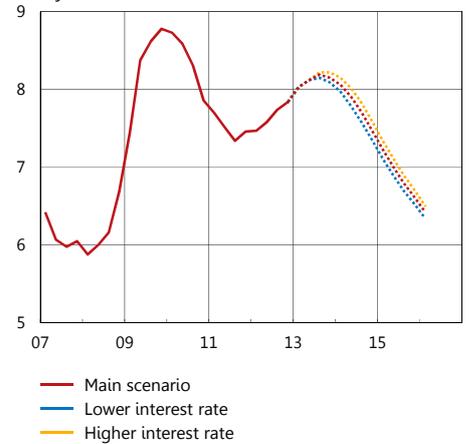
and reduce the risk of large future fluctuations in resource utilisation and inflation.

Another factor that can affect the monetary policy deliberations is how quickly monetary policy has an impact on the economy. The examples illustrated in Figures 2:17–2:22 are based on empirically-estimated links between changes in the repo rate and the effects on the real economy and inflation. According to these estimates, the impact of the repo rate corresponds to the average effect during the period of time used when estimating the model.

The recent slowdown in the economy is largely due to the weak developments abroad and their negative effects on Swedish exports, which hold back companies' propensity to invest. It is probable that the uncertainty prevailing with regard to international economic activity will also contribute to many companies postponing planned investments. Under these circumstances, it is not certain that monetary policy will have the same rapid impact on inflation and resource utilisation as in the examples described here.

**Figure 2:22. Unemployment**

Per cent of the labour force, aged 15-74, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank



## ■ CHAPTER 3 – The current state of the economy

**This chapter presents new information received since the Monetary Policy Update was published in December and an assessment of economic prospects in the short term.**

**Growth in the euro area remains weak, but confidence among companies has begun to rise from very low levels. Indicators point to the unease in the financial markets having continued to decline. But there is a risk of setbacks, which was reflected, for instance, in the fact that government bond yields in the European crisis countries rose at the beginning of February. The recovery in the United States is continuing. Both the US housing market and the labour market have improved. Economic prospects for Asia have also improved in line with the assessment in the December Monetary Policy Update.**

**Most indications are that growth in Sweden slowed down substantially during the end of the year and that we can expect to see a deterioration in the labour market in the coming period. However, sentiment appears to have stabilised, and confidence has begun to recover in some areas. Inflationary pressures remain low.**

### Financial markets

#### ■ The central banks' measures are beginning to take effect

Government bond rates in the European debt crisis countries have been falling for some time which indicates that the central banks' and above all the ECB's measures have begun to have some effect (see Figure 3:1). Both Italy and Spain have issued new bonds for substantial amounts in January. However, there still remains some difficult work on fiscal policy consolidation and the most recent political uncertainty in these countries clearly illustrates that there is still a risk of setbacks. The probability of a country leaving the euro system is now perceived as lower than before, however. Various types of financial risk measure in Europe remain at low levels or have fallen back further since the Monetary Policy Update was published in December. For example, CDS premiums for banks in the euro area have fallen.

#### ■ Increased demand for higher-risk assets

While yields in the countries with debt crises have fallen, treasury bond yields in, for instance, Germany, the United States and Sweden have risen somewhat, as the demand for safer government securities declines when investors demand higher-risk assets (see Figure 3:1).

The fiscal policy agreement in the United States in the New Year alleviated the worst fears regarding the fiscal cliff (see the article "Severe fiscal tightening avoided in the United States"). It contributed to an increase in demand for higher-risk and cyclically-dependent asset types, such as shares and commodities. The fact that the annual accounts reported have been better than expected has also contributed to equity prices rising (see Figure 3:2).

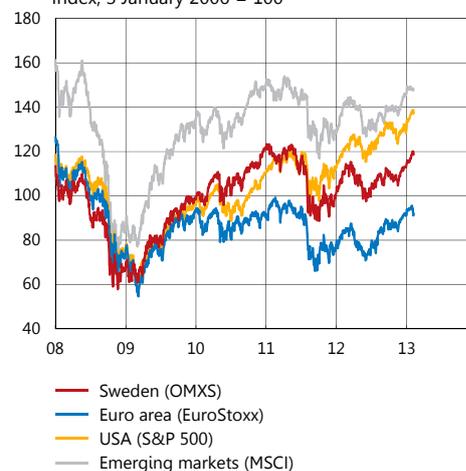
Despite underlying concern over global growth, many commodity prices have risen since the Monetary Policy Update was

**Figure 3:1. Government bond rates with 10 years left to maturity**  
Per cent



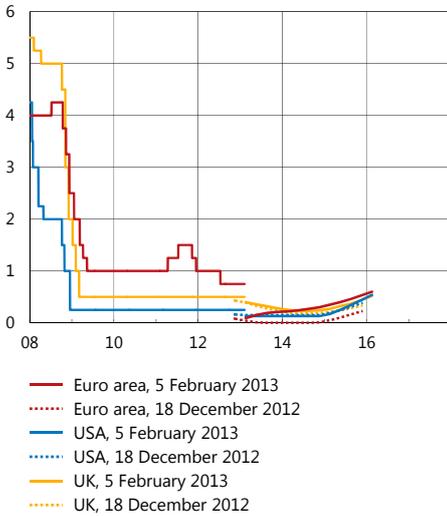
Source: Reuters EcoWin

**Figure 3:2. Stock market movements**  
Index, 3 January 2006 = 100



Sources: Morgan Stanley Capital International, Reuters EcoWin, Standard & Poor's and STOXX Limited

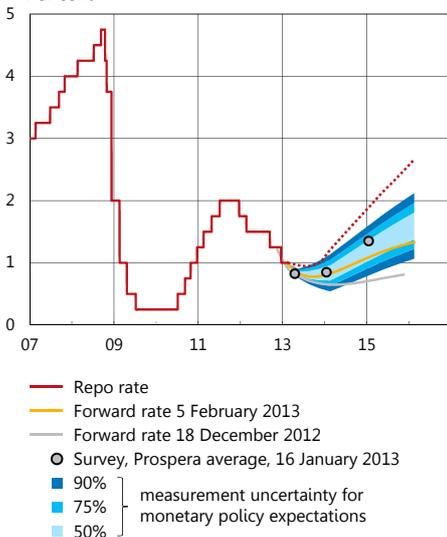
**Figure 3.3. Policy rate expectations measured in terms of forward rates**  
Per cent



Note. Forward rates have been adjusted for risk premiums and thus describe the expected overnight rate, which does not always correspond to the official policy rate.

Sources: Reuters EcoWin and the Riksbank

**Figure 3.4. Repo-rate changes in Sweden measured in terms of forward rates and surveys, money market participants**  
Per cent



Note. Forward rates have been adjusted for risk premiums and thus describe the expected overnight rate, which does not always correspond to the official policy rate. As neither surveys nor forward rates are exact measures of monetary policy expectations, the uncertainty of the measurement is illustrated by an interval.

Sources: Reuters EcoWin, TNS SIFO Prospera and the Riksbank

published in December. The price of Brent crude oil has also risen since then.

■ **Worldwide monetary policy still expansionary**

Although monetary policy expectations, in terms of forward rates, have risen slightly in most currency areas, they are still at very low levels (see Figure 3:3).

The ECB held its policy rate unchanged at its meetings in January and February. Communication from the ECB since the most recent meeting has been interpreted to mean that the probability of a policy rate cut in the coming period is lower than before, according to pricing on the money market. However, according to market pricing, market participants see some probability that the ECB will cut its policy rate from 0.75 to 0.5 per cent later this year.

In the United States, the Federal Reserve is buying government securities and housing-related securities to a total value of USD 85 billion per month, according to the monetary policy decision reached in December. However, the minutes of the meeting showed that some of the monetary policy committee (MPC) members questioned the majority view with regard to continuing the extraordinary measures. The point in time for phasing out the most expansionary monetary policy is expected to be some way off yet. In connection with the monetary policy meeting in January, the Federal Reserve announced that it intended to hold its policy rate low for some time after the asset purchases are complete and after the economy has recovered.

In the United Kingdom, the Bank of England held its policy rate unchanged at its monetary policy meetings in January and February. The size of its asset purchase programme (GBP 375 billion) was also held unchanged. It is not expected to cut its policy rate further. This is partly because most of the members of the MPC questioned the efficiency of further measures.

However, the Japanese central bank has launched new stimulation measures. In December, the fund for asset purchases was extended by JPY 10,000 billion to 76,000 billion up to the end of the next year. Moreover, at its meeting on 22 January the Japanese central bank decided to buy assets to a value of JPY 13,000 billion every month from January 2014 to bring up inflation to the new target of 2 per cent. The new government has also announced a more expansionary fiscal policy.

Since the Riksbank's monetary policy meeting in December, expectations still remain of a further policy rate cut during 2013 (see Figure 3:4 and the article "Perspectives on monetary policy expectations and forward rates").

■ **Continuing good access to funding for the Swedish banks**

The more or less unlimited access to funding from the ECB has kept the European market rates at very low levels. Recently, however, interest rates have risen somewhat, as European banks have made use of the opportunity to repay long-term loans prematurely. This means that the liquidity surplus in the euro area has declined somewhat. The good access to liquidity and the more stable developments on the European markets have also encouraged Swedish banks to lend money to one another at longer maturities and without collateral.

■ **Lower variable rates for households**

The Riksbank's repo-rate cut in December and the banks' good access to funding have led to lower average mortgage rates (see Figure 3:5). The variable mortgage rate has in principle fallen as much as the repo rate since December, while the interest rate for mortgages with longer maturities has remained unchanged. According to Almi's lending indicator, there are slightly more bank managers now saying that the banks' lending margins increased during the fourth quarter of 2012, compared with the previous quarter. The average lending rate to companies continued to fall in December, with regard to both loans with short maturities and those with long maturities.

■ **Weaker economic activity pushes down lending**

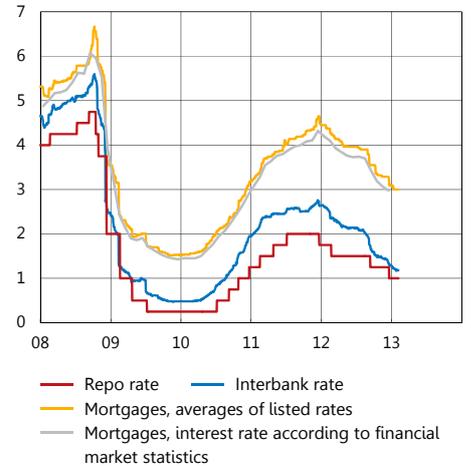
Household sector, and in particular corporate sector borrowing fell further during December, despite a fall in the cost of borrowing (see Figure 3:6). House prices remained largely unchanged during the second half of 2012, while prices of tenant-owned apartments rose slightly (see Figure 3:7).

The fact that borrowing by non-financial companies has slowed down can be seen as a consequence of the fall in investment in the business sector. However, this is not because the companies have difficulty obtaining funding. According to the Business Tendency Survey for January, three out of four companies state they perceive their funding situation to be normal.

According to the Riksbank's company interviews, large companies have gained slightly better access to funding in recent months. However, some smaller companies are perceived to have problems, as the banks have become more selective.

According to Almi's lending indicator, a clear majority of the bank managers interviewed stated that their credit terms for companies remained unchanged between the third and fourth quarters.

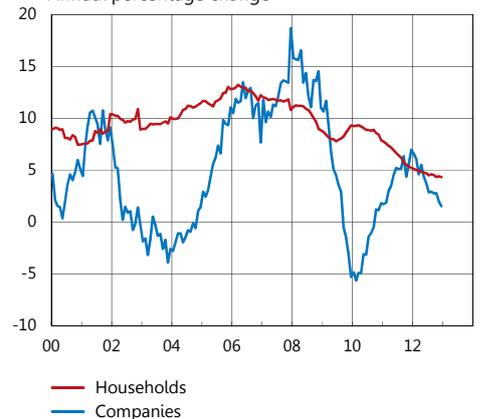
**Figure 3:5. Short-term interest rates in Sweden**  
Per cent



Note. Refers to average of three-month listed mortgage rates from banks and mortgage institutions, the three month interbank rate and the monthly average for three month mortgage rates for new loans according to the Riksbank's financial market statistics for mortgage institutions.

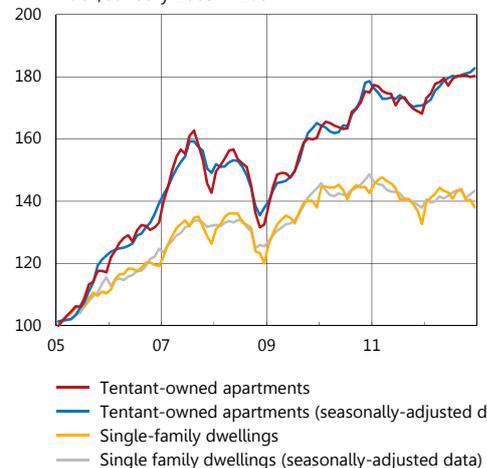
Sources: Reuters EcoWin, Statistics Sweden and the Riksbank

**Figure 3:6. Bank lending to households and companies**  
Annual percentage change



Source: Statistics Sweden

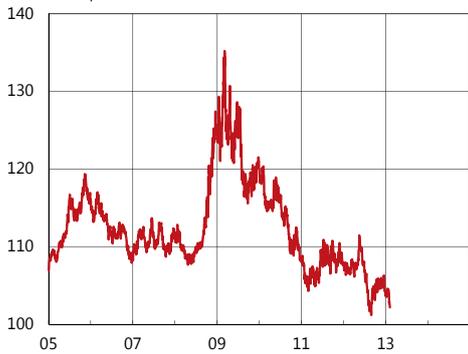
**Figure 3:7. Prices for single-family dwellings and tenant-owned apartments**  
Index, January 2005 = 100



Note. All indices are for Sweden. Valueguard's indices are regression-based price indices.

Sources: Valueguard and the Riksbank

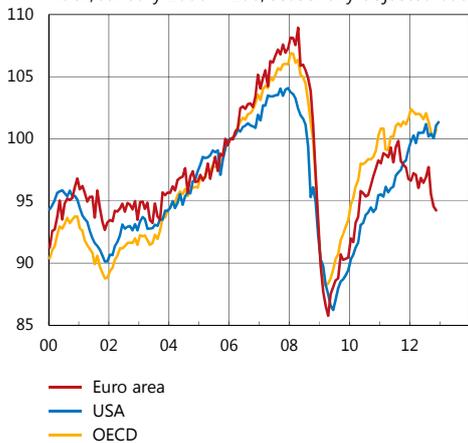
**Figure 3:8. KIX-weighted nominal exchange rates**  
Index, 18 November 1992 = 100



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

Source: The Riksbank

**Figure 3:9. Industrial production**  
Index, January 2006 = 100, seasonally-adjusted data



Sources: Eurostat, Federal Reserve and OECD

**Figure 3:10. Purchasing managers' index, manufacturing sector**  
Index, seasonally-adjusted data



Note. Values above 50 indicate growth.

Sources: Institute for Supply Management and Markit Economics

### ■ Stronger euro and krona

Since the Monetary Policy Update was published, the krona has followed the euro's appreciation against the dollar, but has also strengthened against the euro. The strengthening of the euro is partly because the sentiment on the financial markets is now more positive. The krona has also strengthened against the yen and sterling. In KIX terms, the krona has strengthened by just over 3 per cent (see Figure 3:8).

## International economic situation

### ■ Falling GDP but rising confidence in the euro area

Growth in the euro area is still weak. According to revised statistics for the third quarter, GDP fell by 0.3 per cent, calculated as an annual rate, compared with the preceding quarter. Statistics point to continued weak developments during the fourth quarter, too. For instance, industrial production fell in November for the third month in a row, although the fall was slightly less than in the previous months (see Figure 3:9). The retail trade continued to fall in November and December.

However, forward-looking indicators show some positive signs. Optimism among companies in the euro area has recently begun to rise from very low levels (see Figure 3:10). The aggregate purchasing managers' index rose in January to the highest level in ten months. At the same time, the European Commission's survey indicator rose for the third month in a row. The household confidence indicator for the euro area rose in January, but from a very low level (see Figure 3:13).

All in all, GDP is expected to have fallen heavily during the fourth quarter of 2012 and is expected to fall somewhat during the first quarter of 2013, too.

The labour market in the euro area remains weak, and in December unemployment amounted to 11.7 per cent (see Figure 3:11), although there are considerable differences between countries. Recruitment plans were slightly less pessimistic in all sectors in January, according to the European Commission's indicator.

The rate of inflation in the euro area fell somewhat from 2.2 per cent in December to 2.0 per cent in January, according to preliminary figures (see Figure 3:12).

### ■ Severe fiscal tightening avoided in the United States

The US Congress managed to reach an agreement in the new year on parts of its fiscal policy. This meant that they avoided an automatic tightening of fiscal policy of 4 per cent of GDP. This tightening would have had very negative consequences for GDP growth throughout 2013 (see the article "Severe fiscal tightening avoided in the United States").

According to preliminary statistics, GDP fell in the fourth quarter by 0.1 per cent, compared with the third quarter and calculated as an annual rate. Both cuts in defence expenditure and investment in stocks contributed to the fall. Household consumption and fixed gross investment continued to show favourable development, however.

According to the purchasing managers' index, confidence among companies in the manufacturing industry improved in December and January (see Figure 3:10). Confidence among households, on the other hand, declined tangibly in December and January (see Figure 3:13). This was probably an effect of the uncertainty prevailing over what fiscal policy would be conducted after the turn of the year and the tax increases that came into force in January.

The recovery in the housing market has continued and indicators are pointing in a positive direction. The time it takes to sell a house has continued to fall to levels below the historical average. Housing construction is increasing and confidence among construction companies has increased rapidly.

The labour market is continuing to improve. Unemployment was 7.9 per cent in January (see Figure 3:11). Employment rose at the same time by 157,000 jobs.

CPI inflation was 1.7 per cent in December and underlying inflation, which is adjusted for energy and food prices, was marginally higher.

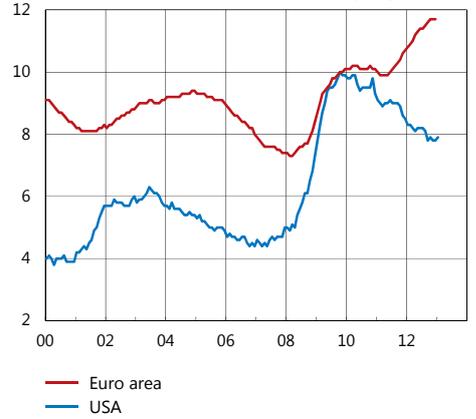
**■ Mixed outlook on other important export markets**

In the United Kingdom, GDP in the fourth quarter fell by 1.2 per cent, when calculated as an annual rate. Unemployment is high and the figure measured in November was 7.7 per cent. In December, households were still very pessimistic seen in a historical perspective, while companies in the manufacturing industry have become more optimistic in recent months. Inflation amounted to 2.7 per cent in December, which was unchanged from the previous month.

The Norwegian economy is continuing to show strong growth and during the third quarter of last year mainland GDP increased by 2.8 per cent, when calculated as an annual rate (see Figure 3:14). Inflationary pressures in Norway have been low, partly because of strong development in the Norwegian krona in 2012. However, inflation has begun to rise and increased from 1.1 in November to 1.4 per cent in December. Rising energy prices contributed to the upturn.

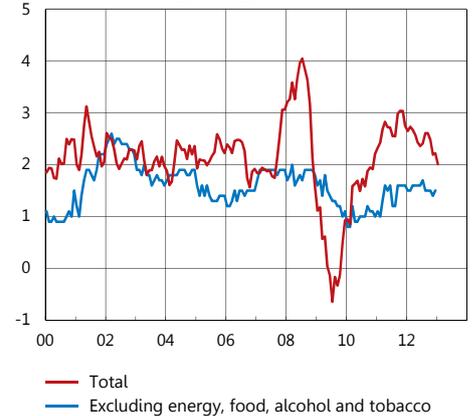
GDP in Denmark grew slightly in the third quarter of 2012, after a weak period (see Figure 3:14). However, industrial production fell in November, which points to continued weak development. Inflation has fallen recently and amounted to 2.0 per cent in December.

**Figure 3:11. Unemployment**  
Per cent of the labour force, seasonally-adjusted data



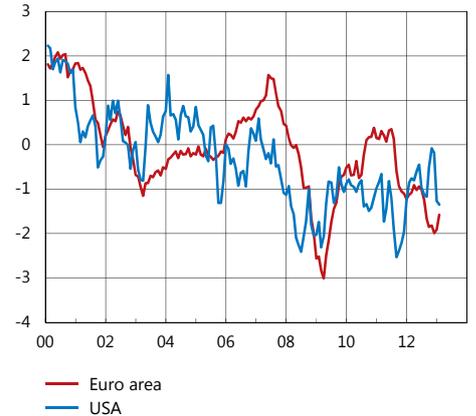
Sources: Bureau of Labor Statistics and Eurostat

**Figure 3:12. HICP for the euro area**  
Annual percentage change



Source: Eurostat

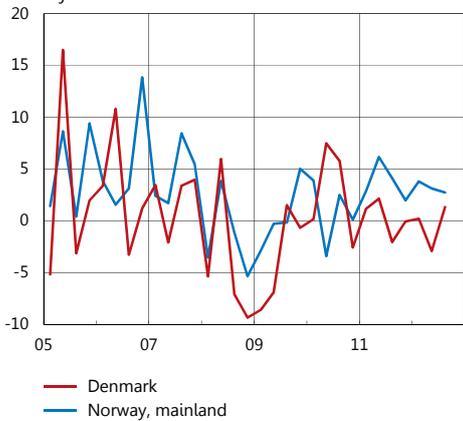
**Figure 3:13. Confidence indicators for households**  
Standard deviation



Note. The indicator is normalised so that the mean value is 0 and the standard deviation is 1.

Sources: European Commission and University of Michigan

**Figure 3:14. GDP in Denmark and Norway**  
Quarterly changes in per cent, annual rate, seasonally-adjusted data



Sources: Statistics Denmark and Statistics Norway

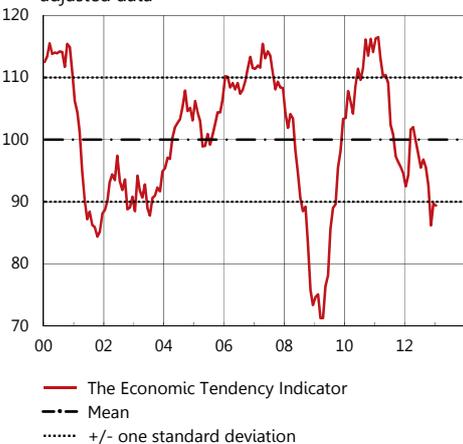
**Figure 3:15. Purchasing managers' index for the manufacturing industry**  
Index, seasonally-adjusted data



Note. Values above 50 indicate growth.

Source: Swedbank/Sif

**Figure 3:16. The Economic Tendency Indicator**  
Index, mean = 100, standard deviation = 10, seasonally-adjusted data



Source: National Institute of Economic Research

### ■ Economic prospects for Asia strengthening

During the third quarter of 2012, Japan's GDP decreased by 3.5 per cent, when calculated as an annual rate. Exports also declined in November, compared with the same month in the previous year. The downturn is due to weaker demand abroad and the on-going island conflict with China, which has led to weaker demand from China for Japanese products. However, industrial production rose by 2.5 per cent in December, compared with November, and companies have positive plans for future production. The Japanese yen has weakened substantially in recent months.

During the fourth quarter, GDP in China increased by 8.2 per cent, calculated as an annual rate. The growth in industrial production has also increased. The same applies to the retail trade, where recent good income growth may have contributed to the upturn. Exports to the EU increased more than expected. In January, the purchasing managers' index rose to the highest level in two years and points to increased production in the manufacturing industry (see Figure 3:10). Inflation was 2.5 per cent in December. One contributory factor was high vegetable prices, which in turn are explained by the unusually cold weather.

Economic activity is also strengthening in other parts of Asia. In Korea, for instance, growth increased from close to zero during the third quarter to 1.5 per cent when calculated as an annual rate in the fourth quarter.

## Swedish economy

### ■ Slowdown in the Swedish economy

Most indications are that GDP in Sweden fell in the fourth quarter of 2012, compared to the third quarter. This is also supported by the Riksbank's company interviews, conducted in January. Companies in the manufacturing sector, in particular, state that economic activity has weakened since the previous survey in September 2012. The weak economic activity abroad dampened demand for Swedish export goods and industrial production fell. On the other hand, the services production index rose in the fourth quarter. Weak confidence among Swedish households points to consumption growth being slow at the end of last year.

However, there are indicators pointing to sentiment having stabilised and confidence beginning to recover in some areas. The purchasing managers' index rose sharply in January (see Figure 3:15). The Economic Tendency Survey, which summarises expectations among Swedish households and companies, was largely unchanged in January, although it is still much lower than normal (see Figure 3:16). All in all, GDP is expected to have fallen somewhat in the fourth quarter of 2012, and is expected to increase slightly at the beginning of 2013.

■ **Subdued confidence among households but some signs of stabilisation**

During the fourth quarter of 2012, turnover in the retail sector increased by 1.5 per cent, compared with the same period in 2011. Sales of durable consumer goods increased by 1.8 per cent, while sales of non-durable goods increased by 1.2 per cent.

Household sector confidence, as measured according to the National Institute of Economic Research's confidence indicator, has been weak for the past six months. However, confidence increased in January (see Figure 3:17). Households' views on their own finances are more positive than their views on the Swedish economy. The fact that households' confidence is still relatively low is expected to lead in the short run to increased saving and to consumption increasing more slowly than normal.

■ **Weak exports but increase in orders**

The weak economic activity in the euro area probably contributed to slowing down Swedish export growth during the second half of 2012 (see Figure 3:18). Exports of both goods and services have been subdued. A low level of growth in large parts of Europe is expected to hold back Swedish exports in the period ahead. According to both the Economic Tendency Survey and the purchasing managers' index, export orders have shown an upturn in recent months, however, which indicates some stabilisation (see Figure 3:19).

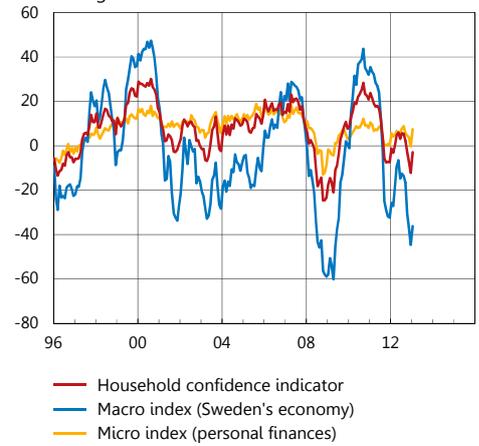
■ **Low need for investment**

Investment as a quarterly rate fell in both the second and third quarters of last year. This is partly linked to the weak development in Swedish exports and to Swedish households' restrained consumption. Companies are cutting back their rate of production, which means that the need to invest declines. The low need for investment is reflected, for instance, in capacity utilisation, which has declined and is now lower than normal.

Moreover, housing investment is continuing to fall. During the third quarter of last year investment in housing fell by almost 13 per cent, compared with the third quarter of 2011 (see Figure 3:20). The statistics on the number of housing starts also points to housing investment developing weakly for some time to come.

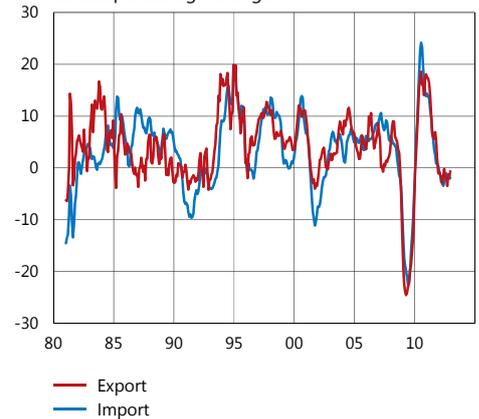
As demand is low, companies' need to build up their stocks is also thought to decrease in the near future. Moreover, there was a relatively substantial build-up of stocks during the three first quarters of 2012 in relation to the development of demand. This is expected to contribute to slowing down GDP growth over the coming six months.

**Figure 3:17. Confidence indicators for households**  
Net figures



Source: National Institute of Economic Research

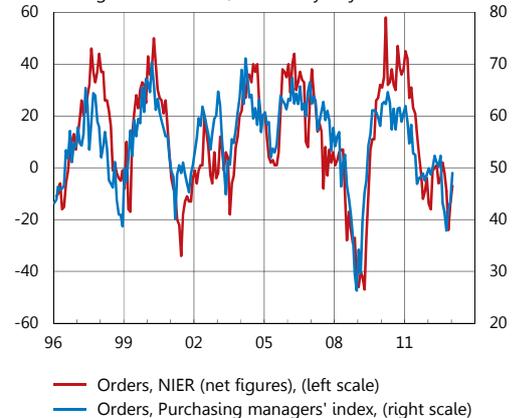
**Figure 3:18. Foreign trade with goods**  
Annual percentage change



Note. Three-month moving average. Fixed prices and seasonal adjustment calculated by the Riksbank.

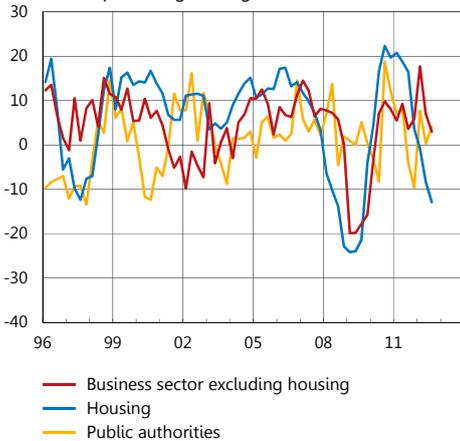
Sources: Statistics Sweden and the Riksbank

**Figure 3:19. New export orders in the manufacturing sector**  
Net figures and index, seasonally-adjusted data



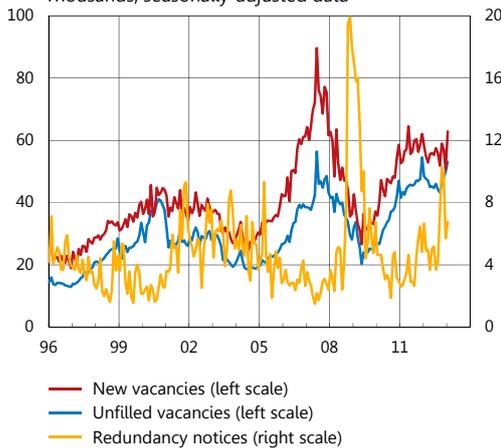
Sources: National Institute of Economic Research and Swedbank/Silf

**Figure 3:20. Gross fixed capital formation**  
Annual percentage change



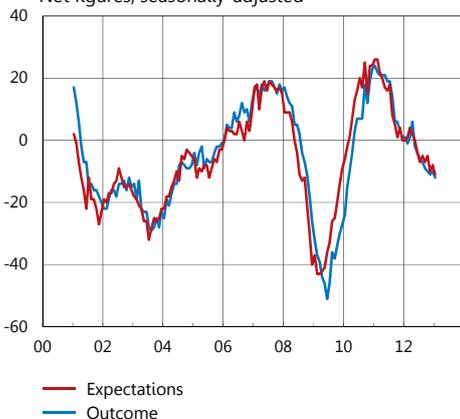
Source: Statistics Sweden

**Figure 3:21. New and unfilled vacant jobs and redundancy notices**  
Thousands, seasonally-adjusted data



Sources: Employment Service and the Riksbank

**Figure 3:22. Employees in the business sector**  
Net figures, seasonally-adjusted



Source: National Institute of Economic Research

### ■ Weak demand dampens imports

Swedish imports have shown weak development recently and fell by just over 2 per cent in the third quarter of 2012, compared with the second quarter and calculated as an annual rate. Continued weak demand, weak industrial activity and a slowdown in the build-up of stocks all indicate that imports will continue to be subdued. Foreign trade up to the end of December also supports the picture of imports weakening further at the end of last year (see Figure 3:18).

### ■ Reduced public saving

When economic activity weakened last year, public sector saving also deteriorated and became negative. The Budget Bill for 2013 contains both tax reductions and increases in expenditure that weaken financial saving by SEK 17 billion in 2013, compared with 2012. Financial saving is at the same time strengthened by almost as much in that, according to the current regulations, public expenditure is not as strongly linked to GDP developments as income. Some public expenditure items are nominally unchanged in the state budget, if the Government does not decide to change them, for instance, general state subsidies and maximum daily allowances in unemployment insurance. Other expenditure items grow more slowly than GDP, because of low indexing. Thus, financial saving is neither strengthened nor weakened by the decisions made by the government or by the current regulations.

### ■ Resilient labour market slowing down in 2013

Developments in the Swedish labour market at the end of 2012 were slightly stronger than expected. Seasonally-adjusted unemployment amounted to 7.8 per cent in the fourth quarter of 2012, and employment rose. During 2012, the employment rate has been largely unchanged, while unemployment has risen slightly as a result of increased labour force participation. Information for the fourth quarter points to the number of hours worked developing more strongly than in the assessment in the December Monetary Policy Update.

Indicators paint a picture of weaker development in the labour market in the coming period. Although the number of redundancy notices has declined recently, levels were high in October and November 2012, which clearly signals poorer future expectations among companies (see Figure 3:21). The number of job vacancies reported to the Swedish Public Employment Service is still relatively high, although it has declined in recent months. The Riksbank's company interviews in January indicate that companies are planning to reduce their personnel over the coming months. The same picture is painted by the business sector's recruitment plans in the Business Tendency Survey (see Figure 3:22). The percentage of companies perceiving a shortage of labour has risen slightly in the construction

and private services sectors, while it has declined in the manufacturing industry and retail trade (see Figure 3:23).

**■ Design of industrial agreement affects wages and costs in first quarter**

According to the preliminary short-term wage statistics from the National Mediation Office, wages in the economy as a whole increased by 2.7 per cent during the period January–November 2012, compared with the same period last year. Wages in industry have increased at a faster rate than those in other parts of the business sector (see Figure 3:24). For the year 2012 as a whole, wages are expected to have increased by 3.1 per cent when all retroactive wage payments have been entered into the statistics. The Riksbank's new assessment entails a marginal downward revision, compared with the forecast in December.

During the first quarter of this year, wages according to the short-term wage statistics definition are expected to increase at a slightly slower rate than last year, which is partly due to the current wage agreement, which entails the rate of wage increase being zero for the two final months of the agreement period, that is, February and March 2013.

The design of the industrial wage agreement contributes to the National Accounts' figures for wages per hour worked and labour costs per hour in the economy as a whole being expected to increase more slowly during the first quarter of this year than the end of last year. Compared with the assessment in December, both of the forecasts have been marginally adjusted down.

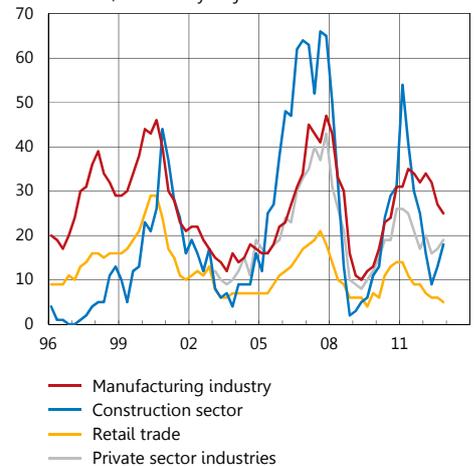
The growth rate of labour productivity is at the same time expected to rise, which means that the annual percentage rate of increase in unit labour costs will be lower during the first quarter of this year than in 2012. Compared with the assessment in December, the forecast for the rate of increase in unit labour costs remains largely unchanged for the first quarter of this year.

**■ Somewhat higher inflation than expected in December**

In December, the CPI fell somewhat for the second month in a row, measured as an annual percentage change. This is linked to households' mortgage interest expenditure having fallen, primarily as a result of the gradual cuts in the repo rate (see Figure 3:25). The rate of increase in the CPIF, that is, the CPI with a fixed mortgage rate, amounted to 1.0 per cent in December. The rate of increase in the CPIF, excluding changes in energy prices, was 1.1 per cent in the same month (see Figure 3:26).

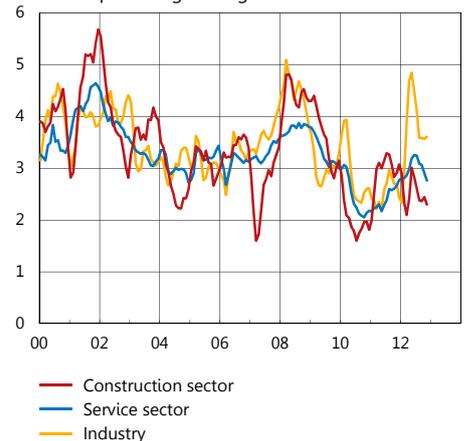
The outcomes for all the measures of inflation were slightly higher than was expected in the latest Monetary Policy Update. The forecast for the coming months have been revised upwards somewhat, but inflation is still low. CPIF inflation is expected to be on

**Figure 3:23. Proportion of companies reporting a shortage of labour**  
Per cent, seasonally-adjusted data



Source: National Institute of Economic Research

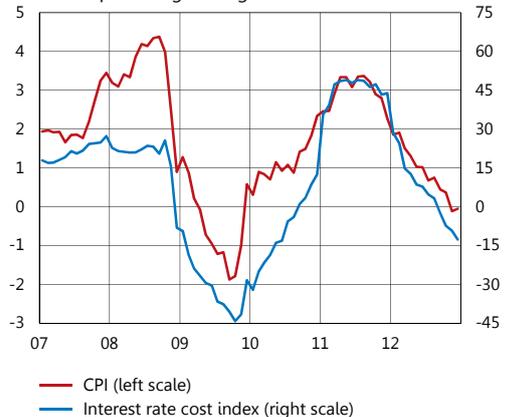
**Figure 3:24. Wages in the business sector**  
Annual percentage change



Note. Three-month moving average. Refers to wages according to short-term wage statistics. Preliminary outcomes for the last 12 months, which are usually revised upwards.

Sources: National Mediation Office

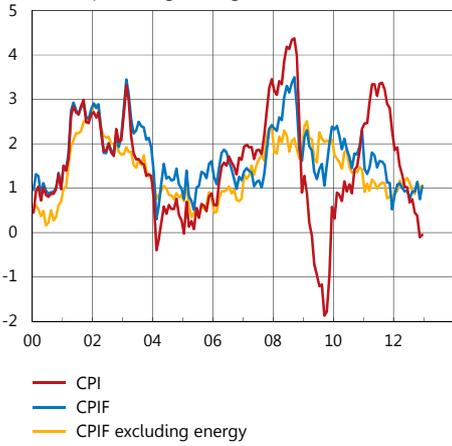
**Figure 3:25. Consumer price index and interest rate cost index**  
Annual percentage change



Note. The interest rate cost index consists of interest rate indexes and capital stock indexes.

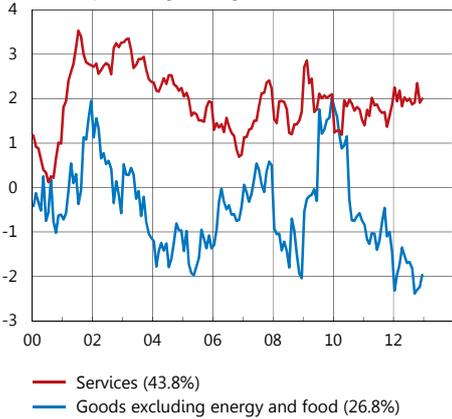
Source: Statistics Sweden

**Figure 3:26. CPI, CPIF and CPIF excluding energy**  
Annual percentage change



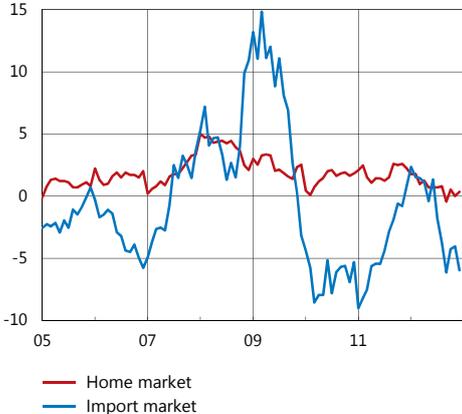
Note. The CPIF is the CPI with a fixed mortgage rate.  
Source: Statistics Sweden

**Figure 3:27. Prices of goods and services in the CPI**  
Annual percentage change



Note. The weight of the CPI in the respective components is given in brackets 2012.  
Sources: Statistics Sweden and the Riksbank

**Figure 3:28. Producer price index, durable consumer goods**  
Annual percentage change



Source: Statistics Sweden

average just under 1 per cent in the coming six months, and CPI inflation is expected to be around zero in the same period.

There is a major difference in the rate of increase for goods and services in the CPI. Prices for services have increased by around 2 per cent in recent years, while goods prices have fallen (see Figure 3:27). Goods prices are expected to continue to fall, albeit at a somewhat slower rate than in 2012, while service prices continue to rise at roughly the same rate as before.

According to the Riksbank's company survey carried out in January, the very low price pressures will remain in the short term. Many companies say that there is severe pressure on prices and some of them talk in terms of a price war. Approximately the same number of companies expect prices to fall in the next three months as expect prices to increase, and it is usually only small price changes that are regarded as realistic. Developments in consumer goods prices in the producer channel are expected to have a delayed effect on prices to consumers. This price development has been subdued over the past year, both on the domestic market and the import market (see Figure 3:28).

According to Prospera, money market participants are expecting an inflation rate of 1.0 per cent in one year's time, 1.6 per cent in two years' time and 2.0 per cent in five years' time. According to the National Institute of Economic Research's Business Tendency Survey, households' inflation expectations one year ahead fell from 1.6 per cent in December to 1.5 per cent in January. Companies' inflation expectations one year ahead also fell from 0.9 per cent in the third quarter to 0.7 per cent in the fourth quarter.

## ■ Severe fiscal tightening avoided in the United States

**The Riksbank has for some time made assumptions concerning fiscal tightening in the US economy which have proved to be in line with the decisions made by Congress to date. The tightening measures outlined in the new bill are significantly smaller than the tax increases that would have come into force if Congress had not reached an agreement, increases that would have risked throwing the US economy back into recession in the short term. The US debt ceiling, which was reached at the end of December, has been temporarily removed. The original bill also included decisions on automatic cuts in expenditure which Congress chose to postpone for two months. In the longer term, major challenges will have to be faced in the effort to reduce the US sovereign debt to a long-run sustainable level. Important questions therefore remain concerning US fiscal policy, despite the fact that Congress managed to avoid the fiscal cliff this time.**

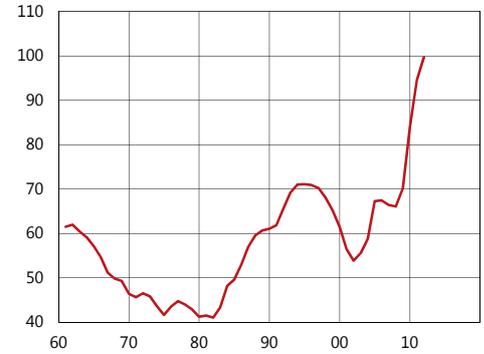
### The background to the fiscal cliff

The United States has substantial deficits in its public finances and a growing sovereign debt (see Figure A1). It is estimated that public debt will increase to almost 200 per cent of GDP by 2037 unless changes are made to the current regulatory framework for government expenditure.<sup>6</sup> The growing debt is partly due to rising federal costs relating to the increase in the percentage of elderly people in the population. The parties in Congress agree that this increase in the debt is not sustainable in the long run, but are finding it difficult to agree on how central government income and expenditure should be adjusted.

One component of the fiscal-policy framework in the United States is a self-imposed debt ceiling, which means that the US Department of the Treasury must get permission from Congress to borrow money to cover a federal-budget deficit. Problems arose in August 2011 when the United States came close to reaching the debt ceiling. Congress did not want to raise the ceiling without at the same time being able to present a plan to reduce the federal debt as a percentage of GDP in the long term. The debt ceiling was raised at the eleventh hour. In order to avoid this scenario the next time the debt ceiling was reached at the end of 2012, Congress legislated on substantial automatic cuts in public expenditure that would come into force if no long-term agreement was reached. The legislation stipulated that these cuts, which mainly relate to defence spending but also to healthcare, would come into force on 1 January 2013. Several temporary forms of tax relief would also be withdrawn at the same time.

It was estimated that the tax increases and the cuts in expenditure, together referred to as the fiscal cliff, would correspond

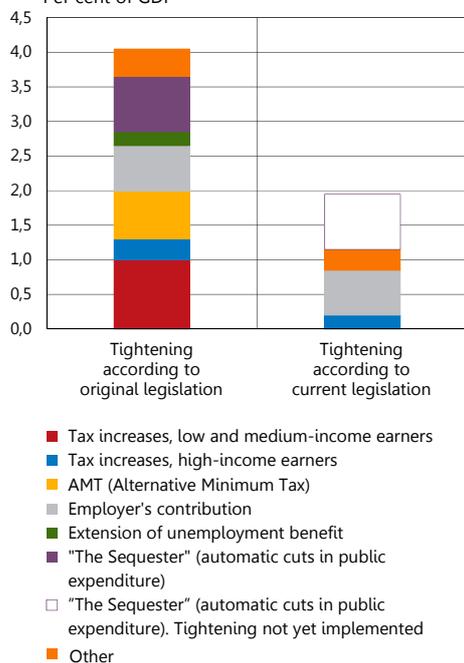
**Figure A1. Development of debt in the USA**  
Per cent of GDP



Note. Public debt.  
Source: OECD

<sup>6</sup> For a detailed description of this scenario, see Congressional Budget Office (2012), "The 2012 Long-term Budget Outlook", [www.cbo.gov](http://www.cbo.gov).

**Figure A2. Components of the fiscal cliff and tightening according to new legal bill 1 January 2013**  
Per cent of GDP



Note. Rough calculations.

Sources: IMF and the Riksbank

to just over 4 per cent of the United States' GDP. If all the tightening measures had come into force at the turn of the year, this would probably have led to a new recession in the United States.<sup>7</sup>

### Agreement in Congress after the New Year

The tightening on the income side constituted almost three-quarters of the fiscal cliff. To avoid a new recession, but also to ensure an increase in central-government income, the Democrats and Republicans agreed, following prolonged negotiations in Congress in early January, to increase certain tax rates. The main point of the agreement was that income-tax rates were increased for the two per cent of the US population that earn most. The current tax rates for the rest of the population were made permanent. Other parts of the agreement relate to the so-called Alternative Minimum Tax, which was adjusted upwards in line with inflation so that it will not affect medium-income earners.<sup>8</sup> Federal unemployment benefits were extended for a further year and payroll taxes, which were temporarily reduced during the financial crisis, were restored to their previous levels.<sup>9</sup> In total, these tightening measures on the income side correspond to approximately 1 per cent of GDP (see Figure A2). The decision on the automatic tightening measures on the expenditure side has been postponed for two months, until 1 March at the latest.

### Important decisions remain to be made

The automatic reductions in expenditure amount to approximately 0.8 per cent of GDP and consist of cuts in the public sector, mainly with regard to defence but also to healthcare. If Congress fails to make a decision about these reductions in expenditure before 1 March, they will automatically come into force.

In practice, the United States hit the federal debt ceiling at the end of December 2012. Using extraordinary measures, the Department of the Treasury prevented federal funds from running out until the end of January, when Congress decided to remove the debt ceiling until 18 May. If Congress fails to agree on a long-term plan to reduce government expenditure by then, the ceiling will eventually have to be raised once again. This will have to be done to avoid defaulting on the sovereign debt and closing down public operations.

### The Riksbank's forecast is in line with the agreement in Congress

The agreement in Congress on the income side means in practice that fiscal-policy tightening measures comprising 4 per cent of GDP have been avoided. The agreement, together with previous decisions to reduce public expenditure during 2013, represents fiscal tightening amounting to just over 1 per cent of GDP. If the automatic cuts on the expenditure side come into force, as would appear to be

<sup>7</sup> See Congressional Budget Office (2012), "An Update to the Budget and Economic Outlook: Fiscal Years 2012 to 2022", [www.cbo.gov](http://www.cbo.gov).

<sup>8</sup> The Alternative Minimum Tax (AMT) is a federal income tax on incomes above a certain level, mainly intended for high-income earners. The wage earner pays this tax over and above the "regular" income tax.

<sup>9</sup> Payroll taxes are shared equally between employers and employees.

the case at the time of writing, then the total tightening programme for 2013 will amount to approximately 2 per cent of GDP. However, if the Democrats and Republicans in Congress reach another agreement, it is possible that the cuts will be somewhat smaller. All in all, it appears that the tightening measures in US fiscal policy in 2013 will correspond to approximately 1.5 per cent of GDP, which is largely in line with the assumptions the Riksbank has been making for some time.

The Riksbank's forecast assumes that US budget consolidation will continue in the years ahead. This is necessary to enable the United States to come to terms with its public finances in the long term in light of the rapidly increasing federal debt as a percentage of GDP and the long-term challenge to finance the public welfare systems.

## ■ The household balance sheet and the macroeconomic assessment

**There is a mutual interdependence between the households' assets and liabilities and the households' consumption and saving. Changes in the value of the households' assets thus have direct effects on the development of the economy via consumption and saving. The Riksbank therefore makes forecasts for the households' assets and liabilities. One way of illustrating the relationship between the households' liabilities and assets is to compile a balance sheet for the households. However, there is no accepted definition that shows which assets and liabilities should be included in such a balance sheet. In this article, we present how the Riksbank compiles information for a household balance sheet, what factors affect the balance sheet and what changes in the balance sheet may have a significant impact on economic development.**

### **The Riksbank's compilation of a balance sheet for the Swedish households**

"Balance sheet" is a term used in bookkeeping, for example, to illustrate the relationship between assets, liabilities and capital. One of the problems with compiling such a balance sheet for the households is that since 2007 there has been no regular official compilation of the households' assets and liabilities. There are a number of compilations in which the household balance sheet is estimated, most recently by Statistics Sweden in 2010, for example.<sup>10</sup> However, if one wants to follow the development of the household balance sheet on an ongoing basis then this must be compiled from a number of different statistical sources.

Household assets can be divided into financial and real assets. Statistics on the households' financial assets are published in the Financial Accounts every quarter.<sup>11</sup> The financial assets include the households' holdings of shares, bonds, funds, bank deposits and so on. In 2011, these liquid assets constituted approximately half of the financial assets. The other half consists of insurance saving, which includes private pension saving (see Table A1). Since the mid-1990s, collective insurance saving (including the premium pension system, PPM) has also been booked as part of the households' assets.

The proportion of directly-owned shares and funds in total wealth is relatively small (see Table 1). On the other hand, insurance saving and the PPM system include a significant proportion of shares. The households thus own many more shares than is reflected in their level of direct shareholding.

<sup>10</sup> See "Assets, liabilities and holding gains - Role of balance sheets underestimated in statistics", Statistics Sweden 2010.

<sup>11</sup> The Financial Accounts are part of the National Accounts system and are published by Statistics Sweden.

**Table A1. Household assets**  
Per cent of total assets

	Q1 1990	Q1 2000	Q4 2011
<b>Financial assets</b>			
Shares and mutual-fund units	14.5	25.4	10.2
Bonds	4.1	2.3	1.1
Bank deposits*	19.6	10.4	12.0
Private insurance saving	5.6	11.1	6.5
Collective insurance saving	0.0	10.7	17.9
Other	0.4	4.0	3.3
<b>Real assets</b>			
Single-family dwellings and second homes	48.0	30.7	36.8
Tenant-owned apartments	7.8	5.4	12.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Note. \* including banknotes and coins. The percentages do not add up exactly to 100 due to rounding off.

Sources: Statistics Sweden and the Riksbank

The households also have **real assets** (see Table A1 and Figure A3). However, no statistics on real assets are published, they have to be calculated instead. The Riksbank calculates the value of single-family dwellings and second homes on the basis of taxation outcomes and prices (in accordance with so-called purchase price coefficients). This calculation constitutes a measure of the market value of the total housing stock.<sup>12</sup> The Riksbank also includes holdings in tenant-owned apartments among the real assets. This data is available in Statistics Sweden's Financial Accounts, where the households' holdings in tenant-owned apartments are instead defined as a financial asset.<sup>13</sup>

To get a picture of the household balance sheet one must also get an idea of **the households' financial liabilities**. It is above all the real assets that are associated with loans, as housing purchases are often financed by taking mortgages.

**Table A2. Household balance sheet 2011**  
Percentage of disposable income and SEK billion

	Per cent	SEK billion
Financial assets*	319	5,527
Real assets	307	5,330
Financial liabilities	174	3,016
Net assets	452	7,841

Note. \*including collective insurance saving.

Sources: Statistics Sweden and the Riksbank

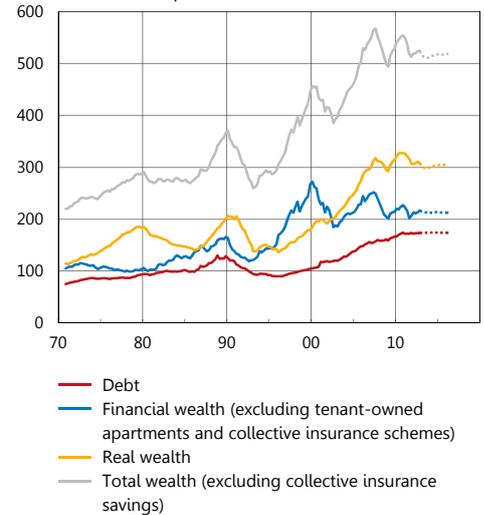
According to the Riksbank's measure of the household balance sheet, assets at the end of 2011 amounted to an estimated SEK 10,858 billion, while liabilities amounted to SEK 3 016 billion.<sup>14</sup> The net total of the households' assets and liabilities was thus just over SEK 7,800

<sup>12</sup> The measure of real wealth does not include household assets in, for example, multi-family dwellings (that is privately-owned apartment buildings), land and forest but this estimate should nevertheless comprise most of the households' real assets.

<sup>13</sup> This thus means that Statistics Sweden uses a different definition of financial assets.

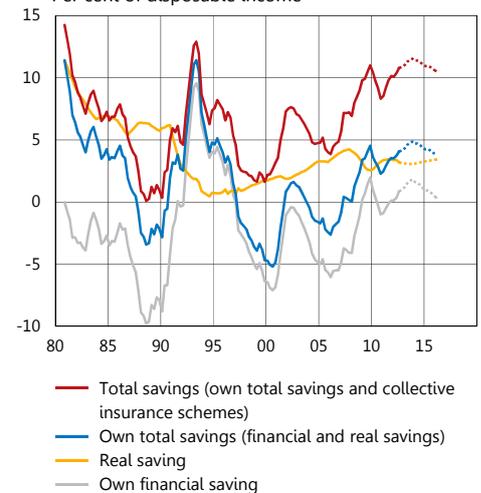
<sup>14</sup> One could also argue that the discounted value of future incomes should be included in a balance sheet as these reflect the households' human capital. Estimating this is of course difficult but there are many indications that human capital, if it was included, would in all likelihood be easily the largest item on the balance sheet.

**Figure A3. Household wealth and debt**  
Per cent of disposable income



Sources: Statistics Sweden and the Riksbank

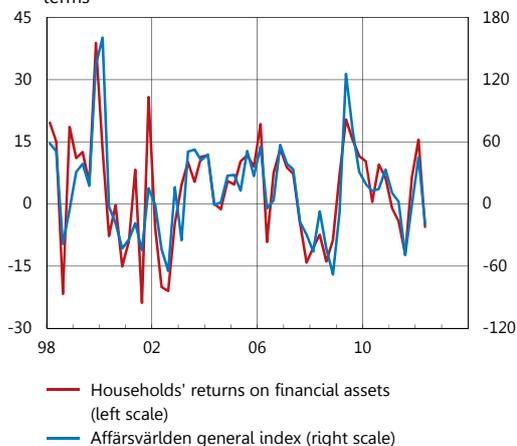
**Figure A4. Different definitions of household savings**  
Per cent of disposable income



Sources: Statistics Sweden and the Riksbank

**Figure A5. Households' returns on financial assets and the Affärsvärlden general index**

Quarterly changes in per cent calculated in annualised terms

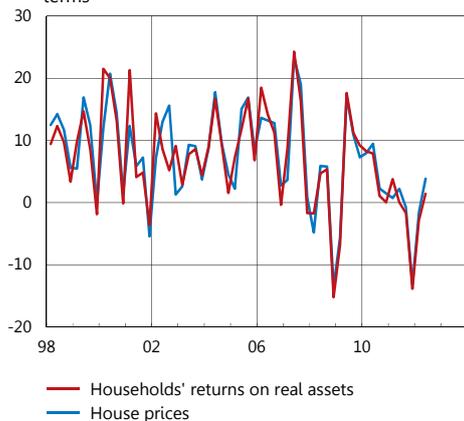


Note. The change in value is calculated as the difference in the outstanding value between two quarters, adjusted for the transactions that have taken place during the quarter.

Sources: Affärsvärlden, Statistics Sweden and the Riksbank

**Figure A6. Households' returns on real assets and house prices**

Quarterly changes in per cent calculated in annualised terms



Note. The change in value is calculated as the difference in the outstanding value between two quarters, adjusted for the transactions that have taken place during the quarter.

Sources: Statistics Sweden and the Riksbank

billion.<sup>15</sup> However, this of course says nothing about the balance sheets of individual households.

### Saving affects the change in the balance sheet

Total household saving is the difference between income and consumption expenditure. Total saving has sometimes been negative in recent decades, but it has been positive since the financial crisis, see Figure A4. The official definition of total household saving in Sweden also includes allocations to the collective insurance schemes.<sup>16</sup> Total saving can also be divided up into financial saving and real saving, see Figure A4.

Real saving is that which the households invest in housing, for example in extensions to a second home. Financial saving, on the other hand, covers the total for changes in financial assets, amortisation and new debts: For example, a positive financial saving may mean that a household has deposited money in a bank account, purchased shares or made amortisation payments on an existing loan. If the financial saving is instead negative, the household may, for example, have withdrawn money from a bank account or taken a new loan. Total household saving is in other words the total of the financial assets bought or sold, the real investments made and the amortisation payments made or additional loans taken.

### Asset prices affect the value of the balance sheet

Financial assets help to increase household incomes through interest earnings or when the households receive share dividends, while household incomes are reduced by the interest they pay on their debts.<sup>17</sup> The price change that takes place between two points in time also forms part of the return on an asset but does not directly affect household income (unless the asset is sold).<sup>18</sup> As the balance sheet is market valued, changes in asset prices will, on the other hand, affect the balance sheet.

Share prices, in particular, are closely linked to changes in the return on financial assets (see Figure A5). In the case of real assets, it is of course mainly changes in housing prices that lead to changes in value (see Figure A6). Historically, there has also been a clear link between saving and changes in the balance sheet. It thus appears that households have tended to save more when assets have fallen in value, and vice versa (see Figure A7). To assess the development of the balance sheet during a forecast period, one must thus get an idea of the development of saving, dividends and capital expenditure but, above all, of the development of assets prices.

<sup>15</sup> The net total, or the net assets, thus reflects the households' capital.

<sup>16</sup> The National Accounts include the saving that takes place in the collective insurance system as part of total household saving.

<sup>17</sup> The definition of the households' disposable incomes thus includes capital income and expenditure. Real assets (primarily property holdings) also affect the income calculations as they provide return in the form of the housing services that the properties provide.

<sup>18</sup> We ignore tax effects here.

**Different measures of indebtedness**

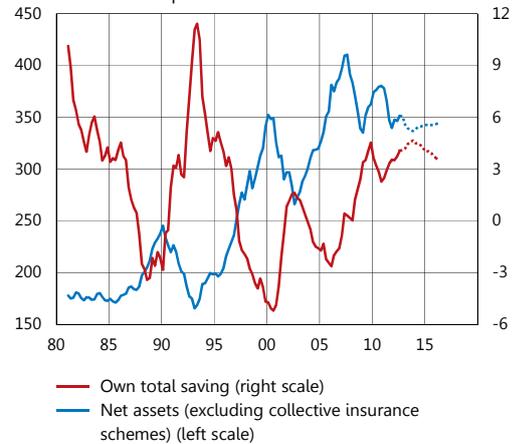
An analysis of the balance sheet is also in many respects an analysis of the indebtedness of the households. However, there is no unequivocal definition of household indebtedness. Three common definitions of indebtedness are shown in Figure A8. The measure of indebtedness in which debts are expressed in relation to assets is usually called the loan-to-value ratio (see the red and yellow lines in Figure A8). A broad measure of indebtedness, which is in the nature of a measure of solvency, is quite simply the balance sheet's liabilities side in relation to the assets side. Another measure that is used is the debt ratio, which relates debts to disposable income (see the blue line in Figure A8). When debts, or the interest that households pay on their debts, increase then the households' disposable incomes decrease at the same time.<sup>19</sup> The debt ratio thus illustrates how large a part of their income the households need to use to be able to service their loans. Different measures of indebtedness may thus develop differently if there are changes in the balance sheet, for example if there is a lasting change in asset prices.

**The link between the balance sheet and the development of the economy**

Household consumption constitutes a direct link between the balance sheet and the rest of the economy. According to a common theory, the households consume a proportion of expected future wealth in each period.<sup>20</sup> This wealth primarily consists of future earned income, but net assets also play a part.

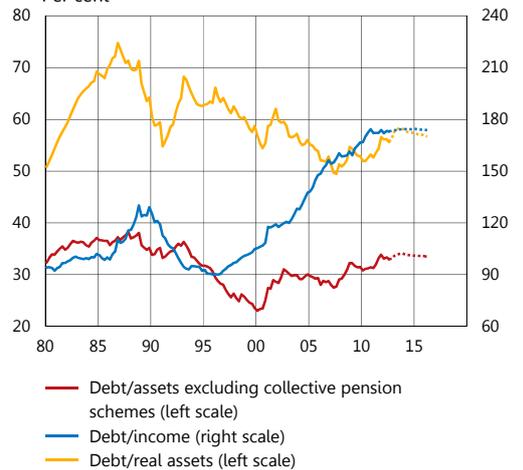
There are many international studies that indicate that the balance sheet, or parts of it, is important to how consumption develops.<sup>21</sup> Studies show that the balance sheet is important to the households' consumption decisions in Sweden too.<sup>22</sup> It has also been pointed out in some studies of the relationship between consumption and the balance sheet that it is above all lasting changes in asset prices that have an impact on consumption. However, most of the variations in asset prices are more temporary in nature and changes in the balance sheet would therefore normally have only a marginal effect on consumption.<sup>23</sup>

**Figure A7. Own savings and net assets (excluding collective insurance schemes)**  
Per cent of disposable income



Sources: Statistics Sweden and the Riksbank

**Figure A8. Three measures of the debt ratio**  
Per cent



Sources: Statistics Sweden and the Riksbank

<sup>19</sup> If debts constitute approximately 170 per cent of income and the nominal rate of interest paid on the debts is 3 per cent, 5.1 per cent of a household's income will be paid in interest expenditure. If for some reason the rate of interest increases to 4 per cent, expenditure will increase to around 6.8 per cent. This shows that with a debt ratio of 170 per cent interest payments increase by 1.7 per cent when the rate of interest increases by one percentage point.

<sup>20</sup> This theory is usually referred to as the "life-cycle hypothesis", see F. Modigliani and R. Brumberg, "Utility Analysis and the Consumption Function: an Interpretation of the Cross-Sectional Data" *Post-Keynesian Economics*, New Brunswick, New Jersey: Rutgers University Press 1954.

<sup>21</sup> See for example M. Palumbo, J. Rudd and K. Whelan "On the Relationships between Real Consumption, Income, and Wealth" *Working Paper*, Board of Governors of the Federal Reserve System, August 2012. Other studies that particularly highlight the role of real wealth in consumption decisions are K. Case, J.M. Quigley and R.J. Shiller "Wealth Effects Revisited: 1975-2012" *NBER Working Paper Series*, No. 18667, January 2013 and M. Iacoviello "Housing Wealth and Consumption", *International Finance Discussion Papers*, Board of Governors of the Federal Reserve System No. 1027, August 2012.

<sup>22</sup> See H. Johansson and P. Kaplan "An Econometric Study of Private Consumption Expenditure in Sweden" *Working Paper No. 70*, National Institute of Economic Research, 1999 or M. Bjellerup "Do the Measures of Consumption Measure Up?" *Essays on Consumption: Aggregation, Asymmetry and Asset Distribution*, No 68, Acta Wexionensia 2005.

<sup>23</sup> See M. Lettau and S.C. Ludvigson "Understanding Trend and Cycle in Asset Values: Reevaluating the Wealth Effect on Consumption" *American Economic Review*, March 2004. See also M. Lettau, S.C. Ludvigson and N. Barczy "A Primer on the Economics and Time Series Econometrics of Wealth Effects: A Comment", *Working Paper*, Federal Reserve Bank of New York, May 2001 for a discussion of the methodological problems that can arise in the empirical work on measuring the balance sheet's effect on consumption.

### What can happen with the balance sheet and consumption if house prices fall? An illustrative calculation

Empirical studies can only show how the average household has reacted on previous occasions when asset prices have changed. However, it is not given that households will always react in the same way and how the households choose to act following a change in the balance sheet may play a decisive role for how great the impact on the real economy will be.

If, for example, there was a lasting fall in house prices of 10 per cent, households may choose to act in different ways. One alternative is of course to do nothing. A fall in house prices would then lead to an increase in the loan-to-value ratio, a fall in net assets and a more or less unchanged debt ratio.

Another alternative would be for the households to strive to restore the original relationship in the balance sheet, for example by selling financial assets and paying off some of the debts. The loan-to-value ratio can then be reduced or, in some cases completely restored, at the same time as the debt ratio falls. The two different ways of reacting may ultimately result in roughly the same reduction in the household's net assets.<sup>24</sup> There are different estimates of how much consumption changes given a change in net assets. A possible estimate is that a 10 per cent fall in house prices could lead to consumption falling by approximately 1 per cent.<sup>25</sup> The effects on consumption could, in other words, be the same in both cases, even if the effects on the balance sheet and different measures of indebtedness were different.

A third alternative is that the households restore the relationships in the balance sheet simply by saving, for example by amortising their debts.<sup>26</sup> In addition to the initial effect of lower net assets on consumption, saving will now also be higher for some time. It is of course difficult to determine by exactly how much, but as an example we can say that if the households wished to return to the loan-to-value ratio that prevailed in 2011, then debts would have to be reduced by approximately SEK 300 billion if house prices fell by 10 per cent.<sup>27</sup> This is a relatively large sum (corresponding to around 17 per cent of disposable income) and consumption would probably therefore have to be lower over a longer period of time for saving to build up net assets. In this example the loan-to-value ratio would be decreased, or in some cases be completely restored, at the same time

<sup>24</sup> This requires of course that there are sufficient financial assets to sell and that the price of these assets has not radically changed. Although the aggregated household balance sheet contains sufficient financial assets for this example, the situation may be different for an individual household.

<sup>25</sup> M. Iacoviello "Housing Wealth and Consumption", *International Finance Discussion Papers*, Board of Governors of the Federal Reserve System No. 1027, August 2012 presents results that indicate that when real assets change by 10 per cent then consumption changes by just over 1 per cent. Results based on Swedish data give a more mixed picture. In "Konsumtion, försiktighetssparande och arbetslöshetsrisker" an article in *Konjunkturläget*, National Institute of Economic Research, June 2012, a link is presented that suggests that a 10 per cent change in net assets leads to a more than 2 per cent. change in consumption. On the other hand, the results in H. Johnsson and P. Kaplan "An Econometric Study of Private Consumption Expenditure in Sweden" *Working Paper* No. 70, National Institute of Economic Research, 1999 indicate that consumption is less sensitive to changes in real assets. The effects in this study are less than 0.5 per cent. The results for Norway in Erlandsen, S. and R. Nymoen, "Consumption and Population Age Structure", *Journal of Population Economics*, 21, 2008 show that the corresponding effect on consumption is between 1.5 to just over 2 per cent.

<sup>26</sup> The higher savings can be used to purchase new assets or to amortise debts. As the example presupposes that assets have fallen in value, it is assumed in the example that the households will amortise their debts.

<sup>27</sup> The debts must be reduced from over SEK 3 000 billion to SEK 2 700 billion.

as the debt ratio would fall, but, as mentioned above, this would probably take place over a longer period of time. The households would thus act in the same way as they did after the crisis of the early 1990s when the debt ratio fell at the same time as saving increased substantially.<sup>28</sup> The decisive factor for the economy is thus whether such an adjustment takes place and, if so, how quickly.

Empirical relationships, in both Sweden and abroad, indicate that a change in the balance sheet does not normally have any dramatically large effects on consumption. However, empirical relationships reflect historically average behaviour and cannot be taken as given in each individual case. International experience indicates that in those countries where a fall in house prices has been preceded by a dramatic build-up of household debt, then the consequences for the real economy have been more costly and more prolonged than a fall in house prices would otherwise have been.<sup>29</sup> However, it is not automatically possible to draw conclusions for Sweden on the basis of experience abroad. The effect of a disruption in asset prices on the household balance sheet and the economy at large is thus ultimately a question of judgement.

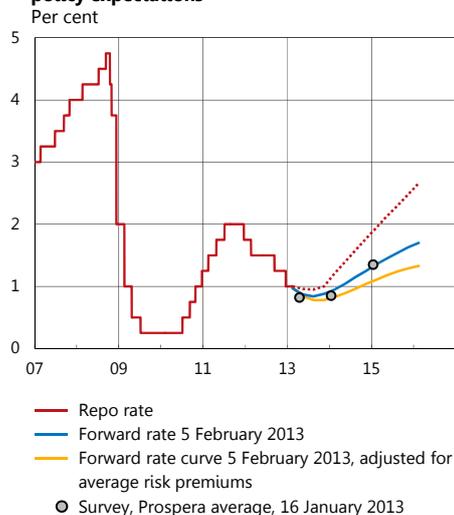
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<sup>28</sup> For a theoretical discussion of how balance-sheet effects can reinforce the effects of shocks to the economy, see M. Iacoviello "House Prices, Borrowing Constraints, and Monetary Policy in the Business Cycle", *American Economic Review*, June 2005.

<sup>29</sup> See the discussion in International Monetary Fund "Dealing with Household Debt" *World Economic Outlook* chapter 3, April 2012.

## Perspectives on monetary policy expectations and forward rates

**Figure A9. The Riksbank's measures of monetary policy expectations**



Note: Survey expectations are from Prospera's survey questions to money market participants on the future repo rate. The forward rate curve is calculated using interest rates on derivative contracts (RIBA futures and Forward Rate Agreements). The adjusted forward-rate curve has been adjusted using a rule of thumb for average risk premiums (the rule of thumb is one basis point multiplied by the horizon stated as the number of months).  
Sources: Reuters EcoWin, TNS SIFO Prospera and the Riksbank

It is difficult to predict the future level of interest rates, and it is more difficult the longer the forecast horizon. What the market participants expect about future monetary policy can be ascertained by conducting surveys or by studying the market pricing of forward rates. Expectations are important as they affect the long-term interest rates that households and companies have to pay. By monitoring the development of monetary policy expectations one can better understand to what extent the repo-rate decisions and communication of the Riksbank affect these rates. However, it is difficult to measure expectations with any great degree of certainty. This article discusses the underlying causes, attempts to quantify the uncertainty and illustrates it with an interval for the monetary policy expectations.

### Monetary policy expectations and their significance

The Executive Board of the Riksbank decides on the level of the repo rate at every monetary policy meeting. This rate then governs the most short-term market rates. Long-term rates, for example government bond rates and borrowing rates for households and firms, are also affected to some extent by the market participants' expectations regarding the future course of monetary policy.<sup>30</sup> The decisions that economic agents make are thus affected by what interest rates are today and what they are expected to be in the period ahead, and it is therefore important for the Riksbank to monitor the development of monetary policy expectations.<sup>31</sup>

### How are monetary policy expectations measured?

Monetary policy expectations are not directly observable but can be measured in two main ways: by conducting surveys or from the market pricing of forward rates.<sup>32</sup> The Riksbank continually monitors expectations using both of these measurement methods (see Figure A9). However, both surveys and forward rates are associated with various problems that may give rise to measurement errors.

In a survey, a sample of different market participants are asked what they expect the repo rate to be in the future. The advantage of survey measurements is that they reflect the monetary policy expectations in a direct way, without additional adjustments. Measurement errors may nevertheless arise as respondents are lacking strong incentives to guarantee that their responses really reflect the true expectations. Another source of measurement error is that the survey's sample of respondents and their responses may not

<sup>30</sup> The so-called expectations hypothesis describes how long-term rates are linked to expectations of the future overnight rate (the most short-term rate). If, for example, repeated investments at the overnight rate are expected to provide a return of 1 per cent over the year ahead, the expectations hypothesis says that the interest rate on a one-year, fixed, risk-free investment will also provide a return of 1 per cent. However, long-term rates are also affected by many factors other than monetary policy.

<sup>31</sup> The role of monetary policy expectations in the monetary policy transmission mechanism is described, for example, by E. Hopkins, J. Lindé and U. Söderström in "The Monetary Policy Transmission Mechanism", *Sveriges Riksbank Economic Review*, 2009:2.

<sup>32</sup> The fact that expectations are not directly observable means that not even after the event are we able to determine whether the different measurements have accurately reflected true expectations.

necessarily be representative of the true overall expectations of the market participants.<sup>33</sup>

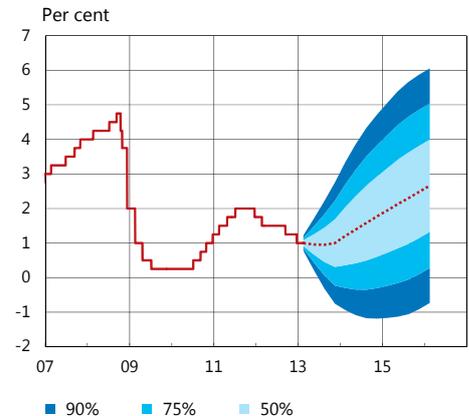
To measure monetary policy expectations using market rates we study forward rates (see Figure A9).<sup>34</sup> According to the so-called expectations hypothesis, forward rates reflect expectations of the future repo rate.<sup>35</sup> Using the pricing of forward rates has several advantages: it is based on the market participants' economic decisions, it should reflect the participants' probability-weighted mean value for what the repo rate is expected to be in the future and the measure can be monitored continuously while the fixed-income markets are open for business.

In practice, however, forward rates do not only contain monetary policy expectations but also risk premiums. These risk premiums can be positive or negative and can vary over time. Risk premiums in forward rates arise, among other things, because investors demand to be compensated for uncertainty about the future development of interest rates, as different interest rates will affect the value of their holdings of debt securities. Factors that affect the balance between the supply of and demand for debt securities can also lead to risk premiums.<sup>36</sup> In order to be able to use forward rates as a measure of expectations of the future repo rate, one therefore need to take account of how the forward rates, especially those that relate to a distant point in time, are affected by uncertainty regarding future rates and the development of risk premiums (see for example Figure A9 for forward rates calculated with and without an adjustment for risk premiums).

### Interest rates are difficult to predict

Predicting what the repo rate will be in two years' time is complicated as it requires forecasting of how the economy will develop in the future, including how monetary policy will react. Forecasts of the repo rate are thus associated with significant uncertainty and the accuracy of the forecasts decreases the longer the forecast horizon. To get an idea of how high the degree of forecast uncertainty is one can calculate the distribution of historical forecasting errors. The Riksbank usually illustrates the forecast uncertainty with probability intervals for some of the most important forecasting variables, including the repo rate (see Figure A10).<sup>37</sup>

**Figure A10. Interval that reflects the uncertainty of the forecasts**



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. Outcome data are daily rates and forecasts are quarterly averages.

Source: The Riksbank

<sup>33</sup> Yet another source of measurement error is the fact that many of the responses in the surveys probably relate to the respondents' expected median or modal value. According to the expectations hypothesis, it is rather the expected value of the future development of the repo rate that is assumed to affect long-term rates. The expected value is defined as the conceivable outcome for the repo rate weighted according to probability. Survey-based measurements may therefore entail a measurement error that can vary over time depending on how much the mode value and the expected value differ at different times.

<sup>34</sup> A forward rate is an interest rate for a future loan. In the case where we want to ascertain monetary policy expectations, it is a question of the interest rate on a short-term loan in the form of an overnight loan that is the interest rate the Riksbank aims to govern by setting the level of the repo rate. Forward rates can be read directly from market prices for forward contracts or be calculated implicitly from so-called spot rates (for example bond yields).

<sup>35</sup> A forward rate for the very shortest maturity (overnight), two years ahead, would thus show what repo rate is expected to prevail in two years' time.

<sup>36</sup> The expression "risk premiums" as used in this article is sometimes referred to as term premiums. For some forward rates there is also a credit-risk premium to compensate for the risk of an investor suffering loan losses. Credit-risk premiums are usually relatively easy to identify and they are small for some types of forward contract (for example RIBA forward contracts).

<sup>37</sup> These intervals are calculated on the basis of the distribution of historical forecasting errors.

The distribution of forecasting errors for monetary policy expectations, calculated using forward rates and survey responses, is relatively large for forecasts one and two years ahead and larger the longer the forecast horizon is (see Table A3).<sup>38</sup> Forecasting accuracy, measured as the root of the average of the squared forecast deviations for two-year forecasts between 2002 and 2012, is similar for the two measures: 2.07 for forward rates and 2.08 for surveys. A higher value reflects lower forecasting accuracy. If the forecasting errors are normally distributed, this means that an interval that covers 90 per cent of the possible outcomes for the repo rate would be just under 7 percentage points wide two years ahead, which is roughly the same size as the Riksbank's uncertainty interval (see Figure A10). This is approximately the same or a somewhat higher level of forecasting accuracy as the corresponding measure for a simple forecast in which the expected future repo rate is the same as the current rate at the time of the forecast. The Riksbank's repo rate forecasts have approximately the same forecasting accuracy as the measures of expectations since 2007, which is when the Riksbank began making forecasts of the repo rate (see Table A3). This is despite the fact that the measures of expectations and the Riksbank's forecasts differ rather significantly from time to time.

### Identifying expectations on from forward rates

As forward rates include risk premiums it is necessary to try to adjust for these premiums in order to identify a fair measure of monetary policy expectations.<sup>39</sup> Risk premiums are normally higher and more variable the longer the horizon the interest rates relate to which, as stated above, is because uncertainty about interest rates is then greater. The need to adjust forward rates for premiums therefore increases as the horizon increases. For forward rates up to approximately one year, risk premiums are probably small for the most part, which means that forward rates should be a relatively accurate measure of monetary policy expectations in the near-term.

Finding a method that can identify the size of risk premiums in forward rates at a certain point in time is difficult and is something that has occupied the minds of academics and practitioners for a long time. There are several different empirical methods that use different approaches to try to divide the observed forward rates into the two unobserved components: expectations of the overnight rate and risk premiums. Some methods can show what risk premiums are on average for various horizons, while other methods aim to show how the risk premium develops over time and what it is today.<sup>40</sup> It is

<sup>38</sup> The results are taken from M. Beechey and P. Österholm, "Policy Interest-Rate Expectations in Sweden: A Forecast Evaluation", *Working Paper* No 127, National Institute of Economic Research, 2012 and M. Beechey and P. Österholm, "Central Bank Forecasts of Policy Interest Rates", *Working Paper* No 128, National Institute of Economic Research, 2013. Forward rates are based on interest-rate derivatives and have been adjusted for term premiums in accordance with a fixed rule of thumb used by the Riksbank. The survey measure uses a question about the repo rate expected in the future that is included in TNS SIFO Prospera's survey.

<sup>39</sup> See M. Piazzesi and E. Swanson, "Futures prices as risk-adjusted forecasts of monetary policy", *Journal of Monetary Economics* 55(4), 2008, or J. Alsterlind and H. Dillén, "Monetary policy expectations and forward premiums", *Sveriges Riksbank Economic Review*, 2005:3, for descriptions of the need to identify risk premiums.

<sup>40</sup> See for example E. Swanson, "What we do and don't know about the term premium", *FRBSF Economic Letter*, 2007.

highly probable that estimating what the risk premium is on average is easier than managing to identify what the risk premium is at each moment.

Different measures of average Swedish forward premiums that the Riksbank has calculated indicate that the average risk premium for a forward rate over a horizon of, for example, two years has been 25-40 basis points in the last ten years.<sup>41</sup> These methods include calculations of the average difference between forward rates and surveys over long periods of time, the average difference between short-term and long-term rates and the results of financial factor models for the government bond yield curve in which the risk premium is not allowed to vary over time.<sup>42</sup>

The methods used to identify how risk premiums vary over time can produce significantly different results at single points in time, which shows how difficult it is to identify risk premiums.<sup>43</sup> Some interesting examples of this come from different versions of 3-factor models for the government bond curve with time-varying risk premiums (see 3-factor models #1 and #2 in Figure A11).<sup>44</sup>

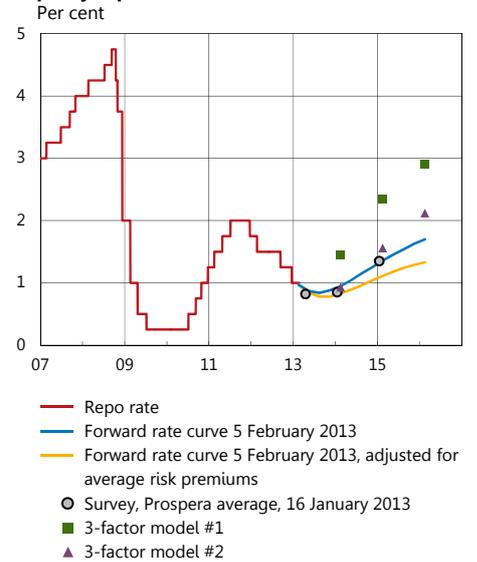
**An illustration of measurement uncertainty about monetary policy expectations**

Measurement uncertainty arises because the available measures of monetary policy expectations are not exact. The expression "measurement uncertainty" refers to uncertainty about what expectations the market participants have regarding the repo rate in the future. This differs from the expression "forecasting uncertainty" which is the uncertainty that exists about monetary policy in the future.

The different methods that the Riksbank has tested to assess measurement errors do not provide any unequivocal and easily-interpreted picture of current monetary policy expectations. If we only used one of these methods, we would risk reaching the wrong conclusions about current monetary policy expectations. However, together the methods can be used to get an idea of the magnitude of measurement uncertainty.

The Riksbank has chosen to quantify measurement uncertainty by calculating the dispersion between different measures of monetary policy expectations over a long period of time as a

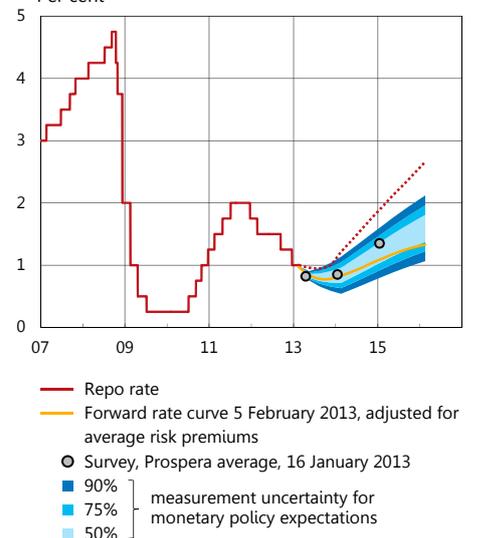
**Figure A11. Alternative measures of monetary policy expectations**



Note. The models are of the same type described in Kim and Wright, 2005, and are estimated on Swedish data for treasury bond yields. The models provide estimates of what risk premiums and expectations of short-term rates are. Model #1 is a model estimated for the period 1998 to 2008. Model #2 is estimated for the period 2000 to 2012 and also uses information from Prospera's survey responses to improve the estimation of risk premiums and expectations.

Sources: Reuters EcoWin, TNS SIFO Prospera and the Riksbank

**Figure A12. Interval that reflects the measurements uncertainty about monetary policy expectations**



Note: The breadth of the interval is calculated on the base of the spread between different measures of monetary policy expectations for the respective horizons, plus an assumption of normal spreads. The interval is centred around the mean value of the Riksbank's ordinary measure of monetary policy expectations (Prospera surveys and forward rates adjusted for risk premiums).

Sources: Reuters EcoWin, TNS SIFO Prospera and the Riksbank

<sup>41</sup> The Riksbank's adjustment of interest-rate derivative based forward rates for risk premiums is usually 24 basis points over a horizon of two years and is based on an estimate of the average risk premium, for example on the results of Alsterlind and Dillén, "Monetary policy expectations and forward premiums", *Sveriges Riksbank Economic Review*, 2005:3. More current calculations of the average risk premium made by the Riksbank also support this adjustment.

<sup>42</sup> A financial factor model for interest rates traces how interest rates with different maturities are priced in relation to each other. By using the historical development for bond yields at different maturities together with a theoretical assumption concerning how the bonds are priced, the model can be used to identify a few common driving factors. On the basis of these factors, the model can generate a measure of the expected development of short-term interest rates (monetary policy expectations) and risk premiums for different maturities. See O. Vasicek, "An equilibrium Characterization of the term structure", *Journal of Financial Economics* 5(2), 1977, and D. Duffie and R. Kan, "A yield-factor model of interest rates", *Mathematical Finance* 6(4), 1996.

<sup>43</sup> See also E. Swanson, "What we do and don't know about the term premium", *FRBSF Economic Letter*, 2007.

<sup>44</sup> The models are based on D. Kim and J. Wright, "An arbitrage-free three-factor term structure model and the recent behavior of long-term yields and distant-horizon forward rates", *Finance and Economics Discussion Series* 2005-33, Board of Governors of the Federal Reserve System (U.S.), but are estimated using Swedish data. The models provide estimates of what risk premiums and expectations of short-term rates are. Model #1 is a model estimated for the period 1998 to 2008. Model #2 is estimated for the period 2000 to 2012 and also uses information from Prospera's survey responses to improve the estimation of risk premiums and expectations.

standard deviation around the average of the various measures. By assuming that the measurement errors are normally distributed one can illustrate measurement uncertainty about monetary policy expectations with an uncertainty interval (see Figure A12).

Some of the measures we have calculated provide less plausible interpretations of current monetary policy expectations. We have therefore chosen to only use an average of the most common measures, surveys and forward rates adjusted by the Riksbank's rule of thumb for average risk premiums, to determine where the mid-point of the interval should be. The calculation of the interval can be developed and improved in the future as the measurement methods are refined.

The interval that represents measurement uncertainty in Figure A12 shows that neither surveys nor forward rates are exact measures of expectations of the future repo rate. However, the true expectations are probably too different from these measures. The current interval shows that monetary policy expectations are lower than the Riksbank's forecast for the repo rate.

**Table A3. Historical forecasting accuracy for measures of monetary policy expectations**  
Root of mean squared forecast deviations (RMSE)

	2002-2012			2007-2012		
	1 quarter	1 year	2 years	1 quarter	1 year	2 years
Survey (Prospera)	0.46	1.24	2.08	0.59**	1.52**	2.63**
Forward rates	0.46*	1.27	2.07	0.44	1.62	2.53
The Riksbank	-	-	-	0.43	1.74	2.60

Note. A higher value reflects lower forecasting accuracy. Forward rates are based on interest-rate derivatives and are adjusted using a fixed adjustment for risk premiums. \* Calculated from the Riksbank's interpolated forward curve based on interest-rate derivatives to get an horizon of exactly one quarter.

\*\* Forecasts in accordance with surveys have not been made at exactly the same time as the Riksbank's forecasts.

Sources: Beechey and Österholm, 2012 and 2013 and the Riksbank

## ■ Appendix

- Tables
- Articles 2010-2012
- Interest rate decisions 2008-2012
- Glossary

## Tables

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

**Table 1. Repo rate forecast**

Per cent, quarterly average values

	Q4 2012	Q1 2013	Q2 2013	Q1 2014	Q1 2015	Q1 2016
Repo rate	1.2	1.0 (1.0)	1.0 (1.0)	1.2 (1.3)	2.0 (2.0)	2.7

Source: The Riksbank

**Table 2. Inflation**

Annual percentage change, annual average

	2011	2012	2013	2014	2015
CPI	3.0	0.9 (0.9)	0.4 (0.3)	2.1 (2.3)	2.6 (2.6)
CPIF	1.4	1.0 (0.9)	1.0 (0.9)	1.8 (2.0)	2.0 (2.0)
CPIF excl. energy	1.0	1.0 (1.0)	1.2 (1.2)	1.8 (1.8)	2.1 (2.1)
HICP	1.4	0.9 (0.9)	1.0 (0.9)	1.9 (2.0)	2.1 (2.1)

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

Sources: Statistics Sweden and the Riksbank

**Table 3. Summary of financial forecasts**

Per cent, unless otherwise stated, annual average

	2011	2012	2013	2014	2015
Repo rate	1.8	1.5 (1.5)	1.0 (1.0)	1.5 (1.5)	2.2 (2.2)
10-year rate	2.7	1.6 (1.6)	2.2 (1.8)	3.1 (2.9)	4.0 (3.8)
Exchange rate, KIX, 18 Nov. 1992 = 100	107.6	106.1 (106.1)	103.0 (103.8)	103.1 (103.4)	103.1 (103.3)
Exchange rate, TCW-index, 18 Nov. 1992 = 100	122.3	120.9 (120.9)	117.4 (118.2)	117.4 (117.5)	117.7 (117.7)
General government net lending*	0.2	-0.5 (-0.3)	-1.1 (-0.9)	-0.4 (-0.3)	0.3 (0.4)

\* Per cent of GDP

Sources: Statistics Sweden and the Riksbank

**Table 4. International conditions**

Annual percentage change, unless otherwise stated

<b>GDP</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Euro area (0.14)	1.5	-0.5 (-0.5)	-0.2 (-0.1)	1.3 (1.6)	1.9 (2.1)
USA (0.19)	1.8	2.2 (2.3)	1.9 (2.3)	3.0 (3.0)	3.4 (3.3)
Japan (0.06)	-0.5	2.1 (1.7)	1.0 (0.6)	1.1 (1.3)	1.0 (1.1)
China (0.15)	9.3	7.8 (7.8)	8.1 (8.2)	8.2 (8.2)	8.2 (8.2)
OECD (0.54)	1.9	1.4 (1.4)	1.4 (1.6)	2.4 (2.5)	2.7 (2.7)
KIX-weighted (0.79)	2.2	1.0 (1.0)	1.4 (1.4)	2.5 (2.6)	3.0 (2.9)
World (1.00)	3.9	3.3 (3.2)	3.5 (3.5)	4.0 (4.0)	4.3 (4.2)

Note. The figures in parentheses in the left column indicate the global purchasing-power adjusted GDP-weights, according to the IMF, 2011.

<b>CPI</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Euro area (HICP)	2.7	2.5 (2.5)	1.7 (1.7)	1.5 (1.5)	1.6 (1.7)
USA	3.2	2.1 (2.1)	1.8 (2.0)	1.8 (1.9)	2.3 (2.2)
Japan	-0.3	0.0 (0.0)	0.2 (-0.3)	1.4 (0.9)	1.5 (0.5)
KIX-weighted	3.2	2.5 (2.6)	2.2 (2.2)	2.2 (2.1)	2.3 (2.2)

	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Policy rates in the rest of the world, KIX-weighted, per cent	0.8	0.4 (0.4)	0.3 (0.3)	0.5 (0.4)	0.7 (0.8)
Crude oil price, USD/barrel Brent	111	112 (112)	111 (107)	104 (102)	99 (98)
Swedish export market	5.4	1.5 (1.4)	2.8 (3.4)	5.9 (6.9)	6.8 (7.9)

Note. The export market aims to measure demand for imports in the countries to which Sweden exports. This is calculated by aggregating the imports of 32 countries and covers around 85 per cent of the Swedish export market. The weights comprise the respective country's share of Swedish export of goods. Policy rates in the rest of the world refer to a KIX and TCW weighted average of USA, the euro area, Norway and the United Kingdom. The National Institute of Economic Research updates the weights for the KIX krona index at the start of every year. The figures in the table are based on new KIX weights that are used for 2013, and on an assumption that the weights will develop according to the trend of the past five years in the coming forecast year.

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

**Table 5. GDP by expenditure**

Annual percentage change, unless otherwise stated

	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Private consumption	2.1	1.4 (1.4)	1.4 (1.5)	2.7 (2.7)	2.7 (2.7)
Public consumption	1.1	0.4 (0.4)	0.9 (0.9)	0.7 (0.7)	1.1 (1.1)
Gross fixed capital formation	6.4	3.2 (3.2)	0.1 (0.3)	4.5 (4.6)	5.8 (5.8)
Inventory investment*	0.5	-0.9 (-0.9)	-0.1 (0.0)	0.2 (0.1)	0.0 (0.0)
Exports	7.1	0.0 (0.2)	1.3 (2.2)	5.4 (5.6)	7.0 (7.7)
Imports	6.3	-1.0 (-0.7)	0.7 (1.9)	5.8 (5.9)	7.1 (7.8)
GDP	3.7	0.9 (0.9)	1.2 (1.2)	2.7 (2.7)	3.1 (3.2)
GDP, calendar-adjusted	3.8	1.2 (1.2)	1.3 (1.3)	2.8 (2.8)	2.9 (2.9)
Final figure for domestic demand*	2.5	1.4 (1.4)	1.0 (1.0)	2.3 (2.3)	2.7 (2.7)
Net exports*	0.8	0.5 (0.4)	0.4 (0.3)	0.2 (0.3)	0.4 (0.5)
Current account (NA), per cent of GDP	7.3	7.3 (7.2)	7.5 (7.3)	7.3 (7.3)	7.3 (7.3)

\*Contribution to GDP growth, percentage points

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

Sources: Statistics Sweden and the Riksbank

**Table 6. Production and employment**

Annual percentage change, unless otherwise stated

	2011	2012	2013	2014	2015
Population, aged 16-64	0.3	0.1 (0.1)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)
Potential hours worked	0.7	0.5 (0.5)	0.4 (0.4)	0.4 (0.4)	0.4 (0.0)
GDP, calendar-adjusted	3.8	1.2 (1.2)	1.3 (1.3)	2.8 (2.8)	2.9 (2.9)
Number of hours worked, calendar-adjusted	2.3	0.4 (0.4)	0.0 (0.0)	0.8 (0.9)	0.9 (0.8)
Employed, aged 15-74	2.1	0.6 (0.5)	0.2 (0.1)	0.6 (0.8)	1.2 (1.2)
Labour force, aged 15-74	1.2	0.8 (0.7)	0.7 (0.6)	0.2 (0.3)	0.2 (0.2)
Unemployment, aged 15-74 *	7.5	7.7 (7.7)	8.1 (8.1)	7.8 (7.6)	6.9 (6.8)

\* 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 unit labour cost for the economy as a whole**

Annual percentage change, calendar-adjusted data unless otherwise stated

	2011	2012	2013	2014	2015
Hourly wage, NMO	2.4	3.1 (3.2)	2.8 (2.8)	3.2 (3.2)	3.6 (3.6)
Hourly wage, NA	3.3	3.3 (3.3)	2.9 (3.0)	3.5 (3.5)	3.8 (3.8)
Employers' contribution*	0.0	-0.2 (-0.1)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Hourly labour cost, NA	3.3	3.0 (3.1)	2.9 (3.0)	3.5 (3.5)	3.8 (3.8)
Productivity	1.5	0.8 (0.8)	1.3 (1.2)	1.9 (1.9)	2.0 (2.1)
Unit labour cost	1.8	2.2 (2.3)	1.6 (1.8)	1.5 (1.5)	1.8 (1.7)

\* 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, collective 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

**Table 8. Alternative scenario: weaker labour market, cyclical**

Annual percentage change, unless otherwise stated, annual average

	2013	2014	2015
Unemployment, aged 15-74*	8.4 (8.1)	8.0 (7.8)	7.0 (6.9)
GDP, calendar-adjusted	0.3 (1.3)	3.2 (2.8)	3.3 (2.9)
CPIF	0.9 (1.0)	1.8 (1.8)	2.0 (2.0)
CPI	-0.2 (0.4)	2.0 (2.1)	2.9 (2.6)
Repo rate, per cent	0.3 (1.0)	0.9 (1.5)	2.0 (2.2)

\* Per cent of the labour force

Note. Main scenario forecast in brackets. CPIF is the CPI with a fixed mortgage rate. Asterisk, note and sources relate to Tables 8-14.

Sources: Statistics Sweden and the Riksbank

**Table 9. Alternative scenario: weaker labour market, structural**

Annual percentage change, unless otherwise stated, annual average

	2013	2014	2015
Unemployment, aged 15-74*	8.4 (8.1)	8.4 (7.8)	7.6 (6.9)
GDP, calendar-adjusted	0.8 (1.3)	2.9 (2.8)	3.0 (2.9)
CPIF	0.9 (1.0)	1.8 (1.8)	2.0 (2.0)
CPI	0.2 (0.4)	2.1 (2.1)	2.7 (2.6)
Repo rate, per cent	0.8 (1.0)	1.3 (1.5)	2.1 (2.2)

**Table 10. Alternative scenario: weaker labour market, structural and more expansionary monetary policy**

Annual percentage change, unless otherwise stated, annual average

	2013	2014	2015
Unemployment, 15-74* years	8.3 (8.1)	7.9 (7.8)	7.1 (6.9)
GDP, calendar-adjusted	1.1 (1.3)	3.3 (2.8)	3.0 (2.9)
CPIF	1.1 (1.0)	2.2 (1.8)	2.2 (2.0)
Hours gap, per cent	-1.2 (-0.9)	-0.3 (-0.5)	0.2 (0.0)
Repo rate, per cent	0.3 (1.0)	1.0 (1.5)	2.2 (2.2)

**Table 11. Alternative scenario: weaker international economic activity**

Annual percentage change, unless otherwise stated, annual average

	2013	2014	2015
GDP abroad	0.8 (1.4)	1.6 (2.5)	2.6 (3.0)
Policy rate abroad, per cent	0.3 (0.3)	0.4 (0.5)	0.5 (0.7)
Inflation abroad	2.2 (2.2)	2.0 (2.2)	2.1 (2.3)
CPIF	0.9 (1.0)	1.6 (1.8)	1.9 (2.0)
CPI	0.1 (0.4)	1.5 (2.1)	2.4 (2.6)
Hours gap, per cent	-1.5 (-0.9)	-1.9 (-0.5)	-1.2 (0.0)
Repo rate, per cent	0.7 (1.0)	0.7 (1.5)	1.4 (2.2)

**Table 12. Alternative scenario: stronger international economic activity**

Annual percentage change, unless otherwise stated, annual average

	2013	2014	2015
GDP abroad	1.6 (1.4)	3.2 (2.5)	3.2 (3.0)
Policy rate abroad, per cent	0.3 (0.3)	0.5 (0.5)	0.8 (0.7)
Inflation abroad	2.2 (2.2)	2.2 (2.2)	2.3 (2.3)
CPIF	1.0 (1.0)	2.0 (1.8)	2.1 (2.0)
CPI	0.6 (0.4)	2.5 (2.1)	2.8 (2.6)
Hours gap, per cent	-0.5 (-0.9)	0.3 (-0.5)	0.5 (0.0)
Repo rate, per cent	1.1 (1.0)	1.9 (1.5)	2.7 (2.2)

**Table 13. Alternative scenario: lower repo rate**

Annual percentage change, unless otherwise stated, annual average

	2013	2014	2015
Repo rate, per cent	0.8 (1.0)	1.4 (1.5)	2.2 (2.2)
Hours gap, per cent	-0.8 (-0.9)	-0.3 (-0.5)	0.1 (0.0)
Unemployment, 15-74* years	8.1 (8.1)	7.7 (7.8)	6.8 (6.9)
CPI	0.3 (0.4)	2.3 (2.1)	2.8 (2.6)
CPIF	1.0 (1.0)	2.0 (1.8)	2.1 (2.0)

**Table 14. Alternative scenario: higher repo rate**

Annual percentage change, unless otherwise stated, annual average

	2013	2014	2015
Repo rate, per cent	1.2 (1.0)	1.6 (1.5)	2.2 (2.2)
Hours gap, per cent	-0.9 (-0.9)	-0.6 (-0.5)	-0.2 (0.0)
Unemployment, 15-74* years	8.1 (8.1)	7.9 (7.8)	7.0 (6.9)
CPI	0.5 (0.4)	2.0 (2.1)	2.5 (2.6)
CPIF	0.9 (1.0)	1.7 (1.8)	2.0 (2.0)

## Articles 2010-2012<sup>45</sup>

### 2010

- 2010 February** What is a normal level for the repo rate?
- 2010 February** This year's wage bargaining is expected to result in low wage rises
- 2010 July** Great need to strengthen public finances
- 2010 July** Effects of a fall in housing prices
- 2010 July** What form does the recovery of productivity usually take?
- 2010 July** The CPI and measures of underlying inflation
- 2010 October** Why higher growth in Sweden than in the eurozone and the United States?
- 2010 October** Basel III – tougher rules for banks
- 2010 October** The repo rate path and monetary policy expectations according to implied forward rates
- 2010 October** The driving forces behind trends in the economy can be analysed using a production function

### 2011

- 2011 February** The effects of the financial crisis on the labour market – a comparison of Sweden, the euro area and the United States
- 2011 February** Lower policy rates in Sweden and abroad
- 2011 February** How does the Riksbank make forecasts for long-term market rates?
- 2011 February** The effects of Basel III on macroeconomic development
- 2011 July** The sustainable development of public debt?
- 2011 July** Low unemployment – a challenge
- 2011 July** Recent developments in inflation expectations
- 2011 October** Similarities and differences between the current situation and 2008-2009
- 2011 October** The debt crisis in Europe
- 2011 October** New round of collective bargaining in an uncertain economic climate

### 2012

- 2012 February** The EMU and the debt crisis
- 2012 February** The emerging economies and Sweden's exports
- 2012 February** The relationship between the repo rate and interest rates for households and companies
- 2012 July** The debt crisis in Europe – developments during the spring
- 2012 July** Long-run developments in the Swedish labour market
- 2012 July** Why has inflation been lower in Sweden than in the euro area?
- 2012 October** KIX index better reflects Sweden's international dependence
- 2012 October** New measures to manage the crisis in the euro area
- 2012 October** The economic situation remains uncertain ahead of collective bargaining in 2013
- 2012 October** Has the functioning of the labour market changed?

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<sup>45</sup> A list of the articles published since 1993 can be found on the Riksbank's website [www.riksbank.se](http://www.riksbank.se).

Interest rate decisions 2008-2012<sup>46</sup>

<b>Date of meeting</b>	<b>Decision (percentage points)</b>	<b>Repo rate (per cent)</b>	<b>Monetary Policy Report</b>
<b>2008</b>			
12 February	+0.25	4.25	2008:1
22 April	0	4.25	Monetary Policy Update
2 July	+0.25	4.50	2008:2
3 September	+0.25	4.75	Monetary Policy Update
8 October	-0.50	4.25	Extra meeting, no report
22 October	-0.50	3.75	2008:3
3 December	-1.75	2.00	Monetary Policy Update
<b>2009</b>			
10 February	-1.00	1.00	February 2009
20 April	-0.50	0.50	Monetary Policy Update
1 July	-0.25	0.25	July 2009
2 September	0	0.25	Monetary Policy Update
21 October	0	0.25	October 2009
15 December	0	0.25	Monetary Policy Update
<b>2010</b>			
10 February	0	0.25	February 2010
19 April	0	0.25	Monetary Policy Update
30 June	+0.25	0.50	July 2010
1 September	+0.25	0.75	Monetary Policy Update
25 October	+0.25	1.00	October 2010
14 December	+0.25	1.25	Monetary Policy Update
<b>2011</b>			
14 February	+0.25	1.50	February 2011
19 April	+0.25	1.75	Monetary Policy Update
4 July	+0.25	2.00	July 2011
6 September	0	2.00	Monetary Policy Update
26 October	0	2.00	October 2011
19 December	-0.25	1.75	Monetary Policy Update
<b>2012</b>			
15 February	-0.25	1.50	February 2012
17 April	0	1.50	Monetary Policy Update
3 July	0	1.50	July 2012
5 September	-0.25	1.25	Monetary Policy Update
24 October	0	1.25	October 2012
17 December	-0.25	1.00	Monetary Policy Update

<sup>46</sup> A list of the historical interest rate decisions with effect from 1999 onwards can be found on the Riksbank's website [www.riksbank.se](http://www.riksbank.se).

## Glossary

**Annual rate:** The annual rate means that the change between two periods following on from one another is converted into the same unit, the corresponding annual change. Recalculation to annual rate makes it easier to compare changes with different frequencies. Assume, for example, that GDP increases by 0.5 per cent between the first and second quarters, when calculated as an annual rate this is around 2 per cent and provides an indication of what the quarterly change may entail in terms of a full year change.

**Asset prices:** Refers mainly to prices of shares and properties.

**Basis spread:** Shows the difference between the interbank rate and the expected policy rate with the same maturity.

**Bond market:** See Fixed-income market.

**Business tendency survey:** A survey in which firms respond to questions about their sales, output, hiring plans, etc.

**Calendar adjustment:** Adjustment for variations in the number of working days from one year to the next. Calendar adjustment is usually used to compare developments in production, turnover and employment (number of hours worked) between quarters or months.

**Capacity utilisation:** The degree to which production capacity is utilised, i.e. the maximum output that can be achieved with the existing workforce, machinery and premises.

**Confidence indicators:** Total measure of the situation within a sector or among households. Confidence indicators are based on an average of the responses to several different questions in a survey.

**CPI:** The consumer price index is a measure of the price level and is calculated on a monthly basis by Statistics Sweden. The Riksbank's inflation target is expressed in the annual percentage change of the CPI.

**CPIF:** The CPI with a fixed mortgage interest rate. The CPIF is not directly affected by a change in mortgage interest rates. The entire change in the sub-index for interest expenditure comes from the change in the value of the housing stock.

**Credit spread:** Refers to the difference between a security with credit risk and a risk-free security with the same maturity.

**Current prices:** The current price expresses the nominal value and is not adjusted for changes in value caused by inflation. See also Fixed prices.

**ECB:** The European Central Bank.

**EFSF:** European Financial Stability Facility. A rescue fund set up to safeguard financial stability in Europe by offering financial support to euro-area countries.

**ESM:** European Stability Mechanism. A permanent international financial institution founded by the euro-area countries to safeguard stability in the euro area. The ESM replaces the former financing mechanism, such as EFSF.

**Econometric estimates:** Usually a statistical calculation made on the basis of historical data.

**Executive Board of the Riksbank:** The Executive Board governs the Riksbank and takes decisions concerning areas such as monetary policy.

**Export market:** Intended as a measure of the demand for imports in the countries to which Sweden exports. This is calculated by weighing together imports in 32 countries and covers approximately 85% of Swedish export market. The weights are determined by the respective country's share of Swedish exports of goods.

**Federal Reserve:** The central bank of the United States.

**Federal funds rate:** The US Federal Reserve's policy rate.

**Financial markets:** A generic term for the markets in which financial instruments are traded. The four main financial markets are the foreign exchange market, the fixed-income or bond market, the share or equity market and the derivatives market.

**Fixed-income market:** The fixed income market is used for trading instruments that yields a specific predetermined return, an interest rate. The fixed income market is often divided into a bond market and a money market. The bond market comprises trade in securities – bonds – generally with maturities of one year and longer. Trading in the money market comprises treasury bills and certificates, usually with maturities of up to one year.

**Fixed prices:** Valuation at fixed prices means that the flows and stocks during an accounting period are valued at prices from an earlier period. The purpose of valuation at fixed prices is to break down changes in value into both changes in price and changes in volume.

**Forward prices:** The price for buying or selling an asset for future delivery.

**Forward rate:** A forward rate agreement entails a liability for the contracting parties to complete the purchase or sale of an interest rate asset at a predetermined rate, the forward rate, and at a predetermined point in time. The forward rate in a contract reflects the market participants' expected interest rates during the time until the contract matures.

**FRA:** A Forward Rate Agreement, where two parties agree to borrow and lend money respectively within the scope of a three-month interbank loan with effect from a particular date in the future at an interest rate agreed by the parties now. The market rates for these FRAs thus give an indication of market participants' expectations of future interest rates. See also the explanations of Forward rate and Interbank rate.

**HICP:** Harmonised index for consumer prices developed as a comparable measure of inflation within the EU. The HICP differs from the CPI both with regard to the measure of calculation and what it covers, for instance mortgage rates are not included in HICP.

**Hodrick-Prescott filter (HP filter):** A statistical method for breaking down the movements of a variable into trend and cyclical components. The method can be described as a weighted double-sided moving average where greater weight is placed on observations close at hand and gradually decreasing weight on observations further ahead.

**Implied forward rates:** For instance, the rate on two bonds with different maturities can be used to calculate future rates, that is, implied forward rates, during the time to maturity of the bonds. This method is used when there are no market-listed forward rates. See also Forward rate.

**Interbank rate:** The interest rate that applies when banks and large financial institutions borrow from one another on the interbank market for terms of up to one year.

**Inflation:** General price rises that cause a reduction in the value of money. The opposite is known as deflation.

**KIX:** Krona Index: An index for the Swedish krona exchange rate.

**KIX-weighted:** An aggregate of, for instance, GDP, CPI or the exchange rate in the euro area and 20 countries that are important to Sweden's international transactions. The KIX weights are updated regularly.

**Labour costs:** The total cost of labour according to the National Accounts, that is, the sum of wages, including for instance bonuses, employers' contributions, agreed collective charges and payroll-based taxes on output.

**Listed mortgage rates:** The rates that are published by Nordea, SBAB, Swedbank Hypotek and Stadshypotek, for example in the daily press.

**LFS:** Labour Force Surveys. Monthly surveys conducted by Statistics Sweden to measure the size of the labour force, employment and unemployment.

**Monetary base:** Defined in Sweden as banknotes and coins in circulation, monetary policy counterparties' deposits in the Riksbank and claims on the Riksbank as a result of Riksbank Certificates that have been issued.

**Monetary policy:** The measures taken by the Riksbank in order to maintain the value of money.

**Money market:** See Fixed-income market.

**Money supply:** The general public's holdings of banknotes, coins and their demand deposit. There are different measures of the money supply which include different definitions of the demand deposit.

**Money market instruments:** See Fixed-income market.

**MPR:** Monetary Policy Report.

**MPU:** Monetary Policy Update.

**Net figures:** The percentage of companies or households in a survey that state a positive development minus the percentage stating a negative development.

**Net lending (general government):** General government income minus expenditure.

**Overnight rate:** The interest rate for interbank loans overnight.

**Policy rates:** The interest rates set by central banks for conducting monetary policy. In Sweden these are the repo rate and the deposit and lending rates.

**Productivity:** The amount of goods and services produced in relation to the resources utilised in the form of labour and capital. The most common measure is labour productivity, which measures the output per hours worked.

**Purchase price coefficient:** The purchase price of a property divided by its rateable value.

**Real interest rate:** In reality the risk free real (that is, expressed in purchasing power units) return on a real bond. As liquid real bonds are often not available for relevant maturities, the real interest rate is in practice usually calculated according to the Fisher equation as the nominal interest rate minus expected inflation.

**Refi rate:** The European Central Bank's policy rate.

**Repo rate:** The Riksbank's most important policy rate. The Executive Board of the Riksbank decides on the repo rate as the level that the Riksbank wants to steer the overnight rate towards.

**Resource utilisation:** The utilisation of the production resources labour and capital.

**Risk premium:** An extra return that an investor requires as a compensation for the risk.

**RU indicator:** A summarising measure of resource utilisation from survey data and labour market data. The indicator information is weighed together into an index with the aid of principal component analysis. The index, which is the actual RU indicator, can be regarded as a weighted average of the variables included.

**Seasonal adjustment:** Adjustment of data to even out regularly occurring variations over the year.

**Spot price:** The price of a commodity for its immediate delivery.

**Statistics Sweden:** The Swedish office of national statistics. The central government authority for official statistics.

**STIBOR:** Stockholm Interbank Offered rate. STIBOR is a reference rate used in many loan contracts.

**STINA:** Stockholm Tomorrow/next Interbank Average is an interest rate derivative contract where two parties exchange a fixed interest rate flow and a variable interest rate flow respectively with one another. The interest-rate flows are based on the STIBOR rate for the term tomorrow-to-next which is closely-related to the Riksbank's repo rate. The market-listed fixed interest rate in the STINA contracts reflects the average expected overnight rate during the term of the contract.

**Sveriges Riksbank Act:** The Act stipulating the tasks of the Riksbank.

**TCW index:** Total competitiveness weighted. An index for the Swedish krona's exchange rate.

**TED spread:** Originally the treasury/euro-dollar spread. Shows the difference between the interbank rate and the rate on a treasury bill with the same maturity.

**Underlying inflation:** Measures of inflation that in different ways exclude or attribute a different weighting to the prices of those goods and services included in the CPI. Underlying inflation can be calculated by excluding changes in the prices of certain goods and services for which the price tends to fluctuate sharply. Underlying inflation can also be calculated with the aid of econometric methods.

**Yield curve:** The yield curve shows the relationship between yield and maturity dates.



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