



Monetary Policy Report

July 2011

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.¹ 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 4 July 2011. The Report is available on the Riksbank's website, 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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Further information on the Riksbank can be found at: www.riksbank.se

¹ 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 STRATEGY²

- 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.

² 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.

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■ Monetary policy considerations

– a summary

■ Repo rate raised 0.25 percentage points to 2.0 per cent

The Swedish economy is growing at a good rate, although international developments are marked by uncertainty. CPI inflation is high at present as a result of rising mortgage rates. At the same time, underlying inflationary pressures remain low, but are expected to increase as economic activity strengthens. The Executive Board of the Riksbank has decided to raise the repo rate by 0.25 percentage points to 2.0 per cent to stabilise inflation around the target of 2 per cent and resource utilisation around a normal level. The forecast for the repo rate is held unchanged.

■ Swedish economy stable despite increased uncertainty globally

Although the Swedish economy is entering a calmer phase, the economy is continuing to grow at a good pace. Both domestic demand and exports are contributing to this development. The labour market situation is also continuing to develop positively, which means that the rate of wage increase is rising.

The recovery is also continuing in the world as a whole. Several countries in Asia and Latin America are still expected to grow rapidly, even if the growth rate slows down. But the international outlook is also marked by uncertainty. The US economy has developed unexpectedly weakly and the euro area continues to be weighed down by fiscal problems.

■ Higher repo rate helps keep inflation in line with the target

CPI inflation is high at present as a result of rising mortgage rates. At the same time, different measures of underlying inflation are lower, as the krona has appreciated over the past year and domestic cost pressures are low. However, inflationary pressures are expected to increase during the forecast period as spare capacity in the economy decreases and the rate of wage increase accelerates. In periods with large interest rate adjustments, the CPIF provides a better picture of inflationary pressures.

There is a need to gradually increase the repo rate to stabilise inflation around the target of 2 per cent and resource utilisation around a normal level. The Executive Board has therefore decided to raise the repo rate by 0.25 percentage points to 2.0 per cent.

■ Continuing good growth, but considerable risks

The overall picture of economic prospects remains largely the same as in April. The forecast for the repo rate is therefore unchanged in relation to the Monetary Policy Update. But, as always, the forecasts for the economy and monetary policy are based on the information currently available and new information further ahead may lead to changes in these forecasts.

If the currently high CPI inflation rate has a more tangible effect on various agents' long-term inflation expectations and wage formation, monetary policy may need to be tightened more than in the main scenario of the Monetary Policy Report. If, on the other hand, the international economic situation becomes weaker as a result, for example, of the fiscal problems in the euro area worsening, the repo rate may need to be raised at a slower pace in the period ahead.

CHAPTER 1 – The economic outlook and inflation prospects

The recovery of the world economy is continuing, but the picture is fragmented. The emerging economies of Asia and elsewhere are growing rapidly, which is a contributing reason for the increase of inflation internationally. In contrast, the strength of the recovery in the United States and the euro area remains uncertain. The euro area is being weighed down by fiscal problems at the same time as inflation is high. All in all, despite the risks, the recovery of the world economy is expected to continue over the coming years.

Sweden's economy is entering a phase of more normal growth rates. As regards inflation, there is currently a wide difference between various measures. CPI inflation will be above target during the entire forecast period, due to rising mortgage rates. In contrast, CPIF inflation is just below 2 per cent. When the rising energy prices are excluded, inflation is low. As resource utilisation rises, wages are expected to increase more rapidly and CPIF

inflation is expected to gradually rise to around 2 per cent in 2013. During periods with large interest rate adjustments, CPIF inflation provides a better picture of inflationary pressures. In the longer term, the two measures will meet at 2 per cent.

The repo rate is now being raised to 2 per cent. To stabilise inflation around the target of 2 per cent and resource utilisation around a normal level, there is a need to continue to raise the repo rate. Compared to the Monetary Policy Update in April, the repo-rate path remains unchanged. Should the currently high rate of CPI inflation make a more significant impression on various agents' long-term inflation expectations and on wage formation, the repo rate may need to be raised above the interest-rate path in the main scenario. However, there are also factors that may lead to a downwards revision of the repo rate path in future, for example if the fiscal situation in certain European countries should deteriorate.

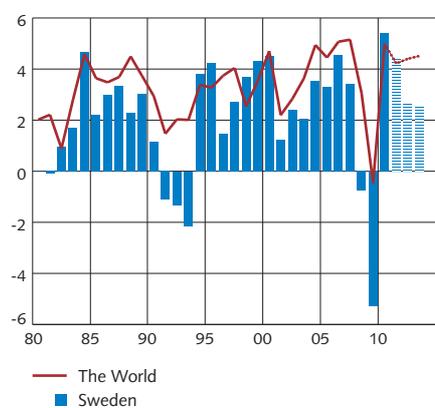
Continuing good growth but considerable risks

Continued strong growth in Sweden

After last year's very strong growth in both Sweden and the world economy, development is now slowing down (see Figure 1:1). The Swedish economy is still growing at a fast pace, but, during the year, growth is expected to slow down to more normal levels. During 2012 and 2013, Sweden's GDP is expected to rise by about 2.5 per cent per year.

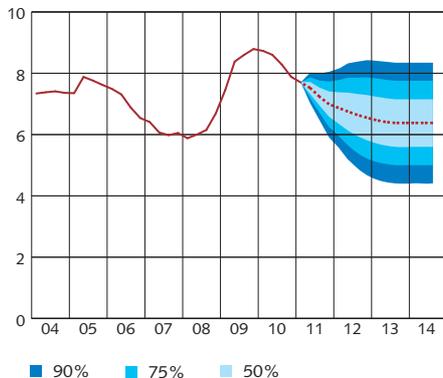
Employment in Sweden has also increased rapidly since the autumn of 2009, having now more than recovered from the downturn that took place during the crisis. At the same time, the supply of labour has developed strongly, which has slowed down the fall in unemployment. Despite this, unemployment is expected to continue to fall, and to amount to just less than 6.5 per cent by the end of the forecast period (see Figure 1:2).

Figure 1:1. GDP-growth in the world and in Sweden
Annual percentage change, seasonally adjusted data



Sources: IMF, Statistics Sweden and the Riksbank

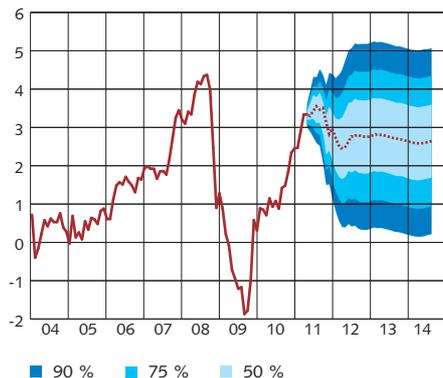
Figure 1.2. Unemployment with uncertainty bands
Per cent of the labour force



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

Sources: Statistics Sweden and the Riksbank

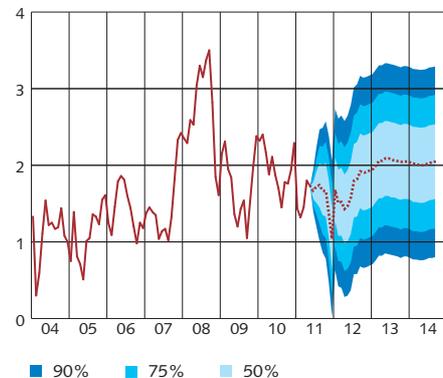
Figure 1.3. CPI with uncertainty bands
Annual percentage change



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

Sources: Statistics Sweden and the Riksbank

Figure 1.4. 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

The Riksbank's overall assessment of resource utilisation in the Swedish economy is that it is currently somewhat lower than normal. During the forecast period, resource utilisation will increase to a normal or slightly above normal level. Resource utilisation is expected to affect the coming wage bargaining rounds, which are expected to result in wage increases for 2012 and 2013 in line with the historical average.

The krona's exchange rate has appreciated since the start of 2009. Even if the short-term value of the krona may vary as a result of turbulence on the financial markets, overall the krona is expected to continue to strengthen somewhat during the forecast period.

CPI inflation in Sweden is presently high and will continue to rise in the months ahead (see Figure 1:3). Following this, it will decrease gradually, but it is expected to remain above target at the end of the forecast period. Among other factors, the high level of CPI inflation is due to rising mortgage rates, which, in turn, are primarily due to the Riksbank raising the repo rate as economic activity improves. In addition, the difference between the short-term mortgage rates paid by households and the repo rate has increased.

CPIF inflation, which is to say inflation measured as the CPI with a fixed mortgage rate, is presently somewhat lower than 2 per cent. When the high energy prices are excluded, inflation is low. During the forecast period, CPIF inflation will gradually increase to around 2 per cent in 2013 (see Figure 1:4). During periods with large interest rate adjustments, measures of inflation that are not directly impacted by changed mortgage rates, such as CPIF inflation, provide a better picture of underlying inflationary pressures. In the longer run, when the repo rate has returned to more normal levels, the two measures of inflation will coincide.

To stabilise inflation at a level close to the inflation target of 2 per cent and resource utilisation around a normal level in the period ahead, the repo rate needs to be raised gradually (see Figure 1:5). The repo rate is now being increased to 2.0 per cent. The forecast for the repo rate path is unchanged in relation to the Monetary Policy Update in April. Should the currently high rate of CPI inflation make a more significant impression on various agents' long-term inflation expectations and on wage formation, the repo rate may need to be raised above the interest-rate path in the main scenario. However, there are also factors that may lead to a downwards revision of the repo rate in future. If, for example, the fiscal situation in certain European countries should deteriorate, the effects via the financial markets and aggregate demand may have negative consequences on production abroad and in Sweden. In such a situation, it may be necessary to set the repo rate at a lower level than is assumed in the main scenario.

■ ■ Global growth is levelling off

The recovery in the world as a whole will continue during the forecast period (see Figure 1:1). World growth is expected to be just over 4 per cent a year over the next few years, which is above the historical average. However, there are significant differences between different regions and

countries, at the same time as there are great risks. This is underlined by the fact that certain indicators suggest that international economic activity may slacken significantly (see Figure 1:6).

Resource utilisation in the emerging economies is starting to become increasingly strained in many areas. Developments in Asia and Latin America continue to be strong, but growth is now dampening towards more normal levels. At the same time, the US economy is experiencing unexpected difficulty in picking up, and growth – particularly this year – is now deemed to be lower than the Riksbank estimated in the Monetary Policy Update in April. Even if GDP growth in the euro area has been higher than expected so far this year, future development is still being restrained by necessary fiscal policy tightening. The economic situation in the euro area is also being affected by the weak levels of growth in the United States and the slower development in Asia.

The earthquake in Japan has impacted the Japanese economy more severely than expected, which has also affected other countries' production through shortages of Japanese-manufactured input goods and components. Nevertheless, the Riksbank's assessment is that growth in the country may increase relatively rapidly as rebuilding gets underway. The contagion effects for the world economy are thus assumed to be limited.

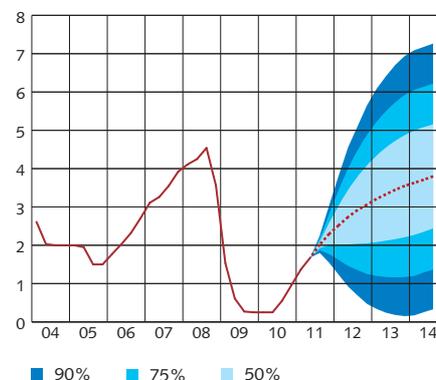
Political turmoil in North Africa and the Middle East has led to uncertainty regarding the oil supply, which has contributed to higher oil prices during the spring (see Figure 1:7). The high oil prices are deemed to be restraining both production and consumption, as energy commodities are difficult to replace, at least over the short term.

All in all, this year and next year, TCW-weighted growth abroad is expected to be marginally lower than was assessed in the Monetary Policy Update in April (see Table 4).

■ ■ High global inflation will gradually fall

The strong economic development in parts of the world has led to rising prices for food, energy and other commodities, even if this development has stabilised somewhat in recent months (see Figure 3:29). These price increases have had an unexpectedly large impact on inflation in several countries, including the United States, and the euro area (see Figure 3:9). International inflation this year and in early 2012 is thus deemed to be higher than the Riksbank calculated in April. Later, as the effects on inflation from increased food, energy and commodity prices slacken off, international inflation is expected to retreat (see Figure 1:8 and Table 4). The underlying inflationary pressures in the euro area and the United States are expected to be low as resource utilisation in these areas is lower than normal. As resource utilisation increases, underlying inflation will also rise in these countries.

Figure 1:5. Repo rate with uncertainty bands
Per cent, quarterly averages



Note. The uncertainty bands are based on risk-adjusted market rates' forecasting errors for the period from 1999 until the Riksbank began publishing forecasts for the repo rate in 2007. The uncertainty bands do not take into account the fact that there may be a lower bound for the repo rate.

Source: The Riksbank

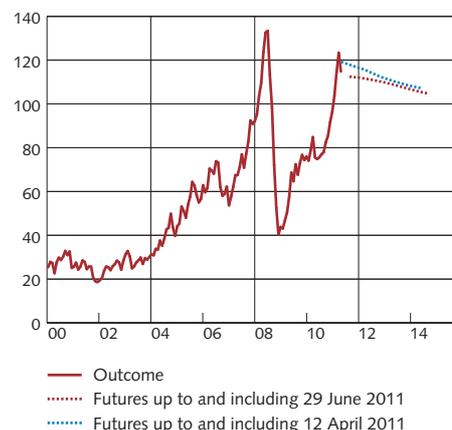
Figure 1:6. Purchasing managers' index
Index, seasonally-adjusted data



Note. TCW refers to a weighting of Sweden's most important trading partners.

Source: Markit Economics

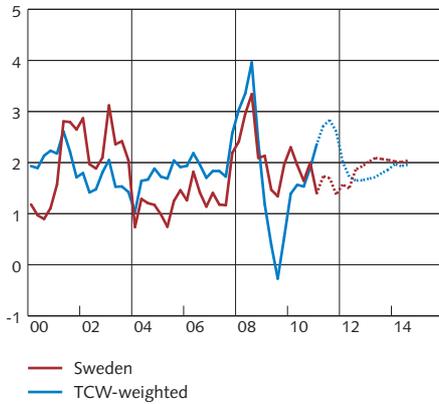
Figure 1:7. Oil price, Brent crude
USD per barrel



Note. Futures are calculated as a 15-day average. Outcomes represent monthly averages of spot prices.

Sources: Intercontinental Exchange and the Riksbank

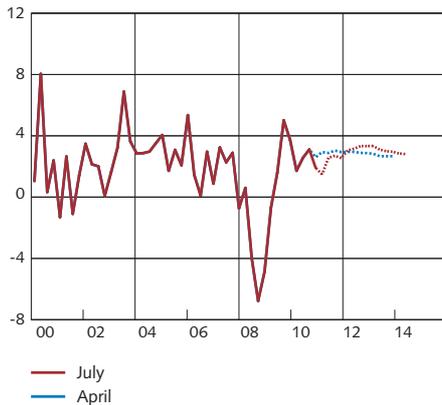
Figure 1:8. Consumer prices
Annual percentage change



Note. Swedish data refers to CPIIF inflation. TCW-weighted international data refers to CPI or HICP. TCW refers to a weighting of Sweden's most important trading partners.

Sources: National sources and the Riksbank

Figure 1:9. GDP in the USA
Quarterly changes in per cent, annual rate, seasonally-adjusted data



Sources: Bureau of Economic Analysis and the Riksbank

■ ■ Difficult monetary policy considerations in many countries

One precondition for this assessment of international inflation is that the central banks of the emerging economies can successfully dampen inflation with monetary policy tightening. In the developed economies, a fragile recovery is being balanced against commodity price-driven inflation which, it is feared, will increase inflation expectations. The ECB raised its policy rate in April in view of the increased inflationary pressures. The ECB is also expected to continue gradually raising the interest rate in the period ahead. In contrast, the US central bank has left its policy rate unchanged in view of the very low level of resource utilisation. The recovery of the US labour market is now expected to proceed more slowly and resource utilisation to be lower than the Riksbank calculated in April. In turn, this has led to the expectation that the US central bank will hold its policy rate unchanged over the next year. US monetary policy is thereby expected to be somewhat more expansionary than stated in the Monetary Policy Update in April. All in all, TCW-weighted foreign policy rates have been revised slightly downwards during the forecast period (see Table 4).

International recovery out of step

■ ■ A weak housing market and high energy prices are dampening growth in the United States

The recovery of the US economy is proceeding slowly. This is in line with the experience of many countries that have been through financial crises.³ Households are increasing their savings and trying to restore their wealth, which decreased substantially when house prices collapsed. So far, the recovery is primarily resting on the consumption of durable goods and investments in software and equipment. Normally, the construction of housing and commercial properties contributes to the recovery, but, so far, this has not been the case this time.

Fiscal policy is assumed to be tight in 2012 and 2013. The need for budget consolidation is significant, as the budget deficit is large and public debt is rising rapidly. One important precondition for a self-sustaining recovery to take place is that the labour market improves more rapidly than it has done so far. Firms are reporting high profits and, if firms' uncertainty concerning future demand decreases, there is reason to believe that employment may develop faster than it has so far.

As the US economy has developed weakly so far this year and there has been no recovery in the housing market, the forecast for GDP growth has been revised downwards for the current year and marginally so for the following year (see Figure 1:9). However, when housing investment starts to increase again in 2012, it is assumed that these figures will increase rapidly. This will have positive effects on growth in the second half of 2012 and in 2013. A slightly higher growth rate at the end of the forecast period is possible, as resource utilisation is starting from a low level.

³ See Carmen M. Reinhart and Kenneth S. Rogoff, "This time is different: eight centuries of financial folly", Princeton University Press, 2009.

The impact of high energy prices has been greater than expected and the inflation forecast has thus been revised upwards for the present year. Underlying inflation is also rising, albeit from a significantly lower level. Productivity growth has dampened and unit labour costs are increasing. However, as the spare capacity in the economy is expected to be great in the years ahead, inflation is forecast to fall as the effects of the increased energy prices decline. The inflation forecast for 2013 has thus been revised slightly downwards (see Table 4).

■ ■ Recovery despite fiscal policy tightening in the euro area

GDP in the euro area is slowly approaching its pre-crisis levels (see Figure 1:10). The recovery has widened, and consumption and investments have successively made greater contributions to growth. However, during 2011, the development of consumption will be held back, partly by higher inflation and partly by higher taxation in certain countries. This is expected to contribute to a slower recovery than historical correlations may have suggested. The weak growth in the United States and the slower development of the emerging economies are also affecting the prospects for the euro area in the present year (see Figure 1:11).

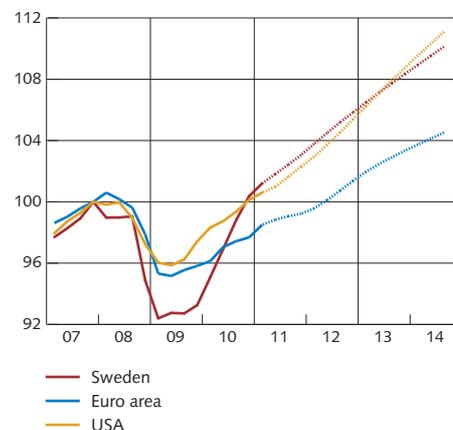
Within the euro area, there are significant differences between different countries. Germany is growing at a brisk pace, partly due to increased exports as world trade increases. In southern Europe in particular, development is instead being held back by the need for fiscal policy tightening. This is reflected by high interest rates on central government debt in these countries, among other consequences. The need for a tighter fiscal policy in several euro area countries and unease over the long-term debt-servicing ability of certain countries is continuing to characterise the forecast and create major risks, as illustrated by the article "The sustainable development of public debt?" in this report. Uncertainty over the fiscal situation in certain countries is expected to remain as it takes time to consolidate public finances. An alternative scenario in Chapter 2 illustrates the consequences of an aggravated fiscal crisis. All in all, the forecast entails a relatively moderate growth rate given the amount of unutilised resources in the economy (see Table 4).

Inflation in the euro area is deemed to be temporarily high due to rising commodity prices, but also due to higher indirect taxes in certain countries. Food prices are also increasing. The forecast for 2011 is that inflation, on average, will exceed the ECB's target (see Figure 1:12). However, inflation is expected to lie slightly below 2 per cent in 2012 and 2013.

■ ■ Weak pound supporting moderate growth in the United Kingdom

Growth in the United Kingdom is also expected to be moderate over the coming years. A tight fiscal policy, a weak housing market and households' continued need to improve their balance sheets are expected to restrict growth in the period ahead. The main growth impulses during the forecast period are expected to come from exports and investments.

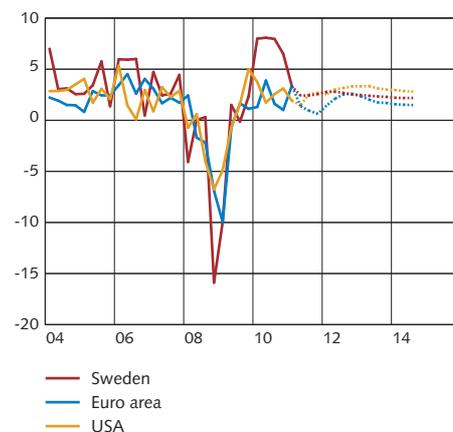
Figure 1:10. Comparison of recovery in Sweden, the euro area and USA
GDP level, index 2007 quarter 4 = 100



Note. The quarter prior to the recession breaking out in the USA = 100.

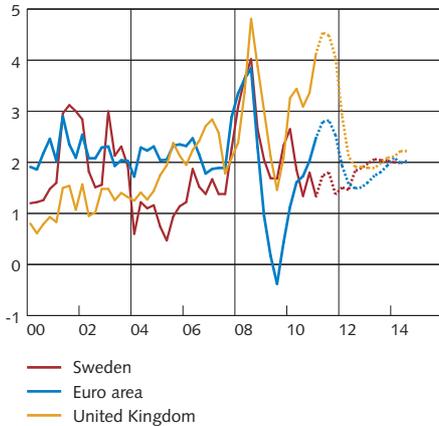
Sources: Bureau of Economic Analysis, Eurostat, Statistic Sweden and the Riksbank

Figure 1:11. GDP in different regions and countries
Quarterly changes in per cent, annual rate, seasonally-adjusted data



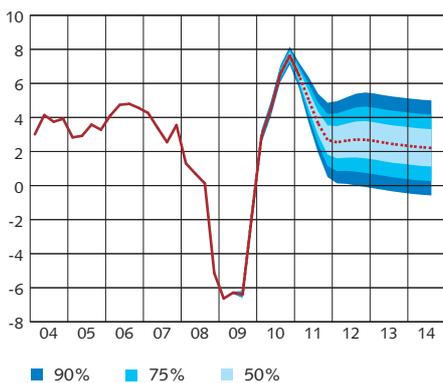
Sources: Bureau of Economic Analysis, Eurostat, Statistics Sweden and the Riksbank

Figure 1:12. HICP
Annual percentage change



Sources: National sources and the Riksbank

Figure 1:13. 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

The weak pound and continued relatively strong international growth are expected to lead to increased exports, at the same time as imports are being restrained by weak domestic demand. Investments are expected to increase at a faster pace in the period ahead, due to continued low interest rates, strong corporate profits and other factors.

Inflation is expected to exceed 4 per cent in 2011 (see Figure 1:12). The weakening of the pound, rapidly increasing commodity prices and increased VAT have contributed to the high rate of inflation. However, these factors are expected to have a temporary effect on inflation and, when the effects subside, inflation is expected to fall. There are expected to be plenty of unutilised resources in the years ahead, which will contribute towards inflation retreating to close to the inflation target in 2012.

■ ■ Unchanged prospects for Norway but slowdown in Denmark

The recovery is continuing in Norway, where growth is strong. Growth is being driven by increased investments, while consumption has weakened slightly due to the high energy prices. In Denmark, the recovery has stalled and, according to preliminary statistics, GDP fell surprisingly during the first quarter of the year. Among other reasons, the weak development is due to a fiscal policy consolidation package leading to falling public consumption and increased taxes. Together with high energy prices, this is dampening consumption. Over a longer perspective, growth is being restrained by the weak development of productivity, among other factors. Compared to the assessment in the Monetary Policy Update in April, growth prospects are largely unchanged in Norway, but have been adjusted downwards over the short term in Denmark.

Good growth in Sweden

■ ■ More normal growth rate in the Swedish economy

Growth in the Swedish economy has been very strong and the economy is continuing to grow at a faster rate than in many other countries (see Figure 1:11). The strong development so far means that GDP has now passed the pre-crisis level (see Figure 1:10). The conditions are good for continued strong growth in the years ahead.

One reason for the expected relatively high growth of the Swedish economy is the strong public finances, which mean that Sweden, unlike many other countries, will not need to implement any fiscal policy tightening. On the contrary, supply-stimulating tax reductions are expected to be implemented in the coming years. In addition, households have accumulated relatively large savings, forming the conditions for increased consumption. Neither has Sweden been impacted by a declining housing market with subsequent structural problems. All in all, this suggests that the Swedish economy will grow more strongly than many economies in the euro area.

In comparison to the very rapid increase of GDP in 2010, growth in Sweden will shift downwards to more normal levels during the forecast period (see Figure 1:13).

■ ■ Household consumption is growing at a strong pace

The decrease of consumption during the crisis was significantly smaller than that of exports and investments. One reason for this is that, despite everything, households' disposable incomes increased during the crisis. The decrease of consumption regardless was due to the increase of household saving. In turn, this was because unemployment was increasing, making the future development of household income more uncertain. The development of household wealth is also significant to their prioritisation of consumption and saving. When wealth decreases, households usually increase their saving, which was what happened during the crisis.

Last year, households reduced saving at a comparatively fast rate (see Figure 1:14). In the period ahead, households are not expected to reduce their saving to the same extent, partly due to the more dampened development of the housing market, which means that household wealth is expected to increase more slowly during the forecast period. This may restrain consumption somewhat.

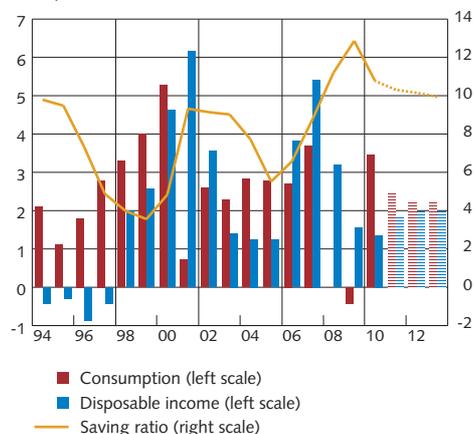
Nevertheless, consumption is expected to increase at a strong pace in the years ahead, as incomes are increasing at a faster rate, which is connected with the improvement of labour market conditions. Higher interest expenditure will certainly have a counteracting effect, but optimism is strong among households and consumer confidence has been at a high level since the beginning of 2010. All in all, this provides the conditions for increased consumption.

■ ■ Exports will grow at the same rate as the export market

Similarly to international trade, Swedish exports have continued to grow markedly since the crisis (see Figure 1:15). There are large differences in economic activity in different countries. Many countries in Asia, for example, are experiencing rapid growth, while the euro area as a whole is experiencing moderate growth. However, there are large differences within the euro area. Several of the countries that are presently experiencing relatively strong growth, such as Germany, the Netherlands and France, are also important for Swedish exports. This is having a positive effect on the Swedish export market (see Figure 1:15).

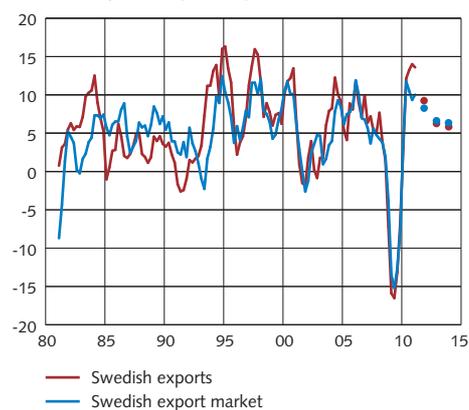
The composition of Swedish exports is also currently favourable, as international demand for investment goods is strong. The emerging economies are currently seeing strong investment activity, but investments in the euro area and United States now also seem to be increasing, albeit from low levels (see Figure 1:16). During the forecast period, the growth of exports is expected to gradually level off and return to historically more normal levels. Imports are expected to increase slightly faster than exports, meaning that the contribution from net exports to GDP growth will be lower in the period ahead.

Figure 1:14. Households' disposable incomes, consumption and saving ratio
Annual percentage change and percentage of disposable income



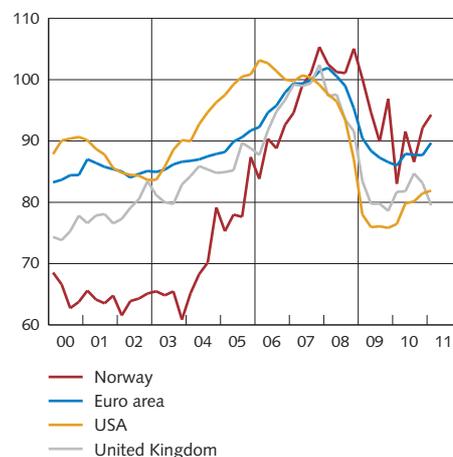
Sources: Statistics Sweden and the Riksbank

Figure 1:15. Swedish exports and the world market for Swedish exports
Annual percentage change



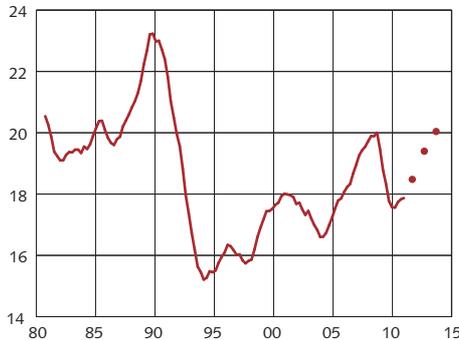
Sources: Statistics Sweden and the Riksbank

Figure 1:16. Investments abroad
Index, 2007 = 100



Sources: National sources

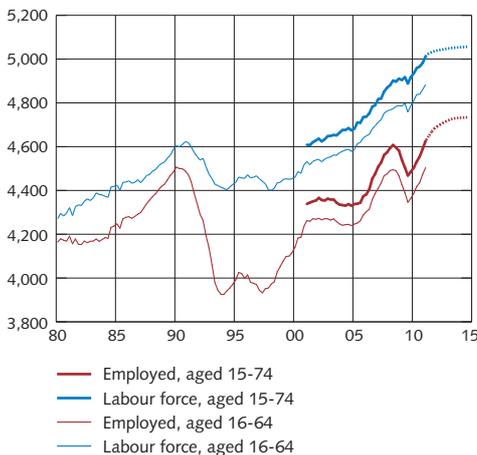
Figure 1:17. Investment ratio
Per cent of GDP, current prices



Note. Four-quarter moving average.

Sources: Statistics Sweden and the Riksbank

Figure 1:18. Labour force and number of employed
Thousands, seasonally-adjusted data



Note. Pre-1987 data have been spliced by the Riksbank.

Sources: Statistics Sweden and the Riksbank

■ ■ Good conditions for a broad increase of investment

Investment has now picked up, as it has internationally, and is expected to continue to increase rapidly. Growing demand on both domestic and export markets means that conditions are good for a broad rise in investments.

Capacity utilisation in manufacturing has risen rapidly and it is now in line with the historical average. At the same time, production is expected to continue to increase. This will increase the need for capacity-enhancing investments in the business sector, as the investment level is currently low. There are also many indications of a continued rise in housing investments: the high demand for housing in relation to supply, the possibility of obtaining tax deductions in connection with renovation, and the improved prospects on the labour market. Public investments, which grew strongly in 2008 and 2009, will continue to increase in the period ahead, albeit at a somewhat slower pace. Although the upswing in investment is broad and rapid, the increase in total investment is from a low level. It will thus take until the end of the forecast period until investment as a percentage of GDP returns to levels corresponding to those prevailing before the crisis (see Figure 1:17).

■ ■ Public sector finances show a surplus

The Riksbank's fiscal policy forecasts are based on what can be regarded as a normal historical development in fiscal policy in relation to the economic cycle. General government net lending showed a slight deficit in 2010. However, net lending for the first quarter of this year was positive and the surplus is expected to be about 0.9 per cent of GDP this year. Compared with most other OECD countries, Sweden's public finances are very strong.

As the economic situation improves and tax income rises, net lending will strengthen further. The government is therefore expected to propose changes in expenditure and income totalling almost SEK 50 billion for the years 2012 and 2013. This assessment remains unchanged from the Monetary Policy Update in April. The main part of these changes is expected to take the form of reduced taxes for households and firms.

■ ■ Unemployment is falling, but the large supply of labour is slowing this reduction down

The development of the Swedish labour market has been strong since the autumn of 2009. The number of jobs lost in the crisis has now been more than recovered. In the first quarter of 2011, the number of employed was more than it was before Sweden was impacted by the international financial crisis (see Figure 1:18). Despite the strong development of the number of employed, the employment rate is still lower than prior to the crisis, which is due to the increasing population. The number of employed people in the age group 16–64 is now one percentage point lower when compared with the start of 2008 (see Figure 1:19). However, demand for labour continues to be strong and the number of employed and the

number of hours worked in the economy are expected to continue to rise in the years ahead.

The supply of labour has also grown strongly in recent years. This is partly a result of earlier reforms to areas such as the pension system, unemployment benefits, sickness benefits and the income tax system, aimed at stimulating supply. Participation in the labour force for the age group 16–64 years declined only slightly in 2009 and is now at a higher level than in autumn 2007 (see Figure 1:19). The strong development of the supply of labour during the recovery has slowed down the decrease of unemployment. Considering the historical connection between the development of GDP and unemployment, unemployment should have fallen more rapidly than it has (see Figure 1:20).

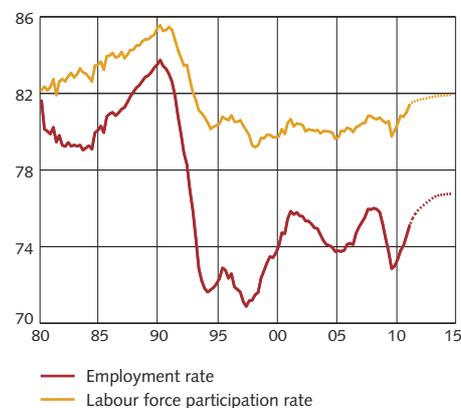
As the Riksbank deems that employment can also be expected to continue to grow more quickly than the number of persons in the labour force, unemployment will continue to fall and reach just below 6.5 per cent at the end of the forecast period. Many of the unemployed belong to groups that the Swedish Public Employment Service has identified as being vulnerable and as facing difficulty in quickly finding work. These groups include people born abroad, young people with gaps in their education, people who no longer qualify for benefit from the health insurance scheme and people who have completed only the secondary level of education. Many of these unemployed people have also been out of work for a longer period. This may make the matching process more difficult in the years ahead. Since the crisis of the 1990s, unemployment has never been below just under 6 per cent (see Figure A8). This is despite periods of very strong growth and high levels of activity in the Swedish economy. The Riksbank's assessment is that achieving an unemployment rate of less than 6 per cent within the next four years will be a challenge placing high demands on the education, training and competence of the unemployed, on matching in the labour market, and on wage formation (see the article "Low unemployment – a challenge" in this report).

■■ Resource utilisation close to normal

Resource utilisation is of significance to monetary policy. Even so, there is no clear-cut method for measuring resource utilisation. The Riksbank therefore uses a number of different indicators and statistical methods to assess how it will develop over the next few years. However, as resource utilisation is not directly measurable, assessments are uncertain, irrespective of whether they relate to the current situation or to the situation further ahead.

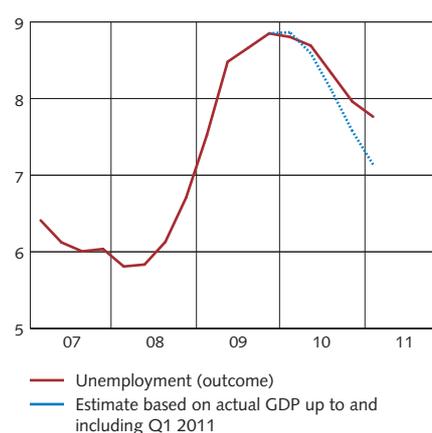
According to some indicators, resource utilisation has increased rapidly and is now close to a normal level. This mainly applies to indicators based on surveys. According to the National Institute of Economic Research's Economic Tendency Survey, in several sectors, labour shortages have continued to rise from the low levels experienced in the crisis (see

Figure 1:19. Employment and labour force participation rates
Employment and labour force as a percentage of the population, aged 16-64, seasonally-adjusted data



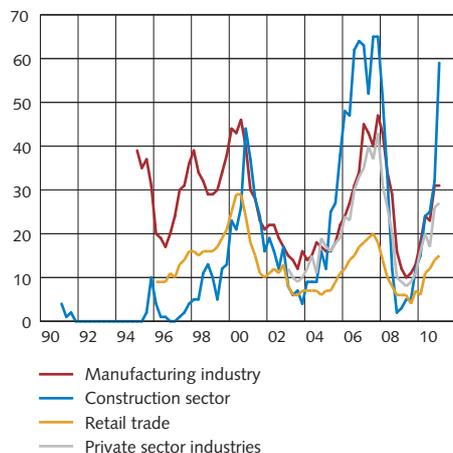
Note. Pre-1987 data has been spliced by the Riksbank.
Sources: Statistics Sweden and the Riksbank

Figure 1:20. Unemployment
Per cent of the labour force



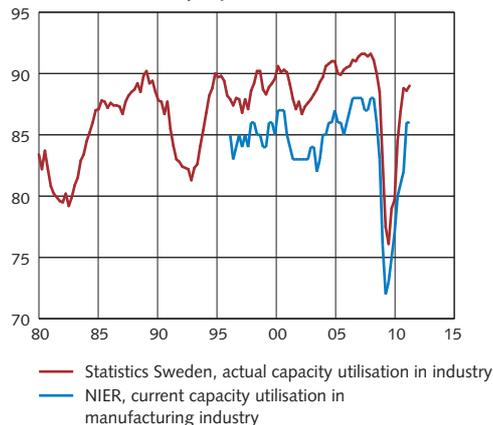
Note. Estimate based on historical correlation of unemployment and GDP (Okun's law).
Sources: Statistics Sweden and the Riksbank

Figure 1:21 Proportion of companies reporting a shortage of labour
Per cent, seasonally adjusted data



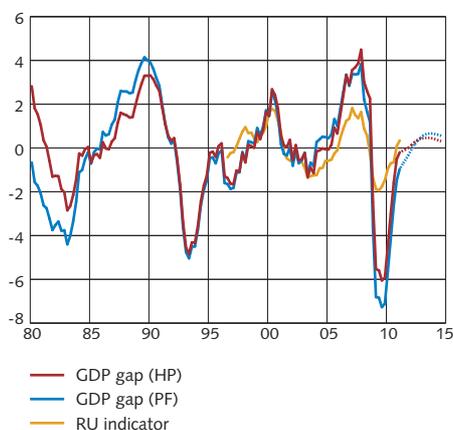
Source: National Institute of Economic Research

Figure 1:22 Capacity utilisation in industry
Per cent, seasonally adjusted data



Sources: National Institute of Economic Research and Statistics Sweden

Figure 1:23. GDP-gap and RU-indicator
Per cent and standard deviation



Note. GDP gap (HP) refers to the deviation from trend in GDP calculated with a Hodrick-Prescott filter. GDP gap (PF) refers to the deviation from trend in GDP calculated with a production function. The RU indicator is normalised so that the mean value is 0 and the standard deviation is 1.

Sources: Statistics Sweden and the Riksbank

Figure 1:21). Above all, the shortage of labour has increased within the construction industry. Capacity utilisation within the manufacturing industry is now close to a historically average level (see Figure 1:22). The Riksbank's indicator for resource utilisation, which uses a statistical method to summarise information from surveys and labour market data, indicates that resource utilisation for the first quarter was slightly above normal (see Figure 1:23).

On the other hand, other indicators, such as the level of unemployment, indicate that resource utilisation is still relatively low. The overall assessment of resource utilisation at present is that it is somewhat lower than normal.

During the forecast period, GDP and the number of hours worked will increase above sustainable long-term levels. Resource utilisation will thus increase. Most of the gaps that show the difference between actual and sustainable long-term levels are closing and becoming marginally positive (see Figures 1:23 and 1:24). The overall assessment is that resource utilisation will be normal or slightly higher than normal during the forecast period. This assessment is in line with the assessment made in the April Monetary Policy Update.

■ ■ The wage bargaining rounds will be important for inflation in the years ahead

Wage increases in the Swedish economy during the forecast period are expected to rise apace with the improvement of the labour market situation. The wage agreements to be renegotiated in the autumn of 2011 and in 2012 are expected to reach a slightly higher level than previously. Wage drift, which is to say wage increases over and above the centrally-agreed levels, is also expected to be higher than the approximately 0.7 per cent that formed the average in 2009 and 2010. All in all, wages in the whole economy are assessed as increasing by around 3.5 per cent in 2012 and 2013. The Riksbank's company interviews from May of this year indicate that an increased proportion of firms believe that wage drift in the firm will be higher in 12 months' time, compared with responses given to the survey in January. This picture is reinforced by the fact that Prospera's survey from June indicates continued rising wage expectations one and two years ahead among employee and employer organisations. However, expectations are lower than the Riksbank's forecast for wage increases over the coming years (see Figure 1:25).⁴

The Riksbank's assessment is that future wage bargaining rounds will result in wage increases that are compatible with the inflation target. In the debate, demands for compensation have certainly been expressed by employees arguing that wages were held back during the crisis. But the profit share of the business sector is still slightly below the historical average (see Figure 1:26). This suggests that wage increases in recent years have been slightly more generous than productivity growth would justify.

If wage increases exceed those specified in the main scenario, the

⁴ Historically, wage expectations have underestimated actual outcomes.

monetary policy consequences will largely depend on the factors driving these higher wages. If wages increase more rapidly than growth in productivity allows, this will lead to rising unemployment and increasing inflationary pressures. In this case, the repo rate may need to be raised at a faster rate than is currently assumed. However, if wages increase in line with productivity growth, monetary policy may be largely the same as in the main scenario. These scenarios are described in more detail in Chapter 2 of this report.

A faster rate of wage increases and more normal productivity growth during the forecast period will entail higher cost pressures in the Swedish economy (see Figure 1:27). These assessments mean that unit labour costs are rising at a somewhat higher rate than the historical average. Compared with the forecast in April, cost pressures are now expected to reach a slightly higher level during the forecast period, which is connected with the slightly higher labour costs per hour in 2011.

■■ Slightly stronger krona can be expected

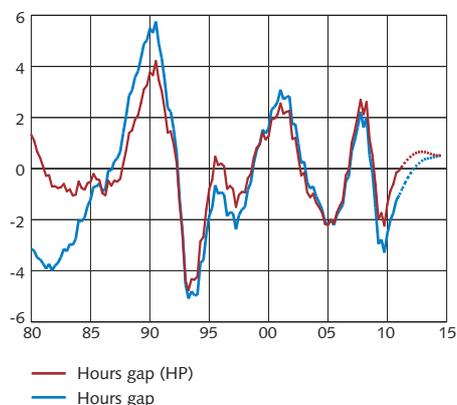
The Swedish krona has appreciated markedly over the last two years, even if the recent unease on the financial markets has led to a slight weakening (see Figure 1:28). This strengthening has taken place in tandem with the strong development of Sweden's economy in relation to the country's main competitors. In terms of the trade-weighted TCW index, the krona now lies at about the same level as it did before the financial crisis. The krona is expected to appreciate somewhat further during the forecast period. This is because GDP growth and the policy rate are expected to be higher in Sweden than in our most important competitors. The exchange rate is thereby also expected to be somewhat stronger than forecast in the Monetary Policy Update from April, particularly during the later part of the forecast period (see Figure 1:28).

■■ High CPI inflation in the years ahead

Over the coming months, CPI inflation will rise to a peak of 3.5 per cent and then gradually fall during the forecast period to just over 2.5 per cent by the start of 2014 (see Figure 1:29). The high level of CPI inflation can be explained by the rapid increase of interest expenditure (see Figure 1:30). In turn, this is primarily due to the Riksbank's repo rate increases, but the rise in interest rates has also been affected by the increasing difference between the repo rate and the short-term interest rates paid by households. Household expenditure on mortgage loans with short fixed periods (about 3 months) presently forms about half of total interest expenditure, which is a slightly higher proportion than is historically normal. The significance of short-term interest rates for CPI inflation has thus increased.

Inflation expectations have risen recently but are anchored around the inflation target in the longer term. The rise in inflation expectations one and two years ahead is probably connected with the increase of CPI inflation. For further discussion of inflation expectations, see the article "Recent developments in inflation expectations" in this report.

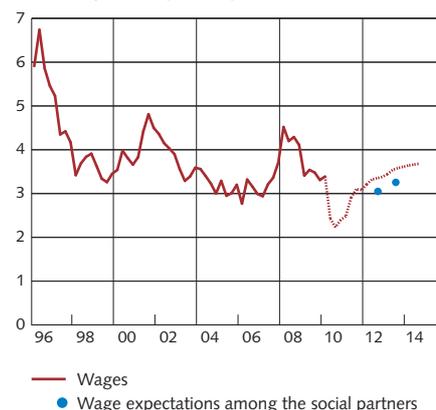
Figure 1:24. Hours gap
Per cent



Note. The hours gap (HP) refers to the deviation from trend in the number of hours worked calculated with a Hodrick-Prescott filter. The hours gap refers to the deviation in the number of hours worked from the Riksbank's assumed trend for the numbers of hours worked.

Sources: Statistics Sweden and the Riksbank

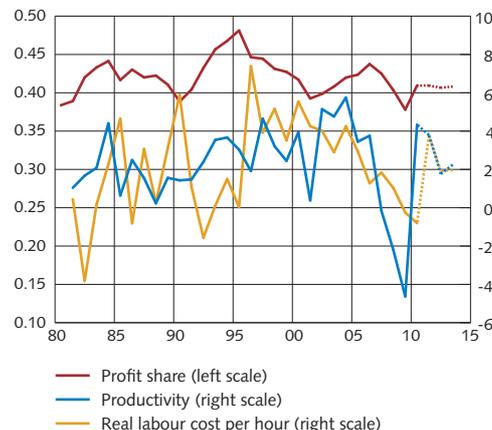
Figure 1:25. Wages and wage expectations
Annual percentage change



Note. Refers to wages according to short-term salaries statistics.

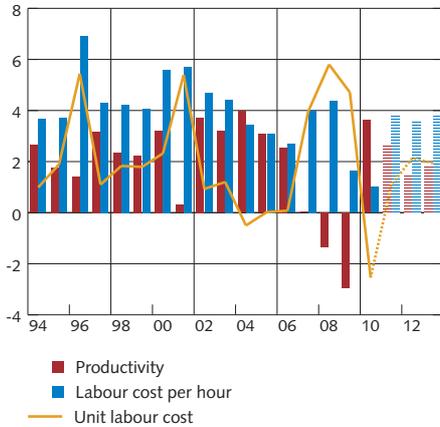
Sources: National Mediation Office, TNS SIFO Prospera and the Riksbank

Figure 1:26. Profit share in the business sector
Gross surplus as share of value added in the business sector and annual percentage change



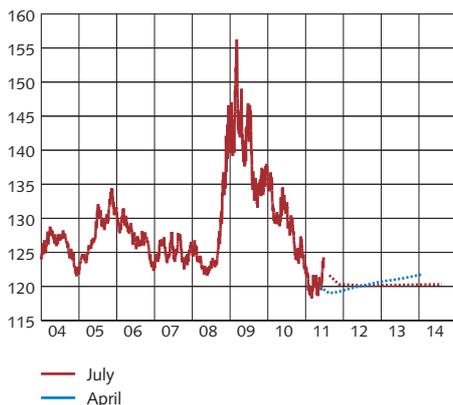
Sources: Statistics Sweden and the Riksbank

Figure 1:27. Cost pressures in the economy as a whole
Annual percentage change



Sources: Statistics Sweden and the Riksbank

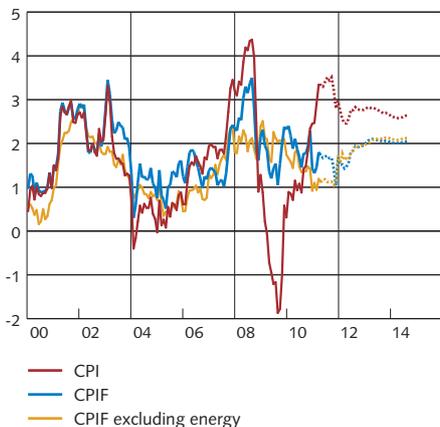
Figure 1:28. TCW-weighted exchange rate
Index, 18 November 1992 = 100



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

Source: The Riksbank

Figure 1:29. CPI, CPIF and CPIF excluding energy
Annual percentage change



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

Sources: Statistics Sweden and the Riksbank

■ ■ Comparatively low underlying inflation

Underlying inflation, unlike CPI inflation, is low. Adjusted for energy prices, the annual rate of increase of the CPIF (the CPI with a fixed mortgage rate) amounted to 1.1 per cent in May (see Figure 1:29). This is in line with the forecast in the most recent Monetary Policy Update. One contributing reason for the low inflation is the appreciation of the krona, which has meant that the prices of food and other goods have increased slowly, despite rising prices on the world market. The low rate of increase in unit labour costs has also contributed towards keeping inflation down in 2011.

CPIF inflation was 1.7 per cent in May. As resource utilisation is rising and wages are increasing at a faster rate, inflationary pressures in the economy are rising. CPIF inflation is therefore expected to rise gradually over the coming years to around 2 per cent in 2013 (see Figure 1:29). All in all, the forecast for CPIF inflation is largely unchanged compared with the assessment presented in the Monetary Policy Update in April.

■ ■ CPIF inflation is currently providing a better view of inflationary pressures

The fact that CPI inflation is higher than CPIF inflation, due to rising mortgage rates, is a transitory effect. During the financial crisis, the situation was the opposite, as the Riksbank's repo-rate cuts led to CPI inflation being much lower than CPIF inflation. During periods with large interest rate adjustments, measures of inflation that are not directly impacted by changed mortgage rates, such as CPIF inflation, provide a better picture of inflationary pressures. In the longer run, when the repo rate has returned to more normal levels, the two measure of inflation will coincide.⁵

Like the CPIF, the internationally comparable inflation measure HICP is not directly affected by changes in interest expenditure either. According to this measure, inflation is lower in Sweden than in the euro area and the United Kingdom (see Figure 1:12). Increased taxes have contributed to the higher inflation of the United Kingdom and the euro area. The weakening of the pound has also been an important factor for the United Kingdom.

⁵ For more detailed information on the relationship between the CPI and the CPIF, see J. Johansson, S. Palmqvist and C. Selander (2011) "The CPI will increase more rapidly than the CPIF over the next few years" *Economic Commentaries*, no. 5, 2011, Sveriges Riksbank.

Monetary policy considerations

■ ■ The repo rate will be increased gradually

The repo rate will now be raised to 2.0 per cent and the Riksbank's assessment is that continued increases will be needed in the period ahead to stabilise inflation around the inflation target of 2 per cent and to stabilise resource utilisation around a normal level. (See Figure 1:31).

The recovery of the world economy is continuing and growth is expected to be over 4 per cent, even if the strength of the upturn continues to be uncertain for the United States and the euro area. Sweden's economy is entering a phase of more normal growth, and the positive development of the labour market is continuing. The overall picture of resource utilisation is that it remains slightly lower than normal, but will rise to a normal (or slightly higher than normal) level over the coming years.

At present there is an unusually large difference between the different measures of inflation. CPI inflation is high due to rising mortgage rates, and is expected to remain above the inflation target of 2 per cent in 2011. However, in periods with large interest rate adjustments the CPIF provides a better picture of inflationary pressures. CPIF inflation is currently slightly below 2 per cent and, adjusted for rising energy prices, just over 1 per cent. As resource utilisation increases, CPIF inflation is expected to increase gradually over the coming years to around 2 per cent towards the end of the forecast period. In the longer run, inflation will amount to 2 per cent, both in terms of the CPI and the CPIF.

Household lending has entered a calmer phase, but debts are still increasing faster than incomes. A gradually rising repo rate may further dampen this rate. The risk of imbalances developing in the Swedish economy will then decrease.

The prospects for the economy and inflation in Sweden are roughly the same as in the forecasts presented in April. The repo rate path thus remains unchanged.

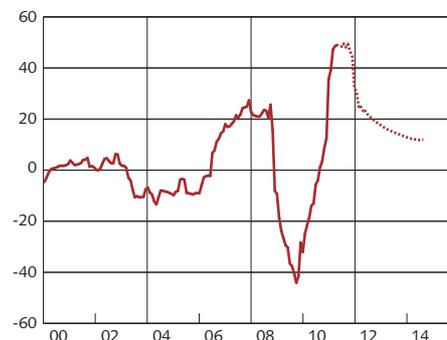
Chapter 2 provides an account of the effects on the economy of a slightly higher and a slightly lower repo rate over the coming year. It shows that a higher repo rate will result in excessively low CPIF inflation, while a lower repo rate will tend to lead to excessively constrained resource utilisation and CPIF inflation slightly above the target in the later part of the forecast period. All in all, the main scenario's repo rate path has been assessed as being well-balanced.

■ ■ The international situation and wage formation form the risks

The main scenario is based on several factors which are important but difficult to assess.

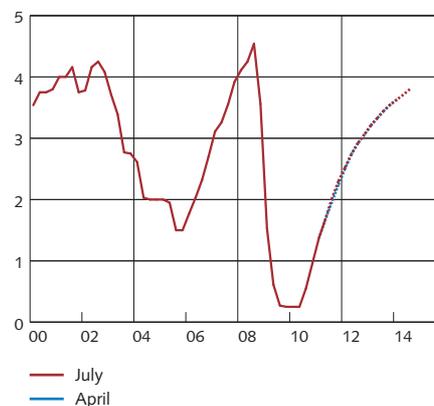
One such assumption is that wage formation will function well, as it has done over the last 10–15 years. However, should the currently high rate of CPI inflation make a more significant impression on various agents'

Figure 1:30. Interest rate cost index in the CPI
Annual percentage change



Sources: Statistics Sweden and the Riksbank

Figure 1:31. Repo rate
Per cent, quarterly averages



Source: The Riksbank

long-term inflation expectations and on wage formation, the repo rate may need to be raised more than the main scenario predicts.

Another important assumption is that the international recovery as a whole will continue. However, current developments in a number of countries are marked by great uncertainty and high risks. If, for example, the fiscal situation in certain European countries should deteriorate, the effects via the financial markets and aggregate demand may have negative consequences on production abroad and in Sweden. Under such circumstances it may become necessary to conduct a more expansionary monetary policy than that specified in the main scenario.

The effects of various alternative assumptions are analysed in more detail in Chapter 2.

■ CHAPTER 2 – Alternative scenarios and risks

In autumn 2011 a new round of wage bargaining rounds will begin that covers around two-thirds of employees. This is in a situation where the labour market has improved relatively quickly. It is therefore possible that wage increases may be higher than in the main scenario. The monetary policy consequences of such a development largely depend on whether or not the wage increases are linked to increased productivity. If wages increase faster than growth in productivity allows, inflation will be pushed up. This means that the repo rate

could need to be raised more quickly than in the main scenario and that unemployment would increase.

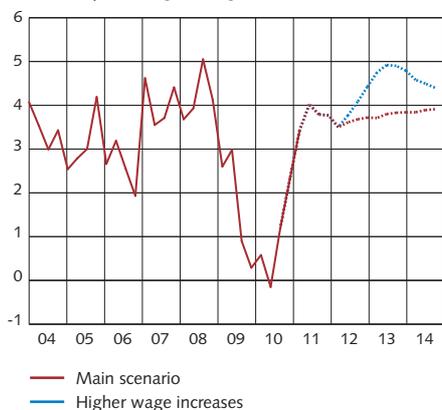
There is currently great concern over public finances in Greece in particular, but also in Portugal and Ireland. A deterioration in the situation could probably have repercussions on the functioning of the financial markets and on economic activity abroad. If this scenario is realised, monetary policy will need to be more expansionary than in the main scenario to counteract the negative effects on inflation and resource utilisation.

Forecasts of future economic developments are always uncertain. There are a number of circumstances that could lead to a different course of economic development and thus justify a different direction for monetary policy than the one expected in the main scenario. 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 future developments and the risks that are regarded as being particularly important at present. There are, of course, also a number of other uncertainty factors. These are reflected in the uncertainty bands around the forecasts in Figures 1:2 to 1:5 and Figure 1:13 in Chapter 1.

In the first alternative scenario, it is assumed that the round of collective wage bargaining results in higher wages than is assumed in the main scenario in 2012 and 2013. How this affects monetary policy largely depends on what lies behind the higher wage increases. If wages increase more rapidly than productivity growth allows, this will lead to increases in both inflationary pressures and unemployment. The repo rate may then need to be raised to counteract the increased inflationary pressures. On the other hand, if the wage increases are a consequence of increased productivity, the effects will be the opposite, that is, inflationary pressures will fall and unemployment will be lower. In such a scenario, monetary policy can be largely the same as in the main scenario.

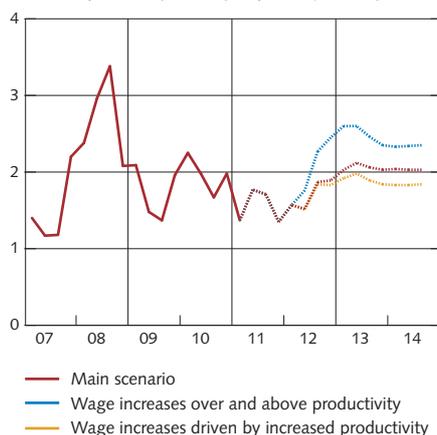
The other alternative scenario illustrates the effects of more severe public finance problems in the euro area. There is currently great concern over public finances in several euro area countries; Greece in particular, but also Portugal and Ireland. A deterioration in the situation would probably also have repercussions for the Swedish and international fixed-income markets. The scenario is based on this leading to a new decline in economic activity abroad and to a deterioration in the functioning of the financial markets, that is, interest rate spreads rising once again. This would result in both inflation and resource utilisation in Sweden being weaker than in the

Figure 2:1. Hourly labour cost
Annual percentage change



Sources: Statistics Sweden and the Riksbank

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



Sources: Statistics Sweden and the Riksbank

Figure 2:3. CPI
Annual percentage change, quarterly averages



Sources: Statistics Sweden and the Riksbank

main scenario. Monetary policy therefore becomes more expansionary in this scenario.

In conclusion, we discuss two alternatives for monetary policy. In the first scenario, the repo rate is raised at a slightly faster pace than in the main scenario; while the reverse applies in the second scenario.

Alternative scenario: higher wages⁶

In autumn 2011 a new, large-scale round of wage bargaining will begin in the Swedish labour market. At least 430 central wage agreements will be renegotiated and the negotiations will affect around 3 million employees, which corresponds to around two thirds of employees.

In the main scenario, wages are expected to increase by around 3.5 per cent a year in 2012 and 2013. However, the negotiations are taking place in a situation where the labour market has improved relatively quickly, companies' profits have recovered over a period of time and productivity growth has been relatively high for some time. In this type of situation there may be pressure from employees to be compensated for the so-called crisis agreements, which meant lower nominal wage increases in many central agreement areas during 2009 and 2010.

Different parts of the economy have recovered to varying extents since the crisis, which may entail coordination problems in wage formation. For instance, there is a substantial difference between how the labour market in the manufacturing industry has recovered compared with the services industry. In the construction industry there are signs that it is difficult to find labour with the right competence, while in the retail trade there is no general shortage of labour.⁷ Wage drift usually accelerates in sectors with an increasing shortage of labour.

At the same time, expectations of future wage increases among social partners have risen, according to the most recent surveys by Prospera. The surveys also point to the social partners' inflation expectations having risen. In the main scenario it is assumed that the upturn in inflation expectations is temporary and linked to the fact that mortgage rates have risen from low levels, which leads to high CPI inflation, see the article "Recent developments in inflation expectations" in this report. However, we cannot rule out the possibility that the currently high CPI inflation affects various agents' long-term inflation expectations and also wage formation.

⁶ 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. Valentin, "Introducing financial frictions and unemployment into a small open economy model", Working Paper no. 214, Sveriges Riksbank, 2007.

⁷ See the Riksbank's company interviews, May 2011.

There are thus several reasons why wage increases may be higher than expected. In the scenario "Higher wages" it is assumed that the wage negotiations result in final wage increases that are on average around 0.7 percentage points higher a year than in the main scenario (see Figure 2:1 and Tables 8 and 9).

The way that monetary policy reacts to the higher wage increases will depend to a large extent on how productivity develops. To illustrate this we present two different scenarios. In one scenario the faster wage growth is driven by additional wage increases above what is allowed by the growth in productivity, while this is not the case in the second scenario.⁸

■ ■ Wage increases above what is allowed by productivity justify a higher repo rate path

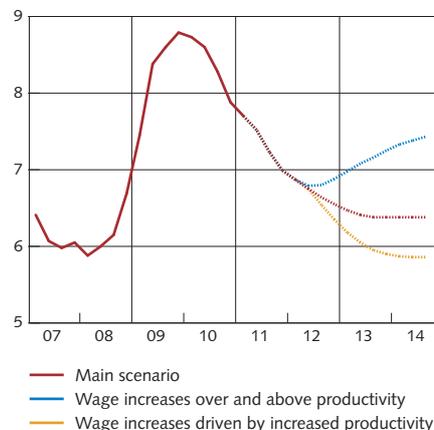
Companies normally set their prices as a mark-up on the production cost, which is affected by wage costs and productivity (or more precisely, the efficiency of production).

When wages rise faster than productivity, this leads to companies' costs increasing. Companies are then forced to either raise their prices to compensate for the increased costs or to reduce their margins. If companies choose to raise their prices, inflation will increase. In some cases, however, it may be difficult to raise prices, for instance, if competition in the sector is high. When there is stiff competition and low margins companies are instead forced to cut costs by rationalising in various ways. This can lead to a decline in employment and to increased unemployment.

In this scenario, companies choose to compensate for the higher wage increases by both raising their prices and rationalising more, which results in higher unemployment. Inflation during 2012 and 2013 will then be on average, measured both in terms of the CPIX and the CPI, around half a percentage point higher a year than in the main scenario (see the blue lines in Figures 2:2 and 2:3 and Table 8). Unemployment rises by less than half a percentage point per year on average (see Figure 2:4 and Table 8).

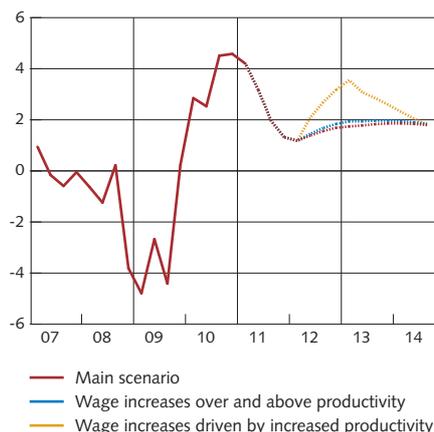
Total production is determined by productivity and the number of hours worked. Productivity increases marginally more in this scenario than in the main scenario (see Figure 2:5). The slightly higher productivity cannot compensate the fall in the number of hours worked, so GDP is on the whole poorer than in the main scenario. GDP growth will on average be around 0.3 percentage points lower per year than in the main scenario during 2012 and 2013 (see Figure 2:6 and Table 8).

Figure 2:4. Unemployment
Per cent of the labour force



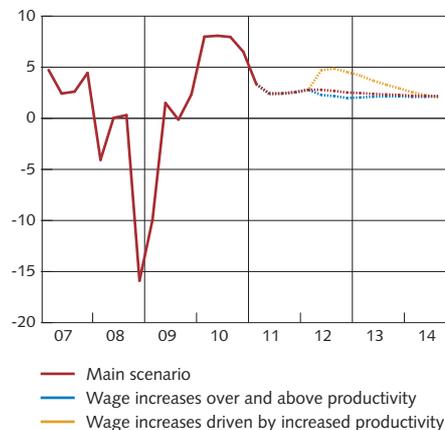
Sources: Statistics Sweden and the Riksbank

Figure 2:5. Labour productivity
Annual percentage change



Sources: Statistics Sweden and the Riksbank

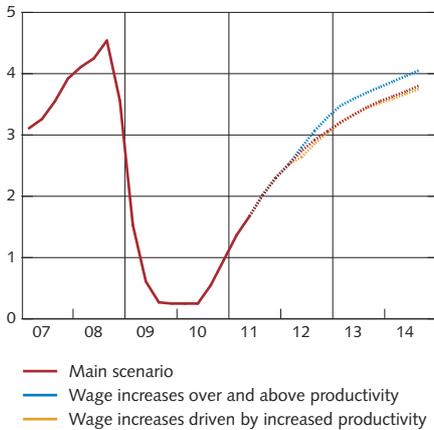
Figure 2:6. GDP
Quarterly changes in per cent calculated in annualised terms, seasonally adjusted data



Sources: Statistics Sweden and the Riksbank

⁸ Productivity in this chapter refers to labour productivity, that is, GDP per hour worked.

Figure 2:7. Repo rate
Per cent, quarterly averages



Source: The Riksbank

■ ■ Wage increases driven by increased productivity have little effect on monetary policy

If the faster increase in wages were driven by increased productivity, economic developments would look different. There are several reasons why productivity may be higher than in the main scenario. For example the financial crisis forced many companies to rationalise substantially. It is difficult to say how far this will affect productivity in the coming years. Productivity may therefore be higher than is assumed in the main scenario.

When wage increases are in proportion to changes in productivity, companies' cost pressures remain unchanged. This means that the total effect on inflation is slight (see the yellow lines in Figures 2:2 and 2:3).

Higher nominal wage increases, combined with more or less unchanged inflation mean that real wages will rise. It will thus be more profitable to work and the number of hours worked will increase (unemployment will fall, see Figure 2:4). Higher productivity together with more hours worked will push up GDP growth (see Figure 2:6).

■ ■ Monetary policy reacts differently

The monetary policy consequences of higher wage increases thus depend entirely on what lies behind the increases. Inflation and unemployment develop in different ways in the two scenarios. The consequences for monetary policy will therefore also be different. If wages increase more than productivity, the repo rate will be raised at a faster pace than in the main scenario to counteract the increased inflationary pressures. However, monetary policy does not fully counteract the upturn in inflation, as consideration is also given to resource utilisation.

Resource utilisation can be measured using several different forms of measurement, such as the GDP gap, the hours worked gap or the deviation in employment from its long-term level. The various measures often paint a similar picture of resource utilisation, but can under certain circumstances differ. Resource utilisation, measured using the unemployment measure, will be lower than its long-term level and inflation will overshoot the target in the scenario with wage increases over and above productivity growth. A possible monetary policy is shown by the blue line in Figure 2:7, which means that the repo rate is around a quarter of a percentage point higher than in the main scenario during 6 quarters towards the end of the forecast period.

If the wage increases were instead driven by faster productivity growth, the repo rate would remain almost unchanged (see Figure 2:7). Increased productivity pushes up resource utilisation, that is, unemployment falls. It also reduces the costs for companies, which holds back inflation. Monetary policy that takes into account both inflation and resource utilisation will thus remain largely unchanged in comparison with the main scenario.

■ ■ Lower wage increases than allowed by productivity justify a lower repo rate

The wage increases could also be lower than is justified by the growth in productivity. Employment in the manufacturing industry was hit hard by the crisis and has not fully recovered. As the manufacturing industry usually plays a normative role in wage increases, this could have a restraining effect on the wage bargaining.

The effects of such a scenario would of course be the reverse to the scenario where wage increases are higher than productivity growth allows. In other words, this could lead to lower inflation and a better development in employment, and monetary policy would be more expansionary than in the main scenario.

The National Institute of Economic Research's report "Wage Formation in Sweden 2011" presents a wage scenario that has some similarities to the one in this report. One difference is, however, that the National Institute of Economic Research's scenario studies changes in the sustainable unemployment rate, while this is unchanged in the scenario in this report.

Alternative scenario: more severe crisis in public finances

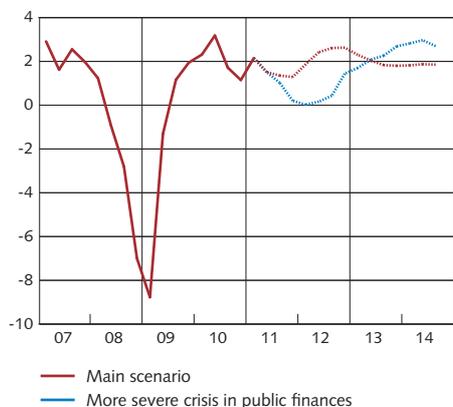
There is currently great unease concerning the public finances in several euro area countries. The situation in Greece is particularly serious. Problems in dealing with this situation could have repercussions on both the Swedish and international financial markets. The risk of contagion effects to other countries with public finance problems, such as Ireland and Portugal, and even Italy and Spain, cannot be ruled out.

The reason why contagion effects may be so marked in this scenario is that the financial markets are very integrated. If, for instance, Greece or some other country is forced to renegotiate its debt this could mean that some banks experience greater difficulty in obtaining funding on the financial markets. This could lead to a large increase in premiums and increased interest rate spreads. Swedish banks may then also be affected, despite having small direct exposures to the countries suffering problems.⁹

The scenario "Deeper crisis in public finances" outlines a development were the public finance problems worsen and interest rate spreads on the financial markets increase. The crisis starts in the euro area, where credit granting becomes tighter than normal. The problems spread relatively quickly to the United States too, but the effects are assumed to be much smaller there.

⁹ See Financial Stability Report 2011:1 for a more detailed discussion.

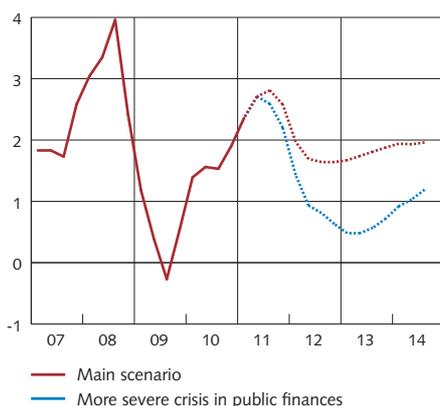
Figure 2:8. GDP abroad
TCW-weighted, quarterly changes in per cent
calculated in annualised terms



Note. TCW refers to a weighting of Sweden's most important trading partners.

Sources: National sources and the Riksbank

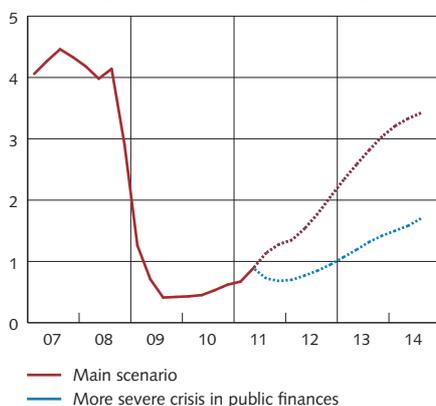
Figure 2:9. Inflation abroad
TCW-weighted, annual percentage change



Note. TCW refers to a weighting of Sweden's most important trading partners.

Sources: National sources and the Riksbank

Figure 2:10. Interest rate abroad
TCW-weighted, per cent, quarterly averages



Note. TCW refers to a weighting of Sweden's most important trading partners.

Sources: National sources and the Riksbank

In line with historical links the crisis has a negative effect on production lasting around two years. The euro weakens by around 5 per cent against the dollar, which to some extent counteracts the negative effects on GDP. The Monetary Policy Report published in July 2010 included a similar scenario with a crisis in public finances abroad. The increased interest rate spreads did not play an important role for the developments then, but it is doing so now.

Scenarios of this type, which combine a crisis in public finances with contagion effects to the financial markets, are naturally very difficult to construct. Above all, it is difficult to capture the macroeconomic effects of a decline in confidence in the banking sector, and a decline in confidence between the banks. There is a risk that such effects are underestimated, particularly in a world with integrated financial markets. In other words, there are several possible scenarios for international developments and contagion effects to Sweden. The scenario considered here shows one possible development abroad and its consequences for Sweden.

All in all, GDP growth among Sweden's most important trading partners (TCW-weighted) will be around 1.5 percentage point lower than in the main scenario in 2012, and just over half a percentage point lower in 2013. In 2012 and 2013 inflation and policy rates abroad will be on average 1 percentage point lower than in the main scenario. Figures 2:8, 2:9 and 2:10 show the sequence for GDP abroad, inflation and policy rates for both the main scenario and the alternative scenario, while Tables 10 and 11 show the annual average.

The crisis in public finances affects the financial markets abroad and in Sweden. The fixed-income markets react by substantially raising risk premiums. Swedish interest rate spreads are initially assumed to rise by around 120 basis points, and then to gradually return to more normal levels.

■ ■ A more severe crisis in public finances gives lower GDP, inflation and repo rate

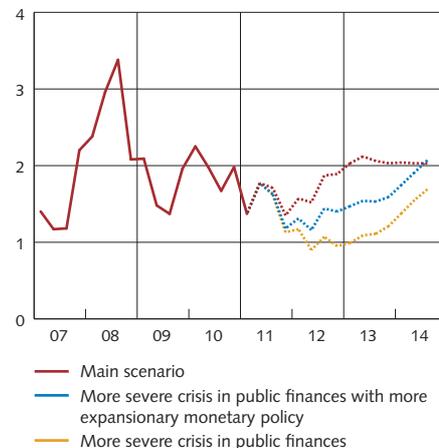
A lower policy rate abroad can spread to the Swedish economy through its impact on the exchange rate. The repo rate is cut here at roughly the same rate as policy rates abroad, which means that the effects on the exchange rate are relatively slight, all in all. The exchange rate weakens slightly at the beginning of the scenario and then strengthens somewhat. The exchange rate in turn affects import and export prices and thereby total demand in the economy.

It is always difficult to predict what will happen to the Swedish krona, and it is particularly difficult in a scenario of this type with contagion effects to the financial markets. In a similar scenario in the Monetary Policy Report of July 2010, it was assumed that the exchange rate would weaken significantly. This was due to an assumption that investors' interest in retaining assets in Swedish krona usually declines in periods of financial unrest. However, this assumption is not made in this scenario; the effects on the exchange rate are assumed to be slight. One reason for this is that the scenario involves the relatively strong position of the Swedish economy becoming even clearer than in the main scenario. Another reason is that the risk of further problems in the Baltic countries is currently assessed as slight. However, the krona usually weakens in times of unease and we cannot rule out this possibility if the crisis in public finances deepens as described here. In this case the effects on the economy and the development of the repo rate would be different.

How high CPI and CPIF inflation will become will depend to some extent on how prices of imported goods develop. This development is determined by prices of foreign goods in foreign currencies and by the exchange rate. When inflation abroad falls and the effect on the exchange rate is slight, this means that the price of imported goods falls. Moreover, the demand for Swedish goods declines. Inflationary pressures in Sweden are thus lower. Inflation measured as the CPIF and the CPI is on average a half percentage point and 1 percentage point lower per year respectively than in the main scenario in 2011-2013 (see the yellow lines in Figures 2:11 and 2:12, as well as Table 10).

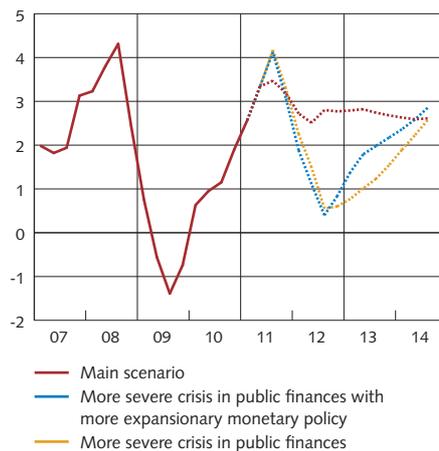
A fall in GDP growth abroad has the consequence that demand for Swedish goods declines, which has a negative effect on growth prospects. The lower level of demand also weakens the situation on the labour market. The GDP growth rate is on average around half a percentage point lower per year than in the main scenario, and unemployment is on average around half a percentage point higher per year during 2011-2013 (see Table 10). The path for the GDP growth rate and unemployment is indicated by the yellow lines in Figures 2:13 and 2:14.

Figure 2:11. CPIF
Annual percentage change, quarterly averages



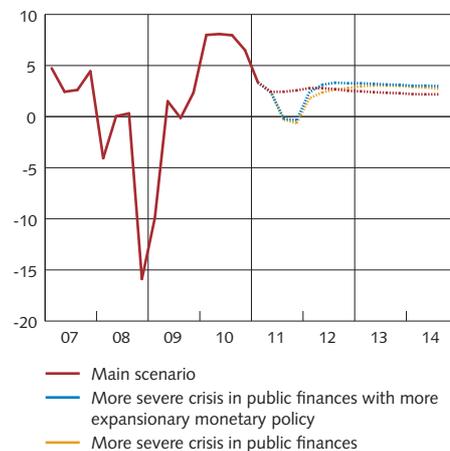
Sources: Statistics Sweden and the Riksbank

Figure 2:12. CPI
Annual percentage change, quarterly averages

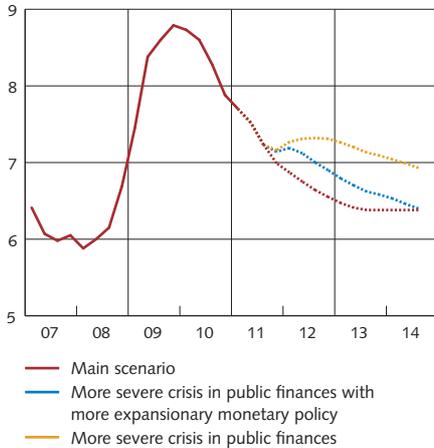


Sources: Statistics Sweden and the Riksbank

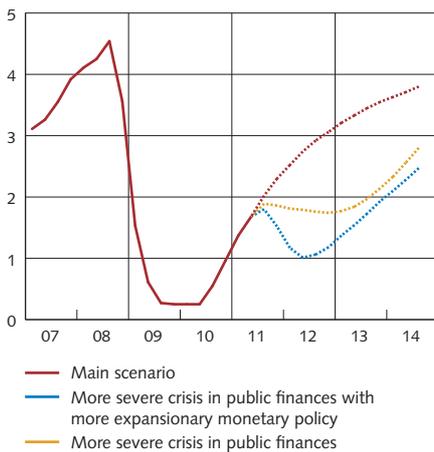
Figure 2:13. GDP
Quarterly changes in per cent calculated in annualised terms, seasonally adjusted data



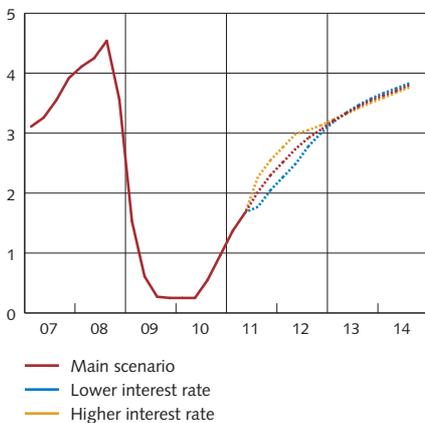
Sources: Statistics Sweden and the Riksbank

Figure 2:14. Unemployment
Per cent of the labour force

Sources: Statistics Sweden and the Riksbank

Figure 2:15. Repo rate
Per cent, quarterly averages

Source: The Riksbank

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

Source: The Riksbank

Lower inflationary pressures together with lower resource utilisation justify a more expansionary path for the repo rate than in the main scenario. In 2012 and 2013 the repo rate will therefore be on average just over 1 percentage point lower per year than in the main scenario (see Table 10 and Figure 2:15).

An important sub-component in the scenario is that the deeper crisis in public finances also affects the functioning of the financial markets. This is assumed to lead to an increase in interest rate spreads. Changes in interest rate spreads have similar effects on the economy to a demand shock. When interest rate spreads increase, consumption and investment decline. However, the effect on the exchange rate will be relatively slight, which means that net exports will remain almost unchanged. Total demand in the economy will fall, though, which will dampen inflationary pressures. Monetary policy can to some extent counteract the negative effects by cutting the repo rate.

It is assumed in the scenario that the Riksbank only uses the repo rate to counteract the effects of increased financial unease. In practice, there are also other instruments available to support the economy and the financial sector. During the most recent financial crisis a number of extraordinary measures were taken to support the banks. If a similar situation were to arise again, the Riksbank will, where justified, use such measures to alleviate the effects on the economy and the financial sector.

■ ■ Monetary policy can to some extent alleviate the effects of a more severe crisis in public finances

Under normal circumstances monetary policy can be explained with a simple policy rule where the interest rate depends on developments in inflation and resource utilisation.¹⁰ When large shocks occur, such as during the recent financial crisis, simple policy rules give a poor description of how monetary policy should react.¹¹

This is illustrated relatively well in the scenario in point. The yellow line in Figure 2:15 shows the path for the repo rate that will be the case when the monetary policy response follows a simple policy rule. Inflation will then fall below 1 per cent and unemployment will exceed 7 per cent. If monetary policy is allowed to become even more expansionary, however, inflation would come closer to the target while unemployment would be lower (see the blue lines in Figures 2:11, 2:12, 2:14 and 2:15). In other words, monetary policy according to the simple policy rule does not appear to be well balanced in this example.

¹⁰ 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, for a description of the type of simple policy rule used in the Riksbank's general equilibrium model, Ramses.

¹¹ For example, during the financial crisis the Riksbank reacted more pro-actively than would have been indicated by a simple policy rule.

However, it should be emphasised that it is relatively simple to construct examples in models that illustrate how well-balanced monetary policy can almost completely counteract the negative effects of, for instance, a more severe crisis in public finances. In practice, of course, it is much more difficult as reality is more complicated than the simple world of the model.

Alternative scenarios for the repo rate

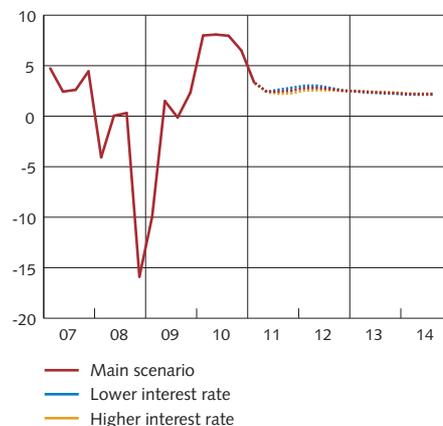
This section describes two alternative scenarios for the repo rate and the effects they entail for inflation and resource utilisation. In the first scenario, monetary policy is less expansionary in that the repo rate is set 0.25 percentage points higher than in the main scenario in four quarters. The second scenario describes the effects of a more expansionary monetary policy, where the repo rate is set 0.25 percentage points lower than in the main scenario in four quarters (see Figure 2:16).

■ ■ Higher repo rate slows down demand

A higher repo rate has the effect that banks and other financial institutions raise their savings and lending rates by roughly the same amount. When households face higher interest rates, they choose to increase their saving and reduce their consumption. The consequence of this is that Swedish companies will face slightly lower demand for their goods and services. Demand for labour will thus fall and companies will slow down their investment. The higher interest rates also contribute to this.

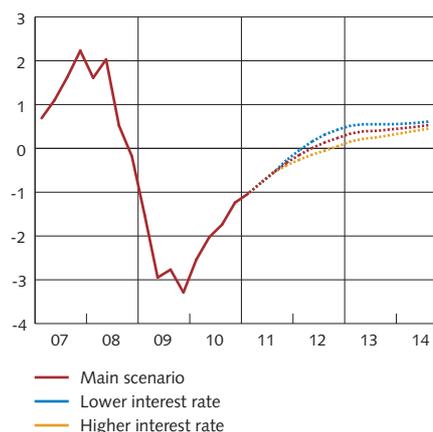
Higher interest rates also mean that the yield on Swedish assets in relation to foreign ones rises, which leads to the exchange rate strengthening in relation to the main scenario. This contributes to a fall in total demand. All in all, a higher interest rate means that both growth and resource utilisation will be slightly lower than in the main scenario (see the yellow lines in Figures 2:17 to 2:20). Lower demand also leads to companies slowing down their rate of price increase, with the result that inflation falls in relation to the main scenario (see Figures 2:21 and 2:22). See also Table 12 for a description of the annual average for the variables in the scenario.

Figure 2:17. GDP
Quarterly changes in per cent calculated in annualised terms, seasonally adjusted data



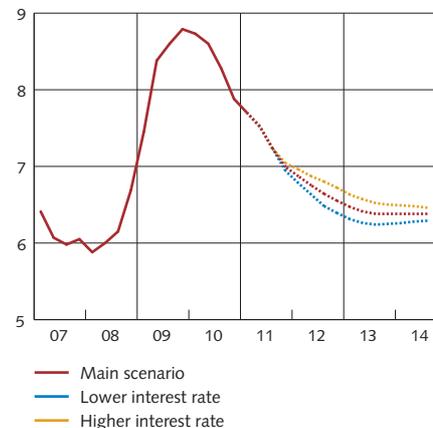
Sources: Statistics Sweden and the Riksbank

Figure 2:18. Hours gap
Per cent



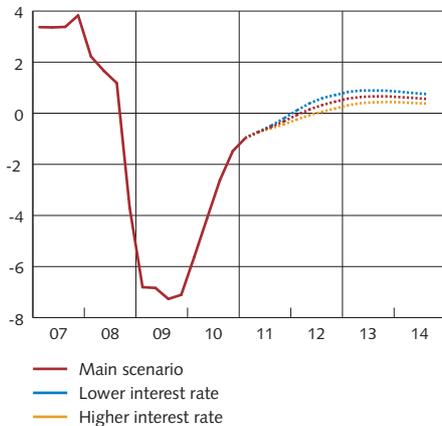
Sources: Statistics Sweden and the Riksbank

Figure 2:19. Unemployment
Per cent of the labour force



Sources: Statistics Sweden and the Riksbank

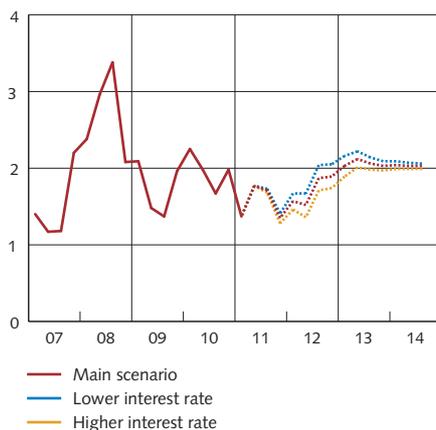
Figure 2:20. GDP gap
Per cent



Note. Refers to GDP's deviation from trend calculated using a production function.

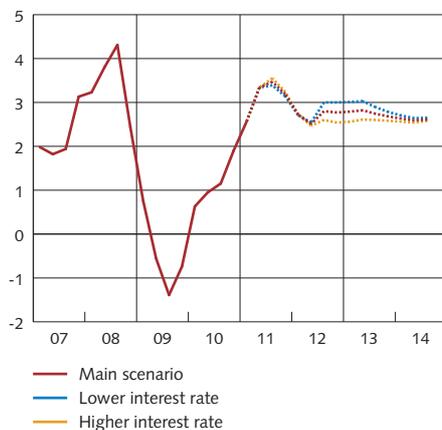
Sources: Statistics Sweden and the Riksbank

Figure 2:21. CPIF
Annual percentage change, quarterly averages



Sources: Statistics Sweden and the Riksbank

Figure 2:22. CPI
Annual percentage change, quarterly averages



Sources: Statistics Sweden and the Riksbank

■ ■ Lower repo rate increases demand

In the second scenario the Riksbank instead conducts a more expansionary monetary policy. The effects on household savings and consumption will thereby be the reverse. The lower return on saving will lead to households increasing their consumption, which leads to higher demand. The lower interest rates also stimulate investment. The effects on the exchange rate will also be the reverse, compared with the scenario with a higher interest rate. Consequently, GDP growth and resource utilisation will be higher than in the main scenario (see Figure 2:17 to Figure 2:20 and Table 13), at the same time as inflation will also be slightly higher (see Figures 2:21 and 2:22 and Table 13).

■ ■ Well-balanced monetary policy in the main scenario

The two repo rate paths, higher repo rate and lower repo rate, serve the purpose of illustrating how alternative paths for monetary policy affect inflation and resource utilisation. However, it is no simple task to assess which path for the repo rate gives the best balance between stabilising inflation and stabilising resource utilisation.

A higher repo rate path means that inflation measured as the CPI will be closer to the target of 2 per cent during the forecast period than the repo rate path in the main scenario. But it also means that CPIF inflation will be relatively low. A lower repo rate path means the opposite. CPI inflation will be further from the target and CPIF inflation will be closer to the target.

The overall assessment in the main scenario indicates that resource utilisation is slightly lower than normal in the first half of 2011. During the forecast period, resource utilisation will rise to a normal or slightly above normal level. A lower repo rate path would mean that resource utilisation is slightly higher during the forecast period. The higher repo rate path leads to a slightly lower resource utilisation according to some measures, but to relatively high unemployment.

The Riksbank assesses that the repo rate path in the main scenario provides a suitable balance between stabilising inflation and resource utilisation.

CHAPTER 3 – The current state of the economy

This chapter presents the information received since the Monetary Policy Update was published in April and the Riksbank's assessment of economic prospects in the quarters ahead.

Following a period of strong recovery, economic development in the emerging economies is now showing signs of a slowdown. Inflation is high as a result of rapid growth and rising commodity prices, and monetary policy continues to be tightened.

Swedish GDP continued to grow rapidly in the first quarter of this year, but the Swedish economy is now entering a more normal phase with lower growth than in 2010. Underlying inflation in Sweden is still relatively low and in line with

the assessment in the Monetary Policy Update published in April. However, CPI inflation is high and reached 3.3 per cent in May. The high rate of CPI inflation is reflected in the short-term inflation expectations, but in the longer term inflation expectations are well anchored around the inflation target.

Economic development in Europe is divided. Economic prospects have improved in some northern European countries, but development in several countries in the euro area is marked by acute problems with regard to public finances. The US economy is also recovering more slowly than was previously assumed.

Slowdown in growth abroad

Strong growth in the emerging economies, but the rate of growth is slowing down

Following a period of strong recovery in the emerging economies it is natural that the rate of GDP growth is now slowing down somewhat (see Figure 3:1). There are increasingly clear signs that this is the case. In April, industrial output fell or was weaker than expected in South Korea, Taiwan, Singapore and China. Purchasing manager indexes in China and Singapore also indicate that a slowdown is close at hand (see Figure 3:2).

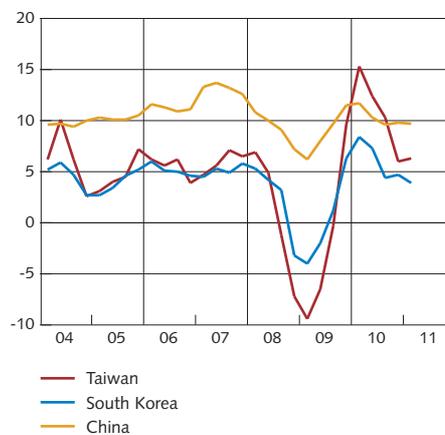
The rapid recovery of the emerging economies has led to a normalisation of their resource utilisation and in many areas the situation regarding resource utilisation is also becoming strained. At the same time, inflation in these countries has increased and has thus reduced the purchasing power of the households. Together with the policy measures taken to suppress the increase in inflation, this is having a dampening effect on growth. In some countries, such as Brazil, there was a slowdown in growth already in the autumn of last year.

World trade has largely been governed by developments in the emerging economies (see Figure 3:3). One consequence of the fact that growth in the emerging is now slowing down is that world trade is also slowing down and growing at a more normal rate.

Slower recovery in the United States

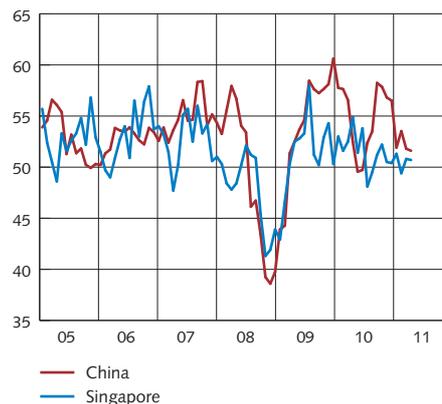
In line with the pattern in earlier financial crises, the recovery is slow in those countries that were at the centre of the recent crisis. In the United States, GDP increased in the first quarter by a moderate 1.9 per cent compared to the fourth quarter of last year, calculated as an annual rate

Figure 3:1. GDP in Taiwan, South Korea and China Annual percentage change



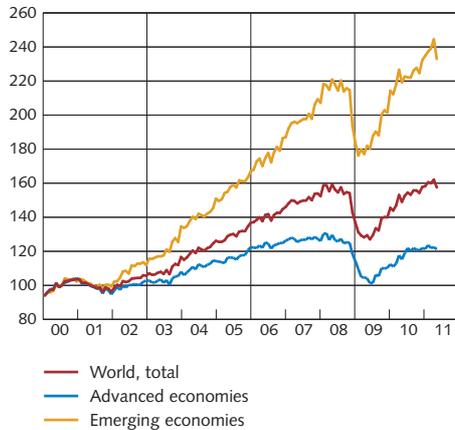
Sources: National sources

Figure 3:2. Purchasing manager's index Index, seasonally-adjusted data



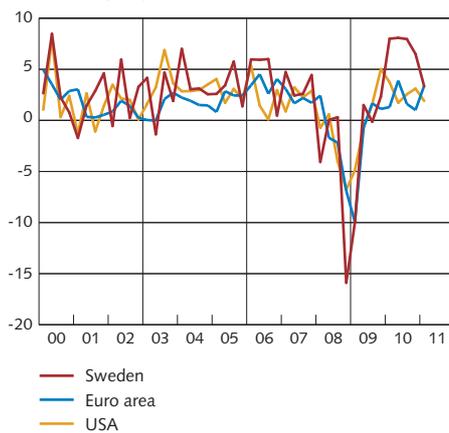
Source: Markit Economics

Figure 3.3. World import volume
World trade monitor index, 2000 = 100,
seasonally adjusted data



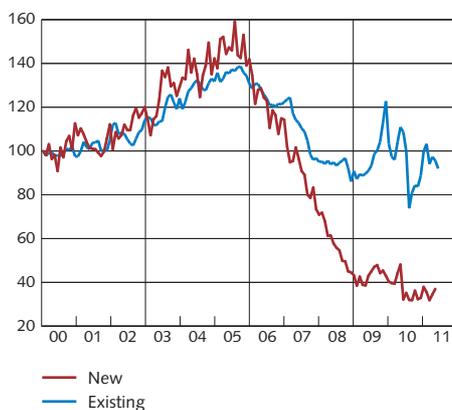
Source: Netherlands Bureau for Economic Policy Analysis

Figure 3.4. GDP in different regions and countries
Quarterly changes in per cent, annual rate,
seasonally-adjusted data



Sources: Bureau of Economic Analysis, Eurostat and Statistics Sweden

Figure 3.5. Sales of existing and new homes in the USA
Index, 31 January 2000 = 100



Sources: U.S. Census Bureau and National Association of Realtors

(see Figure 3:4). This outcome is lower than was expected in the April Monetary Policy Update. The expansionary effect of the reduction of employers' contributions that came into force in at the turn of the year was counteracted by an increase in the households' petrol costs. Petrol prices continued to increase rapidly well into May, but have since fallen somewhat. Public expenditure also declined because the US Congress has not yet decided on how public borrowing should be conducted in the period ahead. The slowdown is also partly explained by the fact that inclement weather hampered construction.

Confidence indicators suggest that this weak development will continue during the second quarter. The purchasing managers' index for the service sector increased slightly in May following a sharp fall in April. On the other hand, confidence in the manufacturing industry fell significantly in May. Various regional sub-indexes for the manufacturing industry indicate a continuing fall in June. The fall in confidence can at least partly be linked to the decrease in car production due to the shortage of input goods and components manufactured in Japan. Development in the United States is also hampered by the continued weak development of the US housing market (see Figure 3:5).

Although employment has increased in the United States recently, labour market statistics show that unemployment increased somewhat in May. Despite the fact that a slight increase in structural unemployment seems likely, the assessment is that there is still ample spare capacity in the economy (see Figure 3:6).

■ ■ Divided development in Europe

Despite major fiscal policy challenges, GDP growth in the euro area in the first quarter was relatively strong (see Figure 3:4). The outcome was somewhat higher than forecast in the April Monetary Policy Update. As in the United States, the weather was a factor that affected growth in the early part of the year. The outcome was partly a recoil after cold weather restricted construction investment during the fourth quarter of last year, but household consumption also contributed to the growth of GDP. There are, however, major differences between the countries. Growth in Germany and its neighbours the Netherlands, Belgium and France was more rapid than the average. On the other hand, Portugal, which is one of the countries that is severely tightening its budget, experienced a fall in GDP (see Figure 3:7). Development was also weak in Italy, Spain and Greece.

GDP in the euro area is now approaching its pre-crisis level. However, unemployment is still high and the assessment is that there

is plenty of spare capacity in the economy. Here too there are major differences between the countries. Unemployment has fallen in Germany while it is very high in Spain and increasing in Greece.

Since the Monetary Policy Update was published in April, concern has grown about the long-term ability of countries with weak public finances to service their debts. This particularly relates to countries that are currently the subject of support programmes provided by the IMF and the EU. Portugal has received a support package from the IMF and the EU amounting to EUR 78 billion on condition that the country implements planned reforms and saving measures. Ahead of the decisions on whether to pay an additional instalment of the emergency loans to Greece in July, concern about the sustainability of the country's reform programme and the situation regarding the development of its debt has increased once again. This has led to a further downgrading of the country's credit rating by the credit institutions.

In the United Kingdom, GDP increased by 1.9 per cent, calculated as an annual rate, during the first quarter compared to the fourth quarter last year. The upturn during the first quarter can be explained by a sharp increase in exports and by the increased contribution of inventories to GDP. On the other hand, imports and domestic demand both fell.

The labour market in the United Kingdom has improved somewhat over the last 12 months and the number of people in employment has increased, although this figure is still much lower than it was before the financial crisis.

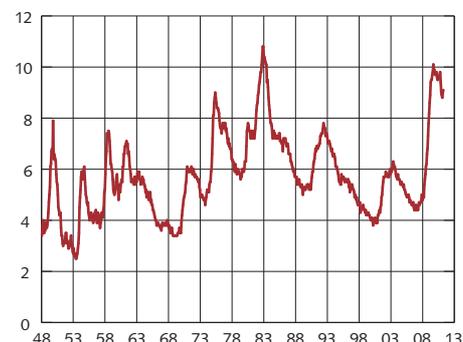
■ ■ Effects of the earthquake greater than expected in Japan

In Japan, the short-term effects of the earthquake were greater than previously estimated and GDP fell during the first quarter of the year. Incoming data has also been somewhat weaker than expected, although confidence indicators suggest that a recovery has begun. The contagion effects in relation to other countries appear to be relatively limited and short lived.

■ ■ Slowdown in growth in Sweden's Nordic neighbours

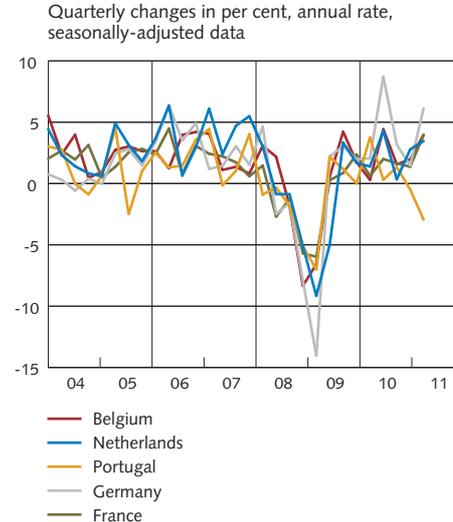
In Norway, GDP in the mainland economy increased by 2.4 per cent, calculated as an annual rate, during the first quarter of the year, which was slightly less than expected (see Figure 3:8). However, total GDP, which includes oil and gas production, fell by 1.8 per cent. The fall in GDP is due to a decline in the production of oil and gas and should be viewed in light of the fact that these sectors experienced strong growth in the fourth quarter of 2010.

Figure 3:6. Unemployment in the USA
Per cent of the labour force



Source: U.S. Bureau of Labor Statistics

Figure 3:7. GDP in a selection of countries in the euro area
Quarterly changes in per cent, annual rate, seasonally-adjusted data



Source: Eurostat

Figure 3:8. GDP in Denmark, Finland and Norway
Quarterly changes in per cent, annual rate,
seasonally-adjusted data

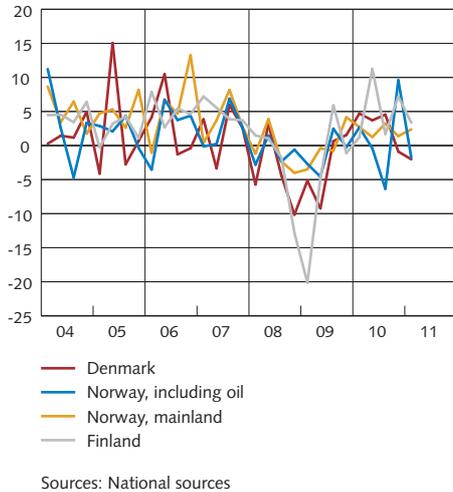
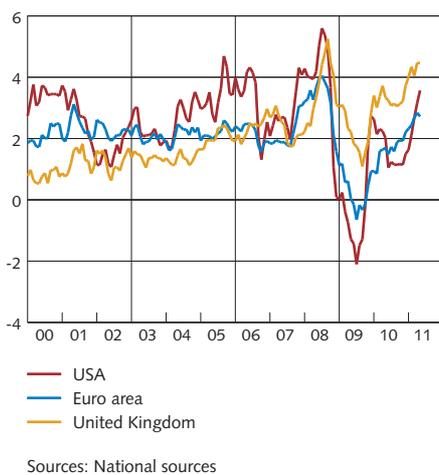


Figure 3:9. Consumer prices
Annual percentage change



Denmark's GDP fell by 2 per cent in the first quarter of this year, calculated as an annual rate. At the same time, the figure for GDP growth in the fourth quarter of 2010 has been revised upwards from -1.6 per cent to -0.9 per cent.

In Finland, GDP increased by 3.4 per cent as an annual rate during the first quarter. However, this was lower than the very high rate of growth noted at the end of 2010. One reason for this slowdown was that exports fell at the same time as imports increased rapidly.

■ ■ High inflation but stable inflation expectations

Inflation is high in the developed economies as well as in the emerging economies. Underlying inflation has also increased in the emerging economies and the commodity-price increases during the spring have had a greater impact on inflation than expected. Underlying inflation is lower in the developed countries, however. Inflation is therefore expected to fall in the near future when the effects of the commodity-price increases wane.

In the United States, CPI inflation increased to 3.6 per cent in May (see Figure 3:9). Underlying inflation, which excludes the effects of energy and food prices, is still low but has increased in recent months and reached 1.5 per cent in May. Despite the high rate of CPI inflation, inflation expectations have fallen in recent months according to surveys and to market pricing.

Inflation is still high in the euro area. This is largely due to the effects of the increases in commodity prices in the spring but also to higher taxes and charges in some countries (Figure 3:9). Inflation fell slightly in May, however, to 2.7 per cent from 2.8 per cent in April. Further falls can be expected as the effects of the higher commodity prices in the spring and changes in VAT rates fall out of the 12-month figures. Companies' and households' short-term inflation expectations increased in early 2011, but the long-term expectations are relatively stable according to the ECB's Survey of Professional Forecasters.

In the United Kingdom, CPI inflation reached 4.5 per cent in May (see Figure 3:9). This high rate of inflation is mainly due to higher VAT, higher energy prices and higher import prices as a result of the weak pound. Short-term inflation expectations have also increased in the United Kingdom. The picture of long-term inflation expectations is, on the other hand, divided. Measures of inflation expectations among the households have risen to levels above the historical average. However, the expectations of professional forecasters have remained stable around 2 per cent for quite some time. Moreover, pricing on the financial markets indicates that inflation expectations in the longer term have fallen somewhat over the last 12 months.

■ ■ Some central banks have begun to tighten monetary policy

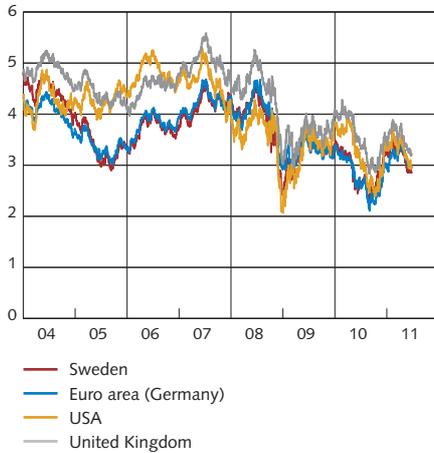
Monetary policy is still being tightened in the emerging economies and this tightening is expected to continue in the period immediately ahead.

The ECB raised its policy rate to 1.25 per cent at the beginning of April with reference to the higher outcomes for inflation. Expectations according to surveys and market pricing indicate that there will be a further one or two increases during the year.

The Federal Reserve, on the other hand, has kept its policy rate within the range of 0 to 0.25 per cent since December 2008. As a first step in the phase out of the extraordinary measures, the Federal Reserve is planning to stop buying government bonds at the end of June. According to market pricing, the Federal Reserve is not expected to raise the policy rate until the third quarter of 2012.

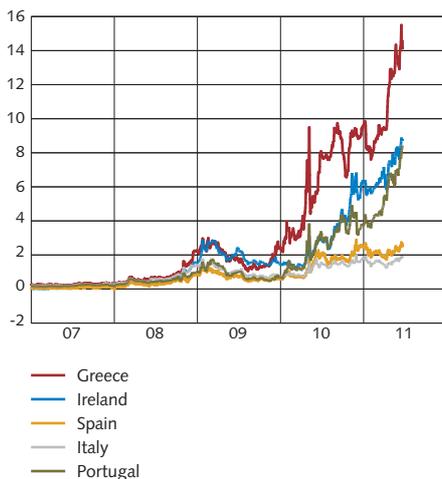
Market pricing also indicates that the Bank of England will increase its policy rate at some point during the second quarter of 2012.

Figure 3:10. Ten year government bond yield
Per cent



Source: Reuters EcoWin

Figure 3:11. Interest rate differential between
countries with financial problems and Germany,
10-year maturity
Percentage points



Source: Reuters EcoWin

Increased unrest on the financial markets

■ ■ Fragmented picture regarding government bond rates

Rates for longterm government bonds have fallen during the second quarter in Sweden, the United Kingdom, the United States and Germany (see Figure 3:10). In above all the United States and Germany the background to these falls is that economic development has been weaker than the market participants expected. The sovereign debt problems have left their mark on the development of bond rates in the euro area and the picture is therefore fragmented. Rates have risen for the countries affected by sovereign debt problems. On the other hand, bond rates have fallen in the core countries of the euro area. One factor that has contributed to this has been the increased demand for assets that are seen as being relatively secure. Swedish government bonds are one such asset and the strong state of public finances in Sweden is contributing to a high demand for these bonds. Since the Monetary Policy Update was published in April, the Swedish National Debt Office has also revised down the forecast for the Swedish borrowing requirement. The fact that Swedish government bond rates have fallen significantly, comparatively speaking, is therefore probably not because observers are expecting to see weaker economic development in Sweden but rather because public finances continue to be strong.

■ ■ Rising interest rates in countries with financial problems

Since the monetary policy meeting in April, market expectations that Greece will renegotiate its sovereign debt have increased. This is reflected in the fact that Greek government rates and CDS premiums have risen to very high levels (see Figure 3:11). This may be an indication that the market is pricing a high probability of some form of write-off of the Greek sovereign debt. Rates for Irish and Portuguese government bonds have also increased. Both Ireland and Portugal are receiving financial support from the EU and the IMF and market pricing indicates that in these countries too there is uncertainty about the ability of the countries to implement the budget restraints they have committed to. However, these rates are at much lower levels than the rates for equivalent Greek government bonds (see the discussion in the article "The sustainable development of central government debt" in this Report for a review of the debt situation in various countries).

The differentials between Spanish and German government bond rates and CDS premiums shows that the market's confidence in Spain is significantly higher than its confidence in Ireland and Portugal, although there has been a slight increase in these differentials recently. The increasing anxiety about debt problems has also resulted in falls across the board on the European stock markets, as well as in a weaker development of the euro.

■ ■ The krona has been affected by the financial unrest

The krona weakened significantly in connection with the financial crisis. However, the krona has strengthened over the last two years and in terms of the TCW index the krona is back to its pre-crisis level (see Figure 3:12). Since the Monetary Policy Update was published in April, however, the krona has weakened somewhat. As the krona is a small currency it has historically tended to weaken during periods of financial unrest. The strong development of the Swedish economy and higher policy rate compared to Sweden's main competitors, in combination with Sweden's strong public finances, has probably contributed to the krona still remaining at historically strong levels despite the financial unrest.

■ ■ Monetary policy expectations in Sweden have declined according to market pricing

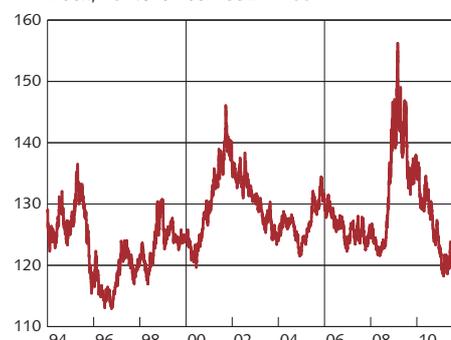
As in the case of government bond rates, implied forward rates have fallen in Sweden and abroad since April (see Figure 3:13). Forward rates can be interpreted as a measure of the future development of the policy rate but they are also affected by maturity premiums, which complicates the interpretation of movements in forward rates.

Swedish implied forward rates have, however, fallen less than forward rates in other countries (see Figure 3:13). This indicates that the market expects the Riksbank to continue raising its policy rate (the repo rate) more quickly than the other central banks. In Sweden, market pricing is in line with the Riksbank's forecast for the repo rate for the major part of 2011. According to market pricing, the repo rate will reach 2.2 per cent at the end of the year. By the end of 2012 it is expected to reach 2.4 per cent (see Figure 3:14). This is lower than the Riksbank's forecast. The monetary policy expectations measured in the Prospera survey are, however, higher than indicated by forward pricing for next year and the period ahead, and are thus more in line with the Riksbank's forecast for the repo rate (see Figure 3:14).

■ ■ Significant differences between variable mortgage rates and the repo rate

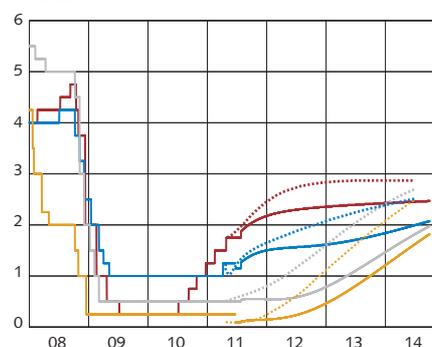
Since the end of 2010, the variable mortgage rate has increased more than can be explained by the rising repo rate. One of the reasons for this is that funding costs for banks and mortgage institutions have increased in this period. Partly as a result of adjustments to new regulatory frameworks, financial agents now need to fund their operations at longer maturities, which is usually somewhat more expensive. The financial crisis has also led the banks to change their behaviour and to aim to hold more liquidity than previously. All in all, this has pushed up the costs for short-term liquidity on the Swedish money market. One sign of this is that the difference between a forward contract for an interbank rate and a forward contract for the repo rate increased last year (see Figure 3:15). As both of these rates should entail the same expectations of the repo rate, the difference between them mainly reflects the costs of short-term liquidity on the interbank market. These costs have then been transferred

Figure 3:12. TCW-weighted exchange rate Index, 18 November 1992 = 100



Source: The Riksbank

Figure 3:13. Policy rate expectations measured in terms of market prices
Per cent

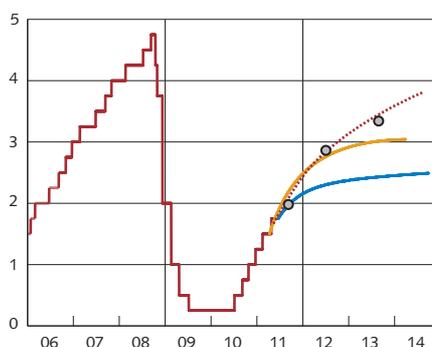


— Sweden 22 June 2011
 Sweden 20 April 2011
 — Euro area 22 June 2011
 Euro area 20 April 2011
 — USA 22 June 2011
 USA 20 April 2011
 — United Kingdom 22 June 2011
 United Kingdom 20 April 2011

Note. The implied forward rates are adjusted for credit risk and maturity premiums.

Sources: Reuters EcoWin and the Riksbank

Figure 3:14. Repo rate expectations measured as market prices and surveys in Sweden
Per cent

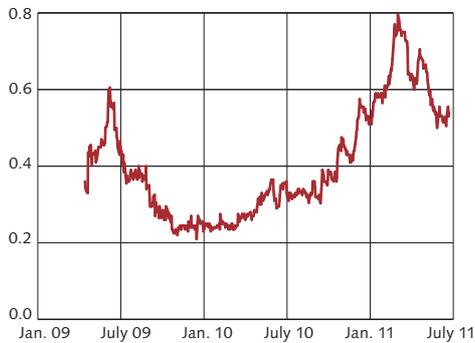


— Repo rate
 — Forward rate 22 June 2011
 — Forward rate 11 April 2011
 ● Survey (Prospera) average, 1 June 2011

Note. Forward rates have been adjusted for risk premiums and describe the expected overnight rate.

Sources: Reuters EcoWin, TNS SIFO Prospera and the Riksbank

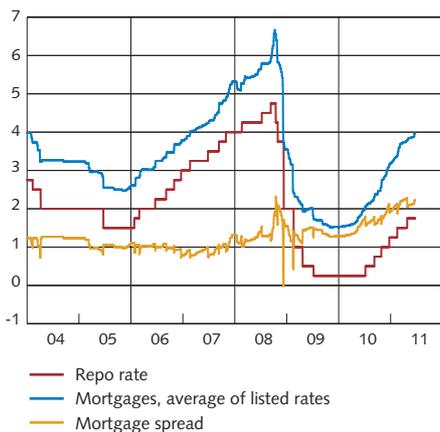
Figure 3:15. Difference between expected STIBOR and expected repo rate
Percentage points



Note. The difference between a 3-month forward contract (FRA) starting within 3 months for an interbank rate (STIBOR) and a forward contract for the repo rate (RIBA).

Source: Reuters EcoWin

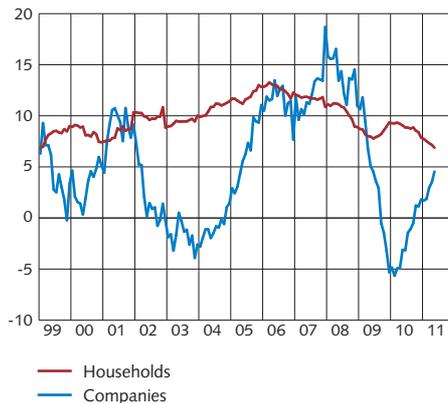
Figure 3:16. Variable listed mortgage rate, repo rate and difference between variable listed mortgage rate and repo rate
Per cent and percentage points



Note. Refer to the average three month listed mortgage rates from banks and mortgage institutes. Listed mortgage rates are those published by Nordea, SBAB, SEB, Spintab and Stadshypotek in, for example, daily press.

Sources: Reuters EcoWin and the Riksbank

Figure 3:17. Bank lending to companies and households
Annual percentage change



Source: Statistics Sweden

to the customers of the banks and mortgage institutions in the form of higher mortgage rates.

However, the situation on the interbank market has stabilised since the monetary policy meeting in April. The difference between the interbank rates, both the most short-term and those at slightly longer maturities, and the repo rate has continued to decrease (see Figure 3:15). At the same time, the difference between variable mortgage rates and the repo rate has decreased somewhat, although not to the same degree. The difference also remains at an historically high level (see Figure 3:16).

■ ■ Lending to Swedish households continues to slow down

Lending to companies has increased and the lending growth rate amounted to 4.5 per cent in May (see Figure 3:17). Lending to households, which largely consists of mortgages, also continued to increase, rising by 6.9 per cent in May compared with the same period last year. However, the rate of lending to households has slowed down somewhat recently. The corresponding figure a year ago was over 9 per cent. Rising mortgage rates have probably contributed to this. The slowdown in lending may also relate to the gradually increasing effect of the mortgage ceiling. Another factor is that the recent rapid increase in house prices seems to have come to a halt. House prices can be measured in different ways but all in all the statistics indicate that house prices have largely remained unchanged during the spring.

Growth in Sweden normalising

■ ■ Sweden growing at a more normal rate

The rate of growth in the Swedish economy slowed down slightly in the first quarter of 2011 but is still high in both an international and an historical perspective. However, the National Accounts show that the very high growth rates of previous quarters are gone and that the economy is now entering a more normal growth phase. GDP grew by 3.3 per cent in the first quarter of 2011 compared to the fourth quarter of last year, calculated as an annual rate (see Figure 3:4). All in all, the recent strong recovery of the Swedish economy means that total output has now passed the pre-crisis level (see Figure 3:18).

Monthly information indicates that the Swedish economy is continuing to grow at a good rate. The Economic Tendency Survey still indicates that the Swedish economy is “much stronger than normal” (see Figure 3:19). The purchasing managers’ index is also above its historical average and still indicates that the situation in the industrial sector is strong.

All in all, monthly outcomes and indicators therefore suggest that growth will continue to be good in the quarters ahead. However, the Swedish economy is expected to grow at a more normal rate going forward. This is because, in our assessment, the major part of the recovery from the depressed output levels following the crisis is now complete.

■ ■ Temporarily lower growth in consumption at the start of the year

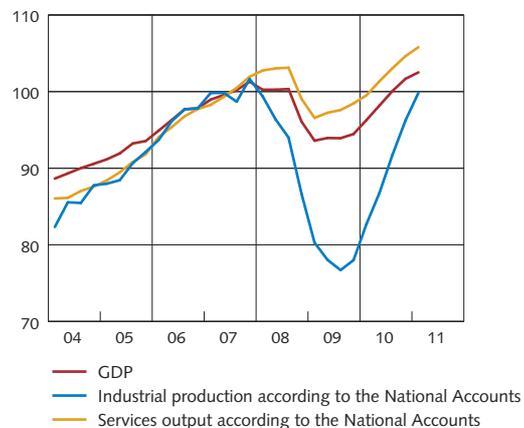
The rate of increase in household consumption slowed down in the first quarter of this year. The weak outcome can primarily be attributed to the decline in the consumption of energy. Retail sales also fell and consumption of retail goods developed weakly. However, household purchases of cars continued to increase.

The weak development of the stock market at the start of the year meant that the households’ shareholdings fell by almost SEK 5 billion during the first quarter. The households’ interest expenditure in relation to disposal income increased as mortgage rates increased. Retail sales increased sharply in April but were weak in May (see Figure 3:20). Despite this, however, consumption is expected to increase in the quarters ahead given the continued high level of consumer confidence.

■ ■ Good potential for Swedish companies to increase investment

Investment increased for the fourth consecutive quarter in the first quarter of 2011 (see Figure 3:21). Investment in housing is the main contributor to this upturn, but investment in the public sector has also contributed in recent quarters. This is primarily due to major infrastructure investments and an increase in construction and civil engineering investments, for example Karolinska Hospital and the City Line in Stockholm and Malmö General Hospital. A broad upturn in the service industries has contributed

Figure 3:18. GDP and production
Index, 2007 = 100, seasonally-adjusted data



Source: Statistics Sweden

Figure 3:19. The Economic Tendency Indicator
Index, mean = 100, standard deviation = 10



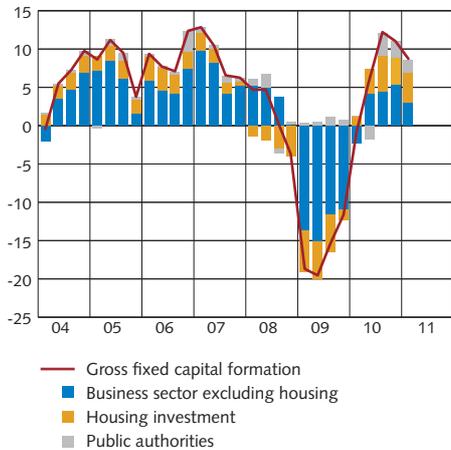
Source: National Institute of Economic Research

Figure 3:20. Retail sales
Volume, index 2005 = 100, seasonally-adjusted data



Source: Statistics Sweden

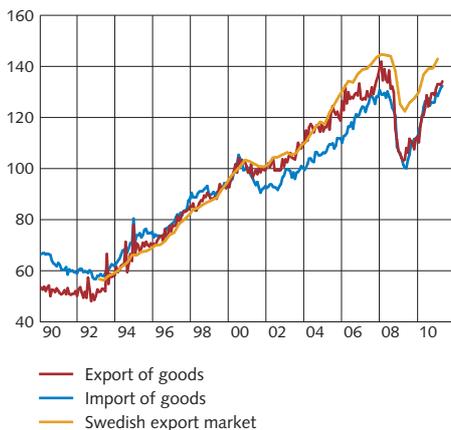
Figure 3:21. Gross fixed capital formation
Annual percentage change and percentage points



Note. The bars represent the respective contributions to total gross fixed capital formation.

Sources: Statistics Sweden and the Riksbank

Figure 3:22. Swedish foreign trade
Index, 2000 = 100, seasonally adjusted data



Sources: Statistics Sweden and the Riksbank

to the increase in investment in the private sector. However, development has been weaker in the industrial sector.

All in all, the conditions are favourable for increasing investment. The fall in production in the industrial sector during the crisis led to a lot of spare capacity. Capacity utilisation is now back to normal levels and it is therefore expected that investment will accelerate. As investment will begin from a low starting point, the indications are that investment will develop strongly in the period ahead. Both Statistics Sweden's investment survey and the Riksbank's company interviews support the assessment that investment will increase in the industrial sector in the quarters ahead. Another factor is that lending to companies is now increasing again after falling in connection with the crisis (see Figure 3:17).

Restocking continued in the first quarter of 2011 and contributed 2.5 percentage points to the annual rate of growth of GDP. Restocking took place both in the industrial sector and in the retail sector. Restocking is expected to slow down, and thus to contribute less to the growth of GDP during the quarters immediately ahead.

■ ■ Swedish foreign trade still strong

Exports continued to grow rapidly in the first quarter of 2011. As in the preceding quarters, exports of goods contributed most to the increase. Exports of motor vehicles and telecommunication products have increased most in recent quarters, while exports of services have not grown as strongly.

The Swedish export market has recovered since the crisis (see Figure 3:22). Although world trade may slow down somewhat in the quarters ahead, growth is still high. Indicators such as new export orders and monthly statistics on the export of goods also suggest that exports will continue to increase rapidly in the quarters ahead.

Imports also developed strongly in the first quarter of 2011. As in the case of exports, it was mainly imports of goods that contributed to the increase. In contrast to exports, however, imports of services are growing more in line with imports of goods. Imports of services include foreign travel, which has been boosted by the strong krona. Monthly statistics on imports indicate an ongoing increase in the period ahead. Total imports are expected to increase in pace with the increases in exports and domestic demand.

■ ■ Strong public finances

General government net lending was positive again after the unusually weak fourth quarter of 2010. According to the National Accounts for the first quarter of this year, general government net lending amounted to over 1 per cent of GDP. Compared to a year ago, this entails an improvement of almost 1 percentage point. Monthly outcomes for the central government budget and for the central government loan requirement up to the end of April this year indicate that net lending will continue to be strong, mainly due to increased tax revenues. For the whole year 2011, general government net lending as a share of GDP is expected to amount to 0.9 per cent.

■ ■ Somewhat weaker labour market

The labour market has recovered rapidly. Approximately 140 000 jobs were lost as a result of the crisis, but during the first quarter of 2011 the number of those in employment was slightly higher than before the crisis. The recovery has been sluggish in the industrial sector, but the statistics for the first quarter show that a tangible recovery has taken place here too (see Figure A12 in the article “Low unemployment – a challenge” in this report). At the same time, the labour force has continued to increase (see Figure 3:23). Unemployment has continued to fall but is not back to its pre-crisis level because the labour force has increased at the same time.

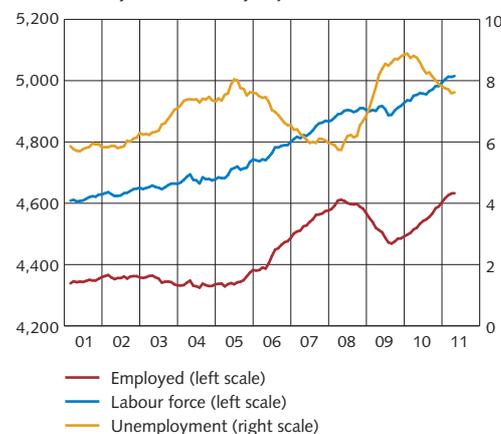
During the first quarter of 2011, the number of those employed increased in line with the assessment in the April Monetary Policy Update. The figures for the number of people in the workforce and for unemployment have also largely developed as expected.

However, the outcomes for April and May suggest that the development of the labour market during the second quarter of this year was slightly weaker than predicted in the forecasts in the Monetary Policy Update. Indicators such as the number of newly-registered vacancies reported by the Swedish Employment Agency show, however, that the demand for labour is continuing to increase. Although companies have reduced their employment plans somewhat according to the latest Business Tendency Survey of the National Institute for Economic Research, the levels are still high and the companies are planning to increase their workforces.

■ ■ Temporary effects behind differences in wage statistics

There are two main sources for wage statistics: the National Accounts and Statistics Sweden's short-term wage statistics. On average, the differences between these two measures are small (see Figure 3:24). According to the National Accounts, the development of hourly wages throughout the economy during the first quarter of this year was much stronger than indicated by the short-term wage statistics, even taking into account the fact that the short-term wage statistics are normally revised upwards (see Figure 3:24).

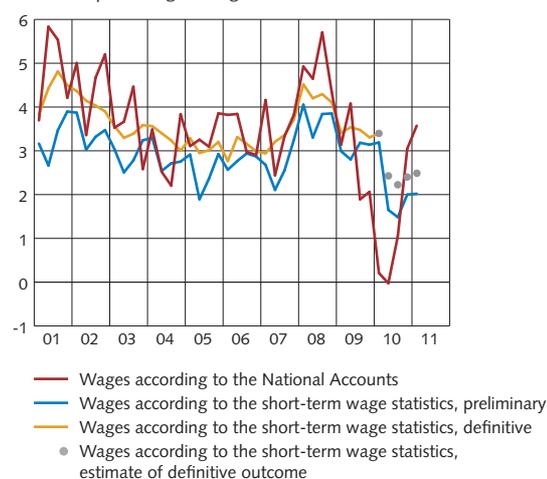
Figure 3:23. Employment, labour force and unemployment
Thousands and percentage of the labour force, 15-74 years, seasonally adjusted data



Note. Three-month moving averages.

Source: Statistics Sweden

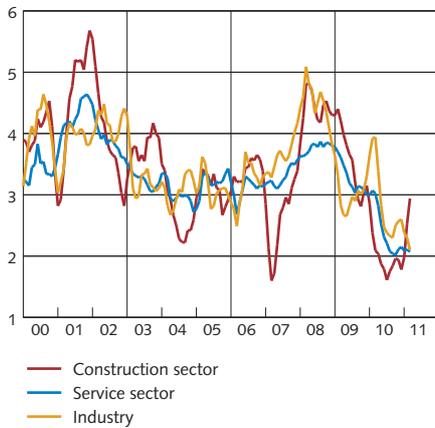
Figure 3:24. Wages according to the National Accounts and to the short-term wage statistics
Annual percentage change



Note. The short-term wage statistics for the last 12 months are preliminary and are usually revised upwards. The grey dots in the figure show the Riksbank's assessment of the final outcome according to the statistics.

Sources: National Mediation Office, Statistics Sweden and the Riksbank

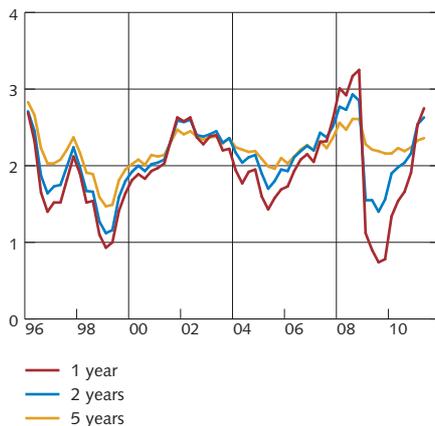
Figure 3:25. Wages in the business sector
Annual percentage change



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

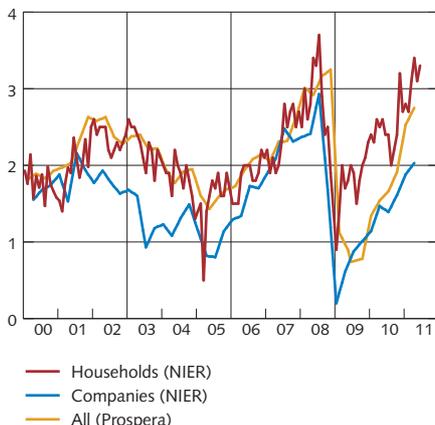
Source: National Mediation Office

Figure 3:26. All respondents' expectations of inflation one, two and five years ahead
Per cent



Source: TNS SIFO Prospera

Figure 3:27. Expectations of inflation one year ahead
Per cent



Note. Household figures are monthly, others quarterly.

Sources: National Institute of Economic Research and TNS SIFO Prospera

However, there are many indications that the current significant differences between the two sources are temporary. The National Accounts' measure of wage increases was unusually depressed last year, probably due to factors such as cancelled or reduced bonuses and other taxable benefits, as well as the occurrence of unpaid overtime.¹² These factors are not included in the short-term wage statistics. There are many indications that the increase in the wage statistics from the National Accounts is a rebound from temporarily depressed levels. It is therefore assessed that the short-term wage statistics currently provide a better picture of the underlying development of wages.

The assessment in the short-term wage statistics is that wages, including retroactive wage payments, throughout the economy will increase by 2.5 per cent during the first quarter of this year (see Figure 3:24). Wages in the construction sector have increased more than in the industrial sector and in the service sector (see Figure 3:25). Both the Business Tendency Survey of the National Institute of Economic Research and the Riksbank's company interviews also indicate an increased labour shortage in this sector.

■ ■ Unit labour costs falling less than expected

According to the National Accounts, productivity increased in the first quarter more than labour costs and unit labour costs thus fell by approximately 0.5 per cent measured as an annual percentage change. However, in the April Monetary Policy Update it was assessed that these costs would fall more during the first quarter of this year. The fact that this did not happen is mainly due to the rebound in the National Accounts' measure of labour costs. The assessment now is that unit labour costs will be higher in the remaining quarters of 2011 than was previously predicted.

■ ■ Rising inflation expectations in the short term

Inflation expectations have risen recently but are well-anchored close to the inflation target in the longer term. Prospera's quarterly survey of all the participants, which was published in June, shows that inflation expectations increased from 2.5 to 2.7 per cent one year ahead and from 2.5 to 2.6 per cent two years ahead (see Figure 3:26). On the other hand, the outcome for five-year inflation expectations was only marginally higher. The increase in inflation expectations one and two years ahead probably relates to the increase in CPI inflation, see the discussion in the article "Recent developments in inflation expectations" in this Report.

¹² The short-term wage statistics are based on a sample survey in the private sector and a census survey in the public sector. The hourly wages presented in the National Accounts are based on statistics on wage sums and hours worked. This measure also includes changes in employers' contributions. In the short-term wage statistics, retro-active wage payments are allocated to the month to which the retroactive sum relates. No such allocation takes place in the National Accounts' measure of hourly wages. Hourly wages as used in the National Accounts is also a broader measure that includes for example bonuses and other temporary forms of remuneration, see also Chapter 3 in the 2010 annual report of the Mediation Institute, "Collective bargaining and wage formation 2010".

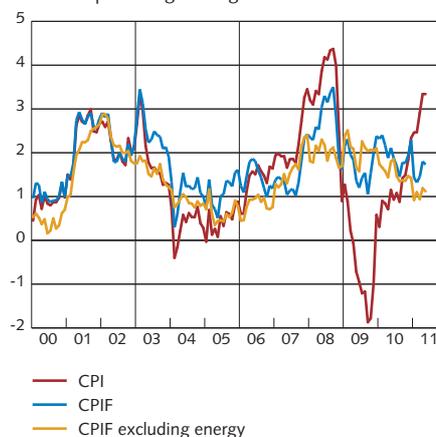
It is fairly clear that short-term inflation expectations are increasing. This is underlined in the measure of household inflation expectations one year ahead of the National Institute of Economic Research, which increased from 3.1 per cent in May to 3.3 per cent in June (see Figure 3:27).

■ ■ Unchanged picture of Swedish inflation

CPI inflation was 3.3 per cent in May (see Figure 3:28). There is now a significant difference between different measures of inflation, which is mainly due to the fact that CPI inflation is affected by rising mortgage rates. Repo-rate increases, higher funding costs and increased margins have led to rising mortgage rates. As mortgage rates affect the CPI with a considerable time lag, this means that CPI inflation will increase further in the period ahead.¹³ The annual rate of increase in the CPIF, that is the CPI calculated using a constant mortgage rate, was much lower and reached 1.7 per cent in May. This is completely in line with the forecast in the most recent Monetary Policy Update.

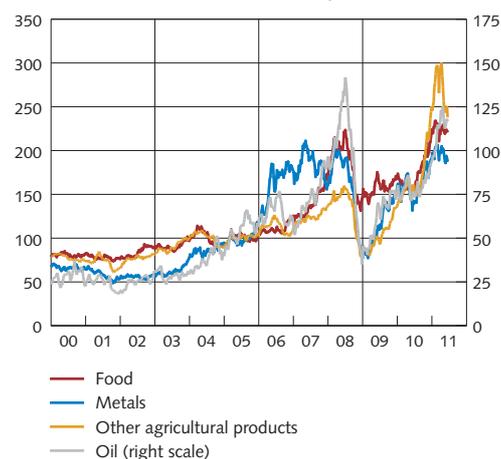
Commodity prices, which had previously been pushed up to high levels, have fallen recently (see Figure 3:29). Food prices as well as the prices of other agricultural goods have fallen. Energy prices have also fallen, but are still higher than they were a year ago. This means that the twelve-month figures for energy prices are still rising. When these are excluded, CPIF inflation amounted to a moderate 1.1 per cent in May. Underlying inflation is thus relatively low. The krona is also stronger than it was a year ago. This is holding back imported inflation, which is an additional contributing factor to the low level of underlying inflation.

Figure 3:28. CPI, CPIF and CPIF excluding energy
Annual percentage change



Source: Statistics Sweden

Figure 3:29. Commodity prices
Index, 2005 = 100, USD and USD per barrel

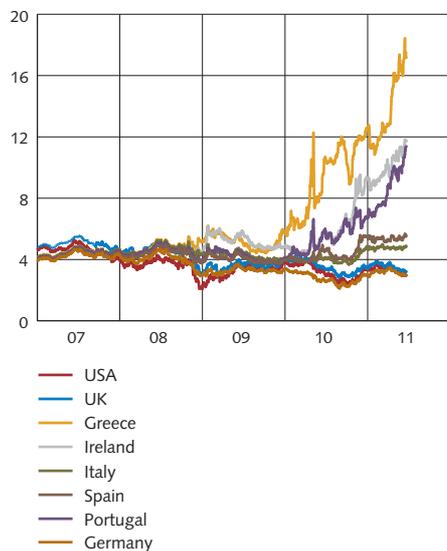


Sources: The Economist and IntercontinentalExchange

¹³ See the discussion in J. Johansson, S. Palmqvist and C. Selander, "The CPI will increase more rapidly than the CPIF over the next few years", *Economic Commentary* no. 5, 2011, Sveriges Riksbank.

■ The sustainable development of public debt?

Figure A1. Government bond rates, 10 years to maturity
Per cent



Source: Reuters EcoWin

The fiscal situation in a number of countries gives great cause for concern. Considerable budget deficits over several years, a development that was accentuated during the financial crisis, have led to the build-up of large and growing debts. The development of debt in several countries has been deemed to be so problematic that it has become impossible for these countries to borrow on the market and acute support measures from the EU and IMF have thus become necessary. However, these support measures, like debt write-offs and other measures aimed at dealing with the acute problems, cannot achieve the long-term sustainable development of debt. For this, structural and institutional reforms to improve long-term growth and fiscal discipline will be needed.

By the end of 2009, market participants had already started to become concerned over the ability of several heavily-indebted European countries to repay their debts. This was reflected in the interest rates for these countries' government bonds (see Figure A1). In an attempt to stabilise developments, Ireland, Greece and Portugal were granted economic support from the EU and IMF in 2010 and 2011.¹⁴

During the spring, difficulties in implementing the tighter policies required by the support programmes have become increasingly apparent. Extensive protests and governmental crises have taken place in several countries, including Greece. The country's inability to comply with the conditions for the support programme has led to new support payments being questioned, and the risk that Greece will shortly default on its payments has increased.

At present, the market pricing of certain euro area countries' government bonds reflects the relatively high likelihood that these countries will have to renegotiate their debts. The main factor affecting a country's ability to fulfil its debt commitments is its ability to pay the interest on its public debt.

Interest rates, growth and the primary balance determine the development of debt

The development of a country's debt can be expressed as

$$D_t = (1+r_t)D_{t-1} - P_t \quad (1)$$

in which D_t is debt¹⁵, r_t is interest and P_t is the primary balance (that is, the difference between revenue and all expenditure except for interest rate payments). In other words, the debt will grow as long as the country's interest expenditure is higher than its primary balance. If we divide equation (1) by GDP and subtract the the preceeding year's debt ratio d_{t-1} the change in the debt ratio from one year to the next can be expressed as

$$\Delta d_t = \lambda_t d_{t-1} - p_t \quad (2)$$

¹⁴ See also the Financial Stability Report 2011:1, Sveriges Riksbank.

¹⁵ This refers to gross debt, that is all debts requiring interest payments and amortisations.

in which $\lambda_t = (r_t - g_t)/(1+g_t)$ can be called the interest-growth differential.¹⁶ From this, it can be seen that if the average interest that a country needs to pay on its public debt exceeds the growth rate (g) in its economy, that country will need to have a positive primary balance to prevent its debt ratio from increasing.

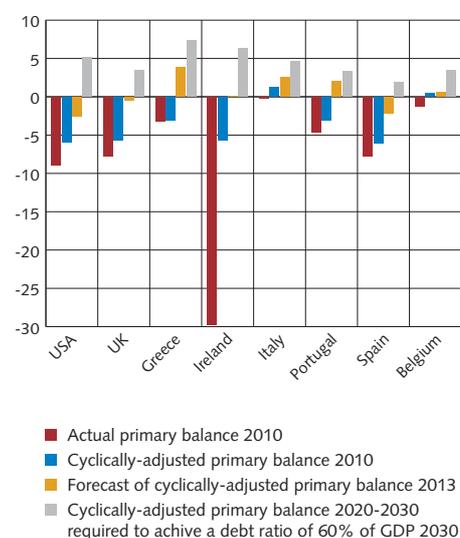
In the developed economies¹⁷ the average difference between the interest rate and GDP growth was 1.6 percentage points between 1981 and 2008, but there has been great variation both over time and between countries.¹⁸ The interest-growth differential tends to be greater when public debt is higher. This can be explained by a higher public debt tending to lead to higher long-term interest rates and lower growth due to increased vulnerability to future crises, increased risk for future inflation and debt write-offs, increased uncertainty over future developments and a higher expected tax levy on return from investments. Estimates indicate that the interest-growth differential when indebtedness exceeds 90 per cent of GDP is about 2 percentage points higher than it is when indebtedness is between 60 and 90 per cent of GDP.¹⁹

Highly-indebted countries that are forced to pay high interest rates but that do not also have a high level of growth must have a high primary balance merely to be able to stabilise their central government debt as a proportion of GDP. A simple rule of thumb that follows from equation (2) is that, when the debt ratio is 100 per cent, the primary balance needs to be at least as large as the interest-growth differential to prevent the debt ratio from increasing further. The relationships that seems to exist between the level of debt and the interest-growth differential suggests that highly-indebted countries have reason to reduce their indebtedness to avoid even higher interest charges in the future. In most cases, this is because indebtedness has increased strongly in recent years, and because a large part of current interest charges still derive from loans taken when indebtedness (and thus interest rates) was significantly lower.

The sustainable development of debt may require large surpluses for many years

It follows from this reasoning that several countries will need large surpluses in their primary balances for many years if debt write-offs are to be avoided. In regularly updated examples, the IMF shows how much the primary balance needs to be improved for a number of different countries to achieve a public debt ratio of 60 per cent of GDP by 2030.²⁰ The budget consolidation strategy that the IMF uses as a base scenario requires that the primary balance is gradually improved in the years leading up to 2020, a level which is then maintained until 2030.²¹ Figure A2 shows the starting point in 2010, as well as the IMF's

Figure A2. Fiscal tightening requirements
Percentage of GDP



Note. Primary balance = budget balance - net interest income. Cyclically-adjusted primary balance is primary balance adjusted for cyclical factors.

Source: IMF Fiscal Monitor April 2011

¹⁶ The interest growth differential is sometimes also called the growth-adjusted interest rate.

¹⁷ According to the IMF's definition, which is mainly based on countries' GDP per capita, export diversification and degree of integration into the global financial system. For details, see <http://www.imf.org/external/pubs/ft/weo/2007/01/data/groups.htm#cc>.

¹⁸ IMF Fiscal Monitor November 2010.

¹⁹ IMF Fiscal Monitor November 2010.

²⁰ A debt ratio below 60 per cent is considered to be manageable over the long-term for developed economies, and is one of the requirements placed by the EU Stability and Growth Pact on member states.

²¹ IMF Fiscal Monitor April 2011.

forecast for 2013 and the primary balance that must be attained by 2020 under the budget consolidation strategy. The example is based on an interest-growth differential of 1 percentage point for all countries as of 2015, which corresponds approximately to the average for the developed economies since 1991. The difference between the actual and the structural primary balance 2010 is the improvement calculated to follow on automatically from the growth forecasts (in Ireland's case, a significant part of 2010's deficit is due to the capital contributions granted to domestic banks).

Greece, with a public debt ratio of 142 per cent, would need to successfully improve its primary balance as a percentage of GDP by 10 percentage points until 2020, and subsequently maintain a level of about 7.4 per cent. Ireland, which has a lower debt ratio (96 per cent), does not need to reach such a high primary balance as Greece, but has, on the other hand, a total fiscal tightening requirement of just over 12 percentage points, as it is starting from a position with such a high deficit. According to the calculations, Portugal, which also recently became the subject of a support programme, needs to carry out budget tightening exceeding 6 percentage points.

As regards the primary balance that needs to be maintained over the longer term and the total policy tightening required to reach this position, the public finance situation is also very serious in the United States and United Kingdom. However, as they have their own currencies and, particularly in the United States' case, there is a generally attractive market for the country's debt instruments, the risk that these countries will find themselves in an unsustainable financing situation is less serious than it is for the fiscally weak countries of the euro area.

The countries that have not yet had to apply for support have better conditions for attaining the sustainable development of debt

Apart from Greece, Ireland and Portugal, which have already been the subjects of support measures from the EU and IMF, attention has recently been focused on weaknesses in the public finances of Spain and Italy. According to the IMF's example, with a debt ratio of 60 per cent in 2010, Spain would need to improve its primary balance by 8 percentage points to about 2 per cent of GDP, while the corresponding tightening for Italy (with a debt ratio of 119 per cent) would have to amount to just over 3 percentage points to attain a primary balance of close to 5 per cent of GDP.

A few possible obstacles that may prevent the countries in question from being able to live up to the budget consolidation strategies they have undertaken could include a lack of ability to improve the primary balance in the proposed magnitude, the increase of the interest-growth differential beyond the assumed level of 1 percentage point, and the increase of the debt ratio due to support to domestic banks (as in the case of Ireland).

Unlike Portugal, where policy tightening would have to lead to a primary balance that is close to 5 percentage points higher than the

average during the period from the introduction of the single currency to 2007, the primary balance that will need to be attained by Spain and Italy is not entirely outside past experience (see Table A1).

Table A1. Key assumptions for the development of debt
Percentage of GDP unless otherwise specified

	Greece	Ireland	Italy	Portugal	Spain	UK	US
Debt ratio 2010	142	96	119	83	60	77	92
Primary balance 2020–2030 for a debt ratio in 2030 of 60 %	7.4	6.3	4.6	3.3	1.9	3.4	5.1
Average primary balance 2000–2007	-0.1	2.2	2.2	-1.2	2.3	-0.4	-3.1
Increases in pension and healthcare expenditure 2010–2030	3.5	2.0	1.4	4.2	2.1	4.2	6.2
External debt share (percentage of total public debt) 2010	62	59	47	66	50	27	32

Note. The average primary balance refers to the years 2001–2007 for the United States. The external proportion of debt applies to the foreign-based share of the ownership of the country's public debt in the third quarter of 2010. In Greece's case, this refers to the share of marketable bonds, for other countries both marketable and non-marketable bonds.

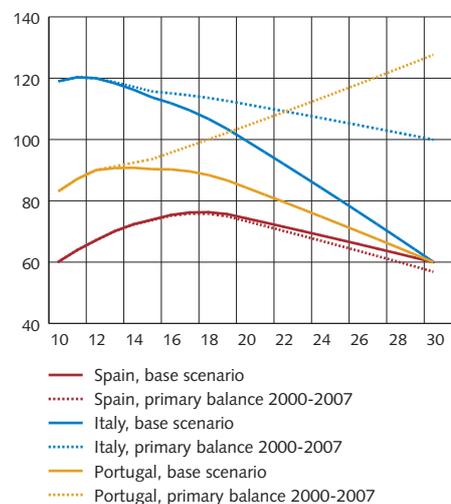
Sources: Joint BIS-IMF-OECD-World Bank External Debt Hub, IMF and the Riksbank

The calculations of the fiscal tightening requirements do not include the increases of pension and healthcare expenditure that can be expected in most developed economies over the decades ahead (see Table A1). Spain and Italy are also in better positions than Portugal in this regard, with differences of between 2 and 3 percentage points in estimated further fiscal tightening requirements.

Figure A3 shows the development of debt for Portugal, Spain and Italy, under the assumptions of the primary balance's development that form the basis of Figure A2, as well as the assumption that only the average primary balance will be achieved during the years 2000–2007 (see Table A1). As a benchmark, Figure A4 shows the corresponding debt development paths for the euro area as a whole, the United States and the United Kingdom. Spain's relatively strong historic primary balance indicates that a return to this level would give a lower debt ratio than in the base scenario, while Italy would have to face a significantly higher debt ratio. However, unlike in Portugal, the primary balances in Spain and Italy are strong enough to stabilise and, in the medium term, reduce the debt ratio from the initial position in 2010.

However, should unease on the financial markets result in a higher interest-growth differential, the sustainability of the development of debt would also be jeopardised in Spain and Italy. This is illustrated in Figure A5, where an interest-growth differential of 3 percentage points, instead of 1 percentage point, is combined with the average primary balance in the period 2000–2007 (see Figure A6 for the equivalent development of the euro area as a whole, the United States and the United Kingdom).

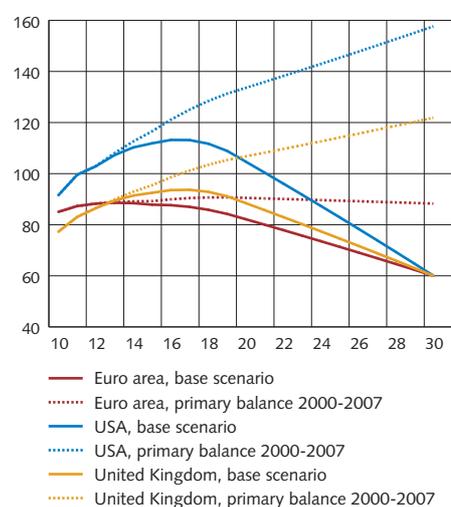
Figure A3. Development of debt with different primary balances
Per cent of GDP



Note. Base scenario according to the IMF's budget consolidation strategy to reach a debt ratio of 60 per cent by 2030. The broken lines represent the debt ratios if the base scenario's assumptions regarding the level of the primary balance to be achieved by 2020 are replaced by the average for 2000–2007.

Sources: The IMF and the Riksbank.

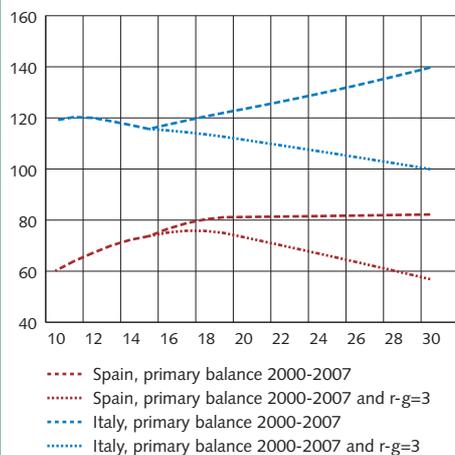
Figure A4. Development of debt with different primary balances
Per cent of GDP



Note. Base scenario according to the IMF's budget consolidation strategy to reach a debt ratio of 60 per cent by 2030. The broken lines represent the debt ratios if the base scenario's assumptions regarding the level of the primary balance to be achieved by 2020 are replaced by the average for 2000–2007.

Sources: The IMF and the Riksbank.

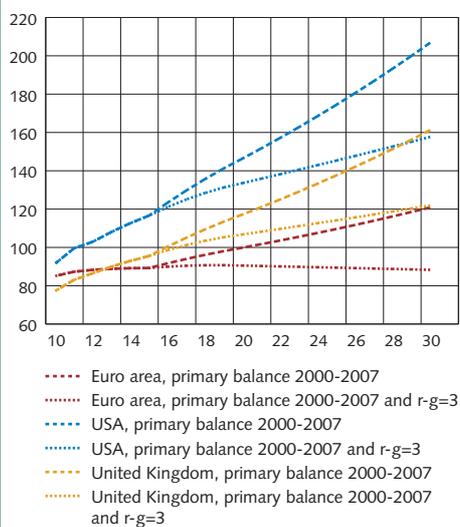
Figure A5. The development of debt with a higher interest-growth differential
Per cent of GDP



Note. The debt ratio of the base scenario's assumption of the level of the primary balance in 2020 is replaced by the average for 2000–2007, together with an interest-growth differential from 2016 of 3 percentage points instead of 1 percentage point.

Sources: The IMF and the Riksbank.

Figure A6. The development of debt with a higher interest-growth differential
Per cent of GDP



Note. The debt ratio of the base scenario's assumption of the level of the primary balance in 2020 is replaced by the average for 2000–2007, together with an interest-growth differential from 2016 of 3 percentage points instead of 1 percentage point.

Sources: The IMF and the Riksbank.

However, there is reason to expect that the interest-growth differential would fall below this high level if a credible budget consolidation strategy could be successfully launched.

At the same time as the tighter policy needed to achieve the sustainable development of debt may decrease borrowing costs and increase efficiency in the use of public resources, these measures may be expected, in the short term, to slow real growth down by restraining domestic demand. An important contribution to real growth would then have to come from exports, and this requires low price increases, which would limit nominal growth. With nominal interest rates that are determined by circumstances in the euro area as a whole, in addition to risk premiums, this would thus lead to the risk of a relatively large interest-growth differential. This should have a greater impact on countries with higher initial debts, that is a greater impact on Italy than on Portugal, and least on Spain, which has a more modest initial debt ratio.

For export-led growth to contribute to a low interest-growth differential, the fiscally weak countries of the euro area need to reverse the negative trend in competitiveness as regards other euro area countries, as shown by the development of unit labour costs (see Figure A7). As yet, such a reversal can only be seen in Ireland and, to some extent, in Spain.

In the political considerations that determine whether an indebted country moves towards debt write-offs of some kind, the proportion of the public debt held outside the country can also play a role. The higher this external indebtedness is, the lower the proportion of the direct capital and interest income losses that would impact that country's voters in the event of a debt write-off.²² In comparison, those countries that already have support programmes stand out with their relatively high proportions of external debt (see Table A1). The external proportion of debt in Portugal, Ireland and Greece is about 60 per cent or more, while it is just below 50 per cent in Spain and Italy and even lower in the United Kingdom and United States.

To sum up, a number of important differences between the countries that have so far had to apply for support from the EU and IMF and other countries with fiscal problems argue against a widening of the group of countries requiring assistance. For Spain and Italy, a return to the average primary balance for the period from the introduction of the euro to the year before the financial crisis would be enough to make their debt ratios start to decrease, while, for Portugal, this would mean that the debt ratio would continue to rise.²³ The expected increases of pension and healthcare expenditure in the decades ahead are also significantly smaller in Spain and Italy.

All in all, there are thus slightly better conditions for Spain and Italy to manage the development of debt than there are in the countries that have already had to apply for support from the EU and IMF. However, the

22 D. Gros, "External versus domestic debt in the euro crisis", Policy Brief nr 243, Centre for European Policy Studies, 2011.

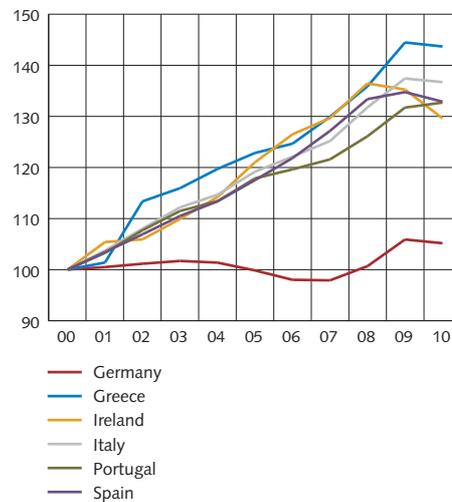
23 However, for Spain and Italy, a return to a primary balance equivalent to the levels seen in 2000–2007 would not be enough to comply with the required level of debt under the growth and stability pact until after 2030.

significance of borrowing costs means that persistent demands for higher interest rates as a result of unease over the sustainability of a country's debt development may become self-fulfilling.

Reforms will be necessary to reduce the risk of future fiscal crises

For those countries that already are or will become subject to debt write-offs, support programmes or other measures, it should be clear that these measures are solely intended to manage the acute problems, and cannot replace the structural and institutional reforms needed to improve long-term growth and fiscal discipline. Only through such reforms will it be possible to reduce the risk of new fiscal crises in the future.

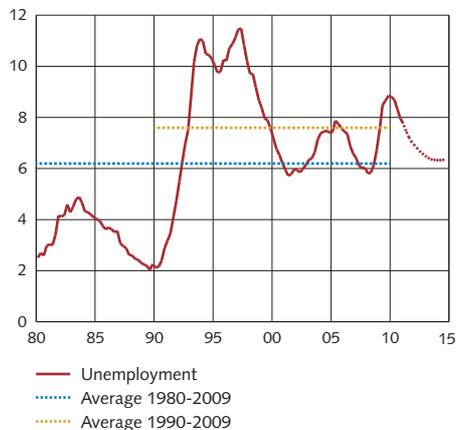
Figure A7. Unit labour costs
Index 2000 = 100



Source: OECD

■ Low unemployment – a challenge

Figure A8. Unemployment
Per cent of labour force, 16-64 age group



Note. Pre-1987 data has been spliced by the Riksbank.
Sources: Statistics Sweden and the Riksbank

The rate of unemployment varies with the level of demand in the economy, but even in balanced economic cycles there is still a certain amount of unemployment. The lower this so-called sustainable rate of unemployment is, the better the situation is from a welfare point of view. Monetary policy is not able to improve the functioning of the labour market in order to reduce the sustainable rate of unemployment, nor is this the task of monetary policy. However, the Riksbank's efforts to keep inflation close to the target of 2 per cent are made easier when the labour market works well. When deciding on the form of monetary policy, it is development in the years immediately ahead that is of decisive importance. The Riksbank's assessment is that achieving an unemployment rate below 6 per cent within the next four years is a challenge that places high demands on the education, training and competence of the unemployed, as well as on matching on the labour market and on wage formation.

The labour market is important to the formulation of monetary policy for several reasons. The situation on the labour market is an important indicator of inflationary pressures in the economy as the development of employment and unemployment affects wage formation and thus inflation too. However, the labour market is also an important factor in the assessment of resource utilisation in the economy; that is how the actual development of the economy relates to what can be regarded as sustainable.²⁴ The Swedish labour market coped relatively well when the Swedish economy was hit by the international financial crisis, both in terms of how the labour market is usually affected by a fall in GDP and in comparison with what happened in other countries.²⁵ Unemployment increased less than expected and has been falling for more than a year now. In May it amounted to 7.7 per cent.

The lower unemployment becomes, the greater the level of interest in how much spare capacity there is on the labour market. How far can unemployment fall before bottlenecks arise that push up inflation and wages?

Since the crisis of the 1990s, when unemployment in Sweden increased by 9 percentage points – from 2 to 11 per cent – unemployment has never been lower than just under 6 per cent, despite periods of very strong growth and high levels of activity in the Swedish economy. The fact that unemployment has not fallen back to the levels that prevailed before the crisis of the 1990s has been interpreted by many observers to mean that unemployment has become permanently established at a higher level. Over the last 30 years, unemployment has averaged 6.2 per cent, and over the last 20 years it has averaged 7.6 per cent. The Riksbank's assessment is that unemployment will continue to fall and that it will stabilise at a rate of just over 6 per cent during the years ahead (see Figure A8).

²⁴ See "Monetary Policy in Sweden" (2010).

²⁵ See for example the article "The effects of the financial crisis on the labour market – a comparison of Sweden, the euro area and the United States", Monetary Policy Report February 2010 and "The relationship between the business cycle and the labour market in Sweden", Economic Commentary no. 2/2010.

Improved preconditions for an effective labour market

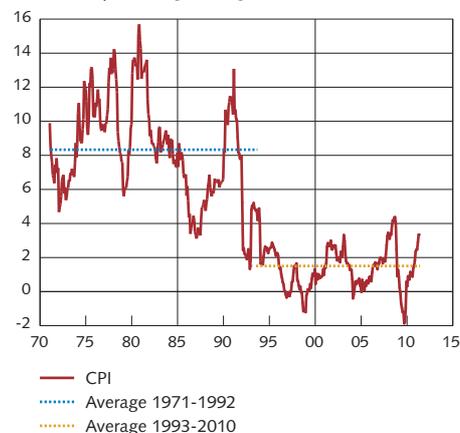
In the Spring Budget Bill, the Ministry of Finance presented its assessment that unemployment could potentially fall to approximately 5 per cent by 2015.²⁶ During the 1980s, unemployment varied between 2 and 5 per cent. Towards the end of the 1980s, however, it became increasingly apparent that the labour market was overheated and during the crisis in the early 1990s unemployment also increased sharply and averaged over 10 per cent between 1993 and 1997.

A lot of things have changed in the Swedish economy since the 1980s, changes that all in all can be said to have improved the preconditions for an effective labour market. Following the crisis years of the early 1990s, fiscal policy was reformed with the aim of strengthening the budget process and enabling a sustainable economic policy.²⁷ The preconditions for Swedish *monetary policy* were also fundamentally changed at the beginning of the 1990s when the fixed exchange rate was abandoned and monetary policy was instead aimed at achieving price stability. Inflation has been well anchored around the inflation target since 1993, at the same time as economic growth has been higher than during the 1970s and 1980s (see Figure A9 and Figure A10).

Since the second half of the 1990s, *wage formation* has also functioned much better than in previous decades. The so-called Industrial Agreement was signed in reaction to the too high wage increases in the round of collective bargaining conducted in 1995. This agreement entails coordinated wage negotiations, sector by sector, in which the social partners in the manufacturing industry are the first to sign collective agreements. The levels agreed in the manufacturing industry then act as a norm for the other contractual areas. One aim of this procedure is to create better preconditions for a balanced development of the economy with stable increases in real wages. Since 1995, real wage increases have also been much higher than was the case in the 1980s (see Figure A11).

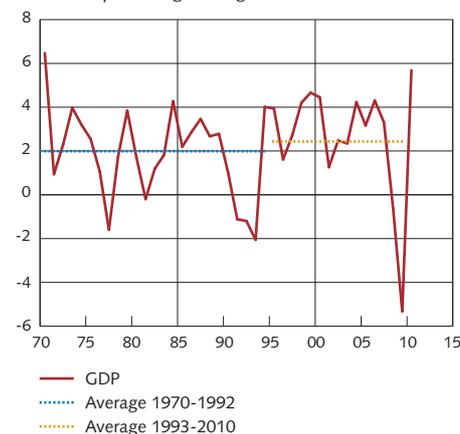
Economic-policy reforms have also been implemented that have increased incentives to participate in the labour market. The pension system has been reformed, benefit levels in the social insurance schemes have been reduced and incomes taxes for those in gainful employment have been lowered. All-in all, rather far reaching improvements of the preconditions for an effective labour market have thus been made. This has also led to a lower average unemployment rate than during the mid-1990s. However, the rate is still well above 5 per cent. The government's forecast that unemployment will fall to 5 per cent is mainly based on the assessment that the reforms implemented by the government since 2006 will have a major impact on unemployment.

Figure A9. CPI
Annual percentage change



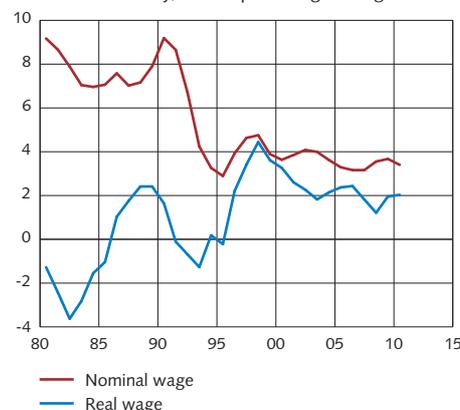
Source: Statistics Sweden

Figure A10. GDP
Annual percentage change



Source: Statistics Sweden

Figure A11. Wages
Whole economy, annual percentage change



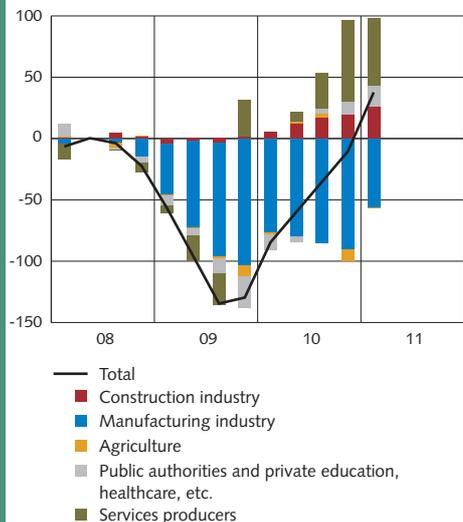
Note. Three-year moving average. CPI-deflated real wages. Data to year-end 1992 refers to wage structure statistics, after that short-term wage statistics.

Sources: National Mediation Office, Statistics Sweden and the Riksbank

²⁶ See the 2011 Spring Budget Bill "Responsibility for jobs" 2010/11:100. The government speaks in terms of equilibrium unemployment, where equilibrium relates to a situation when all temporary disruptions in the economy have waned.

²⁷ In a sustainable fiscal policy, temporary deficits are not allowed to become permanent and lead to the uncontrolled growth of central government debt. The framework should also prevent fiscal policy from accentuating fluctuations in economic activity.

Figure A12. Employment in different sectors
Changes compared with second quarter 2008,
thousands, seasonally-adjusted data



Sources: Statistics Sweden and the Riksbank

What is required of supply and demand? Two illustrative calculations

On a perfect market, the price always adjusts so that demand is equal to supply at any one point in time. The labour market is not a perfect market partly because there is friction.²⁸ This friction means that there will always be a certain rate of unemployment, but how high or low this rate may vary depending, for example, on the efficiency of matching and the rate of change in the economy. The factor that determines the rate of unemployment is thus the balance between supply and demand. One way of assessing whether an unemployment rate of 5 per cent is reasonable is to look more closely at what is required of supply and demand to meet this rate. Two calculations are presented in the two sections below with the aim of illustrating this.

In what sectors will employment grow?

The international financial crisis that hit the Swedish economy in 2008-2009 led to the loss of approximately 140 000 jobs. Following the economic recovery, however, more than this number of jobs has now been regained. However there are considerable differences between different sectors (see Figure A12). It was mainly the manufacturing industry that was hit by the downturn and only half of the jobs lost in this sector have been regained.²⁹ In the construction sector and the sectors for corporate and household services, on the other hand, employment has grown compared to the pre-crisis levels.

An ongoing process of structural transformation is a natural element of an economy in which less efficient operations are replaced by new, more efficient operations. It is also natural that a structural transformation process accelerates in times of crisis. The content of household demand changes over time, in parallel with increased globalisation, specialisation and technological development. This means that some of the existing jobs are lost while other, new jobs are created. In Sweden, as in many other countries, there has been a declining trend in industrial employment over time and new service companies have emerged instead.

If the labour force grows by almost 160,000 individuals between 2010 and 2015, an unemployment rate of 5 per cent means that employment must increase by almost 320,000 individuals during the same period.³⁰ This is almost 130,000 more people in employment than in the Riksbank's current forecast.³¹ In this context it is important to point out that the Ministry of Finance's forecast of strong growth in employment is also linked to an assessment of a significantly higher level of potential growth in the Swedish economy in the years ahead than is currently predicted in the Riksbank's forecasts.

²⁸ Friction arises, for example, because it usually takes time for an employer with a vacancy to find someone that is suitable for the job, while it takes time for an unemployed person to find a job that is suitable for them.

²⁹ It now appears that some industrial employment is accounted for by employment agencies to a greater degree. According to the annual report of Swedish Staffing Agencies, the manufacturing industry accounted for 22 per cent of the turnover of the employment agencies in 2010.

³⁰ The assumptions regarding the labour force and employment are based on the Ministry of Finance's assessment in the Spring Budget Bill.

³¹ Note that the Riksbank publishes forecasts for the period up to the end of the third quarter 2014 in this report. After this period it is assumed that the number of those employed and in the labour force will largely remain unchanged.

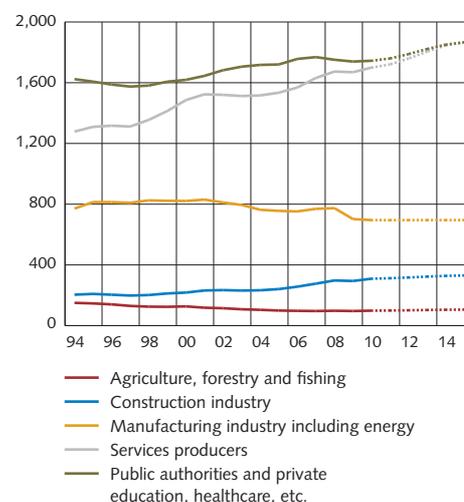
In the calculation it is assumed that the percentage of those employed in agriculture, the construction industry and public authorities will remain constant between 2010 and 2015. This is in line with the historical trends in the respective sectors, with the exception of public authorities.³² It is also assumed that employment in the manufacturing industry will not rise above the level in 2010, which entails a stronger development than the sector's negative historical trend. Under these conditions, employment in the service sector must account for almost 55 per cent of the total increase in employment during the period. This imposes high demands on the growth of employment in the private service sector, where employment must increase by almost 170 000 jobs (see Figure A13).³³ In the long term, the labour force adjusts to changes in demand, but adjustments in the economy take time. It is not self-evident that the service companies will easily be able to recruit the competence they require during the next four years given the expansion in employment that has already occurred in this sector.

What age groups will work more?

The growth and composition of the population play an important role in the growth of the labour supply over time. This is because labour force participation varies considerably from group to group. It is highest in the 25-54 age group (over 89 per cent on average over the last 10 years) and lowest in the youngest and oldest age groups as the percentage of those studying or drawing pensions is high in these groups. Labour market participation fell sharply in the early 1990s, from almost 74 per cent to 70 per cent (see Figure A14). The fact that many people left the labour market at that time is largely explained by the severe crisis. Factors of a more structural nature have, however, contributed to the fact that labour market participation has not recovered since then. It has fallen particularly among the young, which is largely due to the introduction of the three-year upper-secondary school and the expansion of the universities and colleges (see Figure A15). The percentage of full-time students in the population has thus gradually increased, more than is implied by demographic changes. In the older age group (55-74) on the other hand, labour market participation is higher today than it was in 1990 (see Figure A16). Here, the introduction of a new pension system in the 1990s and increased opportunities to continue working over the age of 65 have probably helped to increase the supply of labour.

If the labour force (15-74) grows by almost 160 000 individuals between 2010 and 2015, aggregate labour force participation will increase from 70.7 per cent to 71.2 per cent.³⁴ This is equal to the level reached during the peak periods of economic activity during the 2000s so far (see Figure A14). If employment in the 15-74 age group increases

Figure A13. Employment in different sectors
Thousands



Note. The broken lines represent the Riksbank's projections.

Sources: Statistics Sweden and the Riksbank

Figure A14. Labour force participation and employment rate, 15-74 age group
Per cent of the population



Note. The broken lines represent the Riksbank's projections. Pre-1987 (25-54 years) respective 2001 (15-24 and 55-74 years) data has been spliced by the Riksbank.

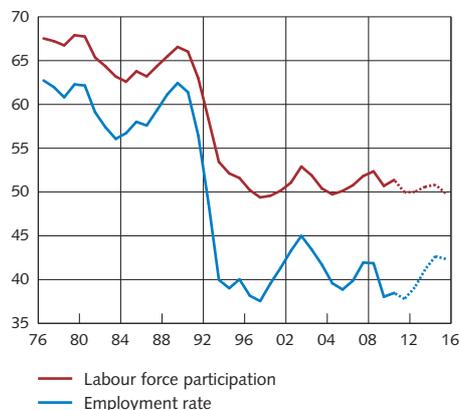
Sources: Statistics Sweden and the Riksbank

³² For this aggregate, a constant employment rate entails employment growing more strongly than the trend. The aggregate for public authorities also includes some employment in private services in fields such as education and healthcare.

³³ Under these assumptions, practically all the increase in employment must take place in the private and public service sectors, where employment must increase by almost 290 000 individuals.

³⁴ The assumptions regarding the labour force and employment are based on the Ministry of Finance's assessment in the Spring Budget Bill.

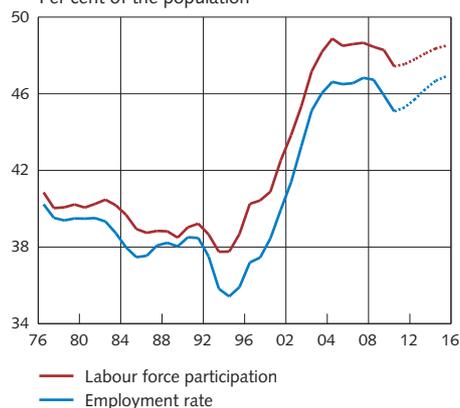
Figure A15. Labour force participation and employment rate, 15-24 age group
Per cent of the population



Note. The broken lines represent the Riksbank's projections. Pre-1987 (25-54 years) respective 2001 (15-24 and 55-74 years) data has been spliced by the Riksbank.

Sources: Statistics Sweden and the Riksbank

Figure A16. Labour force participation and employment rate, 55-74 age group
Per cent of the population



Note. The broken lines represent the Riksbank's projections. Pre-1987 (25-54 years) respective 2001 (15-24 and 55-74 years) data has been spliced by the Riksbank.

Sources: Statistics Sweden and the Riksbank

Figure A17. Labour force participation and employment rate, 25-54 age group
Per cent of the population



Note. The broken lines represent the Riksbank's projections. Pre-1987 (25-54 years) respective 2001 (15-24 and 55-74 years) data has been spliced by the Riksbank.

Sources: Statistics Sweden and the Riksbank

by almost 320 000 between 2010 and 2015, the total employment rate will at the same time increase from 64.7 to 67.6 per cent, which is a higher employment rate than has been measured so far since 1992. In this calculation it is assumed that labour market participation for the 25-54 age group and both labour market participation and the rate of employment for the 55-74 age group develop in line with the historical trend over the last ten years. It is also assumed that the rate of employment for the 25-54 age group develops more strongly than the historical trend (see Figure A17). This means that the rate of unemployment for these age groups will be the lowest since the early 1990s, at 3.8 and 3.3 per cent respectively (see Figure A18). These assumptions must be regarded as relatively optimistic, but nevertheless they show that the demands placed on the development of the employment rate and unemployment for young people are very high. To be more precise, the assumptions mean that the employment rate for the 15-24 age group must increase by almost 4 percentage points (see Figure A15). At the same time, unemployment in this age group must fall by 10 percentage points from approximately 25 per cent to around 15 per cent (see Figure A18).

Low unemployment imposes high demands on the labour market

Structural transformation is basically positive, but a rapid process of structural transformation also creates friction as it takes time for the labour force to adjust to changes in demand. An increase in the supply of labour is also basically positive but, depending on the competitiveness of the new groups on the labour market, the adjustment to a lower level of unemployment can take time. This means that unemployment may be higher during a transitional period. The lower the mobility of the labour force, both geographically and between occupations, the greater the risk that unemployment will remain high for a long period of time.

Effective matching and effective wage formation are preconditions both for achieving high employment and low unemployment in the long term, and to prevent temporary economic disruptions from establishing unemployment at a high level.³⁵ The effectiveness of matching can be illustrated using a so-called Beveridge curve, which shows the relation between job vacancies and unemployment (see Figure A19). A movement along the curve can be interpreted as a change due to the economic situation while an outward shift of the curve indicates that matching is working less effectively. Ineffective matching means that it takes a long time to pair vacancies and the unemployed together and there are thus more vacancies than necessary at any given rate of unemployment. The more south-west the curve lies, the more effective matching is.

Following the crisis of the 1990s the Beveridge curve has shifted outwards, and even more so in recent years. In the recovery phase following a crisis it is not surprising that matching becomes less effective as it takes time for the labour force to adjust to changes in demand.

³⁵ According to the National Institute of Economic Research's 2001 report on wage formation, a sustainable reduction of unemployment to 5 per cent presupposes that increases in hourly wages in the period 2012-2014 do not exceed 3.1 per cent per year.

But it is clear that the Beveridge curve has not managed to shift back inwards over the last 20 years. It thus seems that the higher rate of unemployment since the crisis of the 1990s is not due to too few vacancies but rather to less effective matching on the labour market. This further underlines how much is required with regard to the functioning of the labour market if we are to be able to achieve a low rate of unemployment.

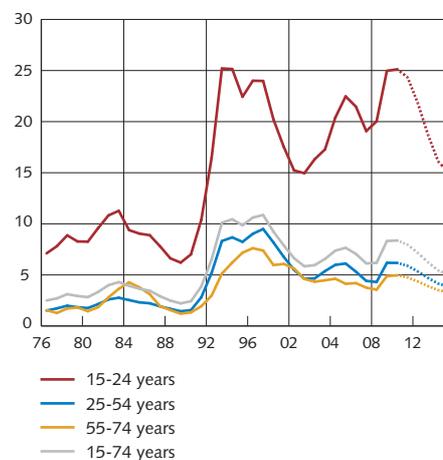
Key factors for better matching and wage formation, and thus lower unemployment, are the training and competence of the unemployed. According to the Swedish Employment Service, the number of people who find it difficult to find work quickly constitutes a larger proportion of job seekers than for a very long time.³⁶ This is partly because immigration has been high in recent years and there is therefore fierce competition for appropriate entry level jobs for immigrants on the Swedish labour market. In addition, many disabled people who are considered able to work to some degree no longer qualify for support in the health insurance scheme and have been transferred to the Swedish Employment Service. The disabled are the group that generally find it most difficult to get jobs, which is reflected in their long periods of unemployment. Another group that experiences considerable problems in gaining a foothold on the labour market is made up of those with a limited education, that is those who have not successfully completed a course at the upper-secondary school level. This is also illustrated by the fact that differences in unemployment rates between those with different levels of education have increased in recent years (see Figure A20). Reforms that improve the level of education, training and competence among those outside the labour market may contribute to better matching and increase the likelihood of people in these groups finding work.

Unemployment important to the Riksbank

The lower the so-called sustainable rate of unemployment is, the better the situation is from a welfare point of view. Put simply, we can say that a low sustainable rate of unemployment means that the labour market is functioning well, while a high sustainable rate of unemployment means that the labour market is functioning less well. Monetary policy is not able to improve the functioning of the labour market, nor is this the task of monetary policy, but the Riksbank's efforts to keep inflation close to the target of 2 per cent are made easier the better the labour market works. A point that illustrates the limited potential of monetary policy to influence unemployment is that there are significant differences between the rates of unemployment in the countries in the euro area, even though this area is covered by a common monetary policy (see Figure A21). In order to permanently reduce unemployment, reforms that affect the functioning of the labour market are required instead.

³⁶ See for example the Employment service's report "Labour Market Prospects", spring 2011. The number of people out of work in vulnerable groups has almost doubled in two years. This is almost 60 per cent of all those unemployed, including participants in labour market policy programmes.

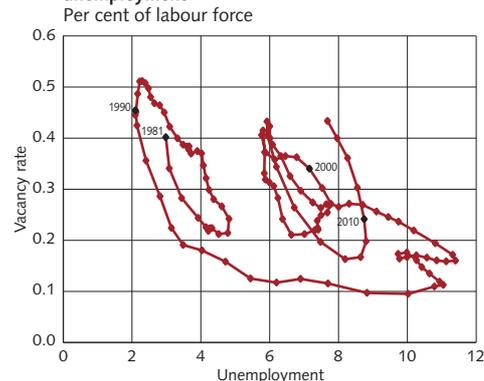
Figure A18. Unemployment
Per cent of labour force



Note. The broken lines represent the Riksbank's projections. Pre-1987 (25-54 years) respective 2001 (15-24 and 55-74 years) data has been spliced by the Riksbank.

Sources: Statistics Sweden and the Riksbank

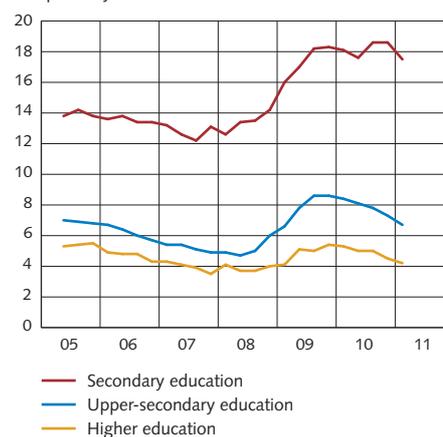
Figure A19. Relationship between vacancies and unemployment
Per cent of labour force



Note. Vacancy data according to Statistics Sweden has been written back with the aid of statistics from the Swedish Public Employment Service for the period 1981-2000.

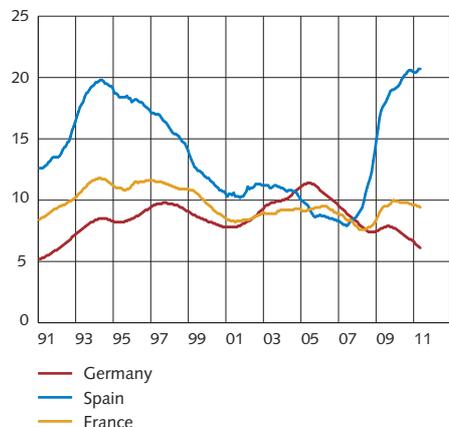
Sources: Employment Service, Statistics Sweden and the Riksbank

Figure A20. Unemployment, 15-74 age group per educational level
Percentage of the labour force, seasonally-adjusted quarterly data



Source: Statistics Sweden

Figure A21. Unemployment in different countries
Per cent of labour force



Source: Eurostat

Most observers agree that the economic policy reforms of recent years may encourage participation in the labour market and increase the employment rate in the long term. However, we know very little about how much, or how long the adjustment to a new sustainable rate will take. The Riksbank's task is to stabilise inflation close to the target of 2 per cent. As it takes a long time before monetary policy has a full impact on inflation and the real economy, monetary policy is guided by forecasts of economic development. The development of the labour market in the years immediately ahead is of great importance for these forecasts and for analyses of inflationary pressures. It is therefore important that the Riksbank continually checks current developments on the labour market against several types of indicator, for example by measuring how well matching and wage formation are working.

The Riksbank's assessment is that achieving an unemployment rate below 6 per cent within the next four years is a challenge that places high demands on the education, training and competence of the unemployed, as well as on matching on the labour market and on wage formation.

■ Recent developments in inflation expectations

As CPI inflation has been rising since the end of 2009, various different measures of inflation expectations have also moved upwards. Short-term inflation expectations tend to covary with current inflation. Long-term inflation expectations are generally anchored around the inflation target, but these have also shown a slight rise recently. However, this need not mean that confidence in the inflation target has declined; it may instead be related to mortgage rates. CPI inflation is strongly impacted by developments in mortgage rates and these have recently risen from very low levels. As the rates for fixed-term mortgages with longer terms are also rising, it will take some time before CPI inflation returns to the inflation target. Inflation expectations now appear to be well in line with the Riksbank's forecasts for CPI inflation, which indicates that inflation expectations are not a problem in themselves. But the currently high CPI inflation may affect various agents' long-term inflation expectations and also wage formation. The Riksbank needs to follow these developments closely.

Inflation expectations are important for monetary policy

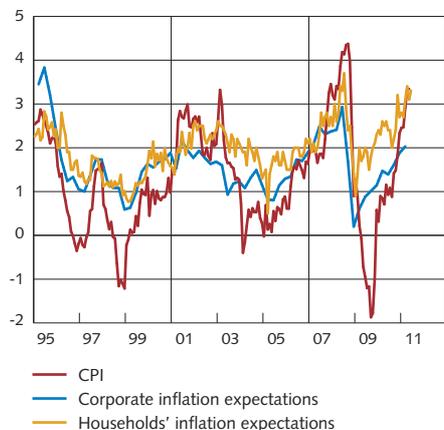
Various agents' expectations of future inflation are very important for monetary policy with an inflation target. If everyone believes that the Riksbank will bring inflation back on target within a few years' time, this will affect pricing and wage formation in a way that makes it easier to attain the inflation target.

Long-term inflation expectations thus measure confidence in the inflation target. If confidence in the inflation target is high, we do not need to conduct such aggressive monetary policy when inflation deviates from the target. However, it is not possible to directly observe inflation expectations; they must be estimated on the basis of various indicators such as surveys, the pricing of financial instruments, or forecasts made by various agents. All of these indicators of inflation expectations have advantages and disadvantages.

Inflation expectations can be estimated using surveys, financial instruments or inflation forecasts

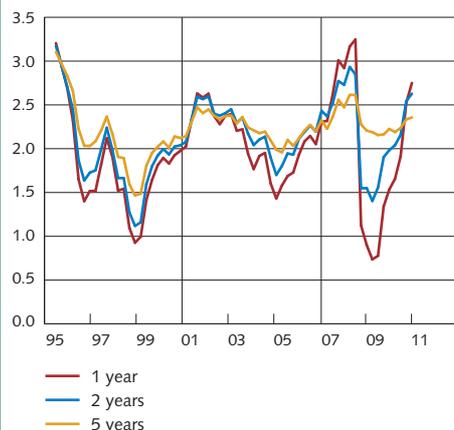
Surveys involve asking various agents what they believe inflation will be one, two and five years' ahead. The responses are then weighted together to produce a figure reflecting the group's, for example households' or companies', inflation expectations within the relevant time horizon. However, the exact questions asked differ from survey to survey. The National Institute of Economic Research's surveys, Business and Consumer Economic Tendency Surveys, ask questions about developments in "prices in general", while Prospera's surveys ask more specifically about future developments in the CPI. One advantage of survey-based measures of inflation expectations is that the question more directly concerns what one is trying to measure. At the same time, there is reason to believe that the uncertainty in the responses is high, as those questioned do not always have such good knowledge of inflation

Figure A22. Household and corporate inflation expectations one year ahead and the CPI
Annual percentage change



Sources: National Institute of Economic Research and Statistics Sweden

Figure A23. Social partners, purchasing managers and money market agents expectation of inflation 1, 2 and 5 years ahead
Annual percentage change



Note. The responses refer to the average for all respondents.

Source: TNS SIFO Prospera

trends.³⁷ Nevertheless, survey-based measures of inflation expectations appear to agree relatively well with developments in inflation.³⁸

Another means of estimating inflation expectations is via financial instruments, such as the difference between a nominal and a real interest rate with the same maturity. The advantage of this method is that inflation expectations are calculated on the basis of instruments traded on the financial markets. The various agents take their positions on the basis of what they believe will happen in the future and they, unlike those responding to the surveys, could lose money through their actions. One problem with the pricing of financial instruments, however, is that they are also affected by different types of risk premium. This means that the difference between a nominal and a real interest rate cannot necessarily be interpreted as referring to inflation expectations.³⁹

Different forecasters' inflation forecasts can also be regarded as indicators of inflation expectations, as the forecasts are a description of what the forecaster expects future inflation to be. The various forecasters invest considerable resources in making macro economic forecasts and those who make inflation forecasts are often specialists in this particular field. Most forecasters ought to endeavour to achieve as accurate forecasts as possible. But some forecasters may see their forecasts more as interesting scenarios, which they do not actually expect to occur with any great degree of probability.

The three different types of indicator of inflation expectations thus each have their own advantages and disadvantages. And as it is not possible to observe actual inflation expectations, it is not possible to use statistical tests to determine which indicators are best. The Riksbank therefore takes a broad approach in the analysis of inflation expectations, where the different indicators of inflation expectations are analysed and compared. If all of the indicators point in the same direction, it is possible to draw firmer conclusions than if they point in different directions.

Short-term inflation expectations have risen, while long-term expectations are anchored closer to the inflation target

At present, the picture painted by surveys is that inflation expectations have been rising over the past couple of years. This applies in particular to the short-term, one-year expectations (see Figures A22 and A23). Expectations two years ahead have also risen, albeit at a somewhat slower rate. Expectations five years ahead have been anchored in a relatively stable manner around the inflation target, but they have also shown a slight increase recently and are slightly above the inflation target.

³⁷ Bryan and Palmqvist (2005) find that households' inflation expectations tend to be concentrated around a limited number of integers. Around three quarters of all responses since 1991 were comprised of 0, 2 and 5 per cent, which indicates that households assess inflation in rough terms rather than giving precise answers. See M. Bryan and S. Palmqvist, "Testing near-rationality using detailed survey data", Working paper no. 183, Sveriges Riksbank, 2005.

³⁸ See S. Palmqvist and L. Strömberg, "Households' inflation opinions – a tale of two surveys", *Economic Review* 2004:4, Sveriges Riksbank, and T. Jonsson and P. Österholm, "The Properties of Survey-Based Inflation Expectations in Sweden", Working paper no. 114, National Institute of Economic Research, 2009.

³⁹ For example, those who hold a nominal bond may demand compensation for the inflation risk. The markets for real and nominal bonds also have different levels of liquidity. This means that inflation expectations estimated using financial instruments can also contain risk and liquidity premiums, which may be difficult to distinguish from the actual inflation expectations.

Inflation expectations according to the pricing of financial instruments rose from the middle of last year until the publication of the previous Monetary Policy Report, but has since then fallen back and is now close to the inflation target (see Figure A24). As already pointed out, this type of indicator of inflation expectations may also contain risk premiums. The measure tends to vary substantially and should therefore be interpreted with caution.

In general, various forecasters, including the Riksbank, have been making upward revisions to their forecasts for CPI inflation since one year or so ago (see Figure A25). The upward revision primarily refers to short-term inflation, but the slightly longer forecasts have also been revised upwards somewhat.

All in all, the various indicators thus provide a relatively concordant picture. Short-term inflation expectations have risen, while long-term inflation expectations are anchored around the inflation target in a more stable manner.

Short-term inflation expectations covary with current inflation

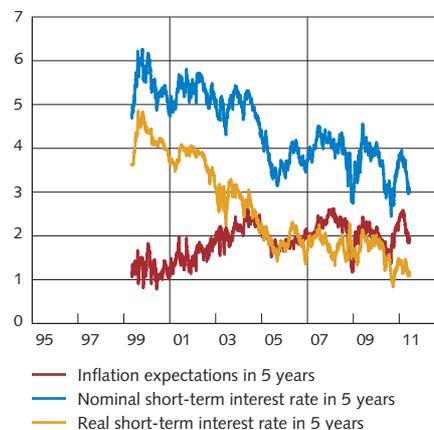
A common method of analysing inflation is to use the Phillips curve, which states that current inflation is determined by inflation expectations and resource utilisation according to

$$\pi_t = \beta E_t \pi_{t+1} + \kappa x_t + \varepsilon_t$$

where π_t is inflation, $E_t \pi_{t+1}$ is today's expectations regarding future inflation, x_t is resource utilisation and ε_t is a shock. Behind this Phillips curve lies an assumption of price rigidities that means that companies are not able to change their prices in each period. As companies do not know when they will be able to change their prices again, they must look ahead and take into account both current and expected resource utilisation when pricing. Inflation is therefore determined by the expected development of resource utilisation. As this relationship will also apply in the future, and all agents are assumed to have rational expectations, today's inflation expectations will reflect the expected future resource utilisation, which means we can describe inflation in accordance with the Phillips curve above. This theory says that there is a strong link between inflation expectations and actual inflation. If inflation expectations rise, observed inflation also tends to rise. Correspondingly, falling inflation expectations lead to a decrease in today's inflation. Put another way, we should expect a positive correlation between short-term inflation expectations and current inflation, something that is confirmed by the data (see Figure A22).⁴⁰

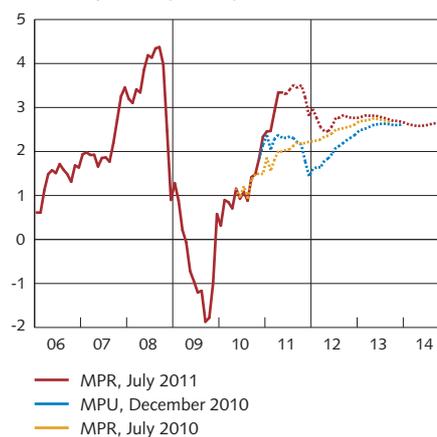
Even if the short-term inflation expectations vary in line with current inflation, long-term inflation expectations have been anchored in a more stable manner around the inflation target. This can be regarded as a sign that confidence in the Riksbank's inflation target is generally

Figure A24. Inflation expectations estimated using financial instruments
Annual percentage change



Source: The Riksbank

Figure A25. The Riksbank's CPI forecasts
Annual percentage change



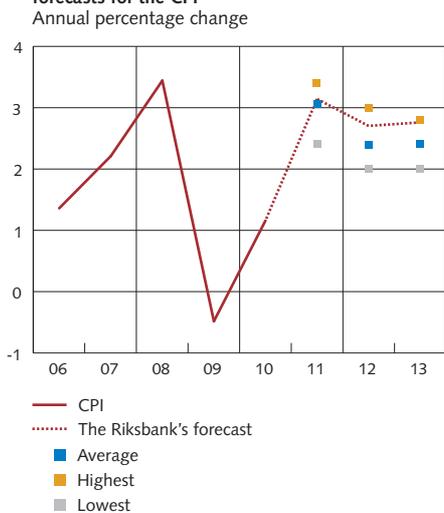
Sources: Statistics Sweden and the Riksbank

⁴⁰ The correlation between households' inflation expectations and current inflation is 0.62. The corresponding correlation for companies' inflation expectations is 0.75 and for all respondents in the Prospera survey the figure is 0.77.

Figure A26. CPI and CPIF, forecasts and projections

Note. The ordinary forecast period runs to the vertical line at September 2014. Beyond the forecast horizon it is assumed that the CPIF will increase by 2 per cent and that the repo rate will gradually move to 4 per cent.

Sources: Statistics Sweden and the Riksbank

Figure A27. The Riksbank's and other forecasters' forecasts for the CPI

Note. The figure shows the annual average for the CPI. The points show the highest, lowest and average of the forecasts of nine different forecasters. For 2013 there are only two forecasts to compare with.

Sources: Statistics Sweden, the respective forecasters and the Riksbank

high. Recently, however, long-term inflation expectations have also risen slightly. But this need not be a sign that confidence in the inflation target has declined, as the expected interest rate development means that CPI inflation in the main scenario is assumed to overshoot the target over a long period.

When the Riksbank makes a decision on the path for the repo rate, we normally try to attain a balance between on the one hand stabilising inflation around the inflation target and on the other hand stabilising the real economy. There is no general answer to the question of how quickly the Riksbank tries to bring inflation back to 2 per cent if it deviates from the target. Usually, however, the Riksbank endeavours 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. At present, developments in inflation are divided. CPIF inflation (the CPI with a fixed mortgage rate) is expected to be relatively low, and then gradually approach the inflation target during the forecast period. At the same time, CPI inflation is expected to continue rising over the year and then to gradually fall back (see Figure A:26). The main reason why these two measures are developing so differently is that households' mortgage rates have risen from very low levels and are expected to continue rising. As mortgage rates with long fixed terms also rise, the difference between the CPI and the CPIF is expected to remain at the end of the ordinary forecast period and it is not until 2016 that the two measures are expected to coincide once again.⁴¹

The Riksbank's forecasts for CPI inflation are thus strongly influenced by developments in mortgage rates. Other analysts' forecasts are also similar to the Riksbank's (see Figure A:27). CPI inflation is expected to be high during 2011 and then to fall back. Inflation expectations according to surveys also correspond well with the Riksbank's forecast (see Figure A:28). There is thus reason to believe that the upturn in mortgage rates with long fixed terms is behind not only the upward revision in the Riksbank's inflation forecasts in the longer run, but also the upturn in the more long-term inflation expectations. It is important to point out that this reflects an assumption that it will take rather a long time before the effects of rising mortgage rates have subsided and that this has nothing to do with confidence in the inflation target.

But there are risks ahead

Although inflation expectations in themselves need not cause any problems at present, there are some risks involved. Normally, short-term inflation expectations covary with actual inflation. There are also signs that even long-term inflation expectations tend to covary with actual

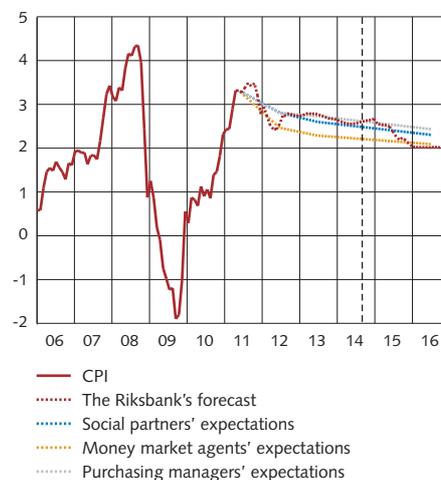
⁴¹ The Riksbank's forecasts only extend three years ahead. To gain an idea of what will happen beyond the ordinary forecast horizon, an automatic forward projection is made, see J. Johansson, S. Palmqvist and C. Selander, "The CPI will increase more rapidly than the CPIF over the next few years", *Economic Commentaries* no. 5, 2011, Sveriges Riksbank.

inflation.⁴² While such relationships are compatible with the assumption of rationality behind the Phillips curve, where rising resource utilisation explains the upturn in both actual and expected inflation, it may also be the case that expectations are not rational; they are to a large degree governed by backward-looking behaviour.

One risk in the current situation is that the higher inflation will have a more tangible – and unwarranted – impact on long-term inflation expectations and wage formation. Then wages could increase more quickly than is justified by the economic situation, which could in turn lead to an unexpected increase in underlying inflation. If this were to happen, we might experience a situation where the Riksbank is forced to raise the repo rate more quickly than in the main scenario. This is discussed in the scenario “Higher wages” in Chapter 2.

According to the Riksbank's forecast, CPI inflation will be high during 2011 in particular, and will then gradually fall back towards the inflation target as the upswing in mortgage rates with longer fixed terms disappears from the twelve-month CPI figures. It is important to check this forecast against developments in various indicators of inflation expectations. If the different indicators paint the same picture, which systematically and permanently deviates from the Riksbank's forecast, then the Riksbank's forecasts and repo rate decisions might also be affected.

Figure A28. The Riksbank's forecasts for the CPI and inflation expectations according to the social partners, purchasing managers and money market agents
Annual percentage change



Note. The ordinary forecast period runs to the vertical line at September 2014. Beyond the forecast horizon it is assumed that the CPIIF will increase by 2 per cent and that the repo rate will gradually move to 4 per cent.

Sources: Statistics Sweden, TNS SIFO Prospera and the Riksbank

⁴² Jonsson and Österholm (2009) note that 5-year inflation expectations tend to rise by around 0.1 of a percentage point when actual inflation rises by 1 percentage point, see T. Jonsson and P. Österholm, “The Properties of Survey-Based Inflation Expectations in Sweden”, Working paper no. 114, National Institute of Economic Research, (2009). However, Jonsson and Österholm do not distinguish between an inflation upswing that is expected and one that is unexpected. As an upswing in inflation in the near future appears to be expected by most agents, it is not certain that it will lead to a further upswing in long-term inflation expectations.

■ Appendix

- Tables
- Outline of articles published 2008–2011
- Previous interest rate decisions
- Glossary

Tables

The figures in parentheses show the forecast in the previous Monetary Policy Update (April 2011).

Table 1. Repo rate forecast

Per cent, quarterly average values

	Q2 2011	Q3 2011	Q4 2011	Q3 2012	Q3 2013	Q3 2014
Repo rate	1.7 (1.7)	2.0 (2.0)	2.3 (2.2)	2.9 (2.9)	3.4 (3.4)	3.8

Source: The Riksbank

Table 2. Inflation, annual average

Annual percentage change

	2010	2011	2012	2013
CPI	1.2 (1.2)	3.1 (3.2)	2.7 (2.8)	2.8 (2.7)
CPIF	2.0 (2.0)	1.6 (1.6)	1.7 (1.7)	2.1 (2.0)
CPIF excl. energy	1.5 (1.5)	1.1 (1.1)	1.8 (1.7)	2.1 (2.1)
HICP	1.9 (1.9)	1.6 (1.7)	1.7 (1.7)	2.0 (2.0)

Note. The rate of change in the CPI is based on revised index figures, which may differ from the established index figures. CPIF is the CPI with fixed interest rate. CPIF is CPI with fixed interest rate.

HICP is an EU harmonised index of consumer prices.

Sources: Statistics Sweden and the Riksbank

Table 3. Summary of financial forecasts

Annual average, per cent, unless otherwise stated

	2010	2011	2012	2013
Repo rate	0.5 (0.5)	1.8 (1.8)	2.8 (2.8)	3.4 (3.4)
10-year rate	2.8 (2.8)	3.2 (3.5)	3.8 (4.1)	4.3 (4.5)
Exchange rate, TCW-index, 18 November 1992=100	129.3 (129.3)	120.8 (119.6)	120.2 (120.1)	120.2 (121.1)
General government net lending*	-0.2 (-0.3)	0.9 (1.0)	1.2 (1.4)	1.4 (1.5)

* Per cent of GDP

Sources: Statistics Sweden and the Riksbank

Table 4. International conditions

Annual percentage change, unless otherwise stated

GDP	2010	2011	2012	2013
Euro area (0,14)	1.7 (1.7)	1.9 (1.5)	1.6 (1.6)	2.2 (2.3)
USA (0,20)	2.9 (2.9)	2.3 (2.8)	2.7 (3.0)	3.2 (2.8)
Japan (0,06)	4.0 (4.0)	-0.5 (0.4)	2.8 (2.6)	1.8 (1.8)
OECD (0,55)	2.9 (2.9)	2.1 (2.3)	2.6 (2.6)	2.8 (2.6)
TCW-weighted (0,47)	1.9 (1.9)	1.7 (1.8)	1.9 (2.0)	2.3 (2.3)
World (1,00)	5.0 (4.9)	4.2 (4.3)	4.4 (4.4)	4.5 (4.4)

Note. The figures in parentheses indicate the global purchasing-power adjusted GDP-weights, according to the IMF, 2010.

CPI	2010	2011	2012	2013
Euro area (HICP)	1.6 (1.6)	2.7 (2.2)	1.6 (1.5)	1.8 (1.8)
USA	1.6 (1.6)	3.2 (2.5)	2.4 (1.9)	1.7 (2.0)
Japan	-0.7 (-0.7)	0.1 (0.0)	0.5 (0.5)	0.7 (0.7)
TCW-weighted	1.6 (1.6)	2.6 (2.2)	1.8 (1.6)	1.8 (1.8)

	2010	2011	2012	2013
Policy rates in the rest of the world, TCW-weighted, per cent	0.5 (0.5)	1.0 (1.0)	1.6 (1.8)	2.7 (2.8)
Crude oil price, USD/barrel Brent	80 (80)	112 (114)	111 (114)	108 (110)
Swedish export market	8.8 (8.4)	8.2 (8.3)	6.7 (6.7)	6.4 (6.5)

Note. The Swedish export market index is calculated as a weighted average of the imports of the 15 countries which are the largest recipients of Swedish exports. They receive approximately 70 per cent of Swedish exports. The weight assigned to a country is its share of Swedish exports of goods.

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

Table 5. GDP by expenditure

Annual percentage change, unless otherwise stated

	2010	2011	2012	2013
Private consumption	3.4 (3.5)	2.4 (3.0)	2.2 (2.2)	2.2 (2.2)
Public consumption	2.5 (2.6)	1.5 (1.4)	0.7 (0.5)	0.7 (0.7)
Gross fixed capital formation	7.1 (6.3)	8.7 (10.6)	6.7 (6.5)	5.6 (5.6)
Inventory investment*	2.1 (2.1)	0.3 (0.1)	-0.8 (-0.3)	0.0 (0.0)
Exports	11.0 (10.7)	9.3 (8.4)	5.5 (5.6)	5.9 (5.9)
Imports	12.8 (12.7)	8.3 (7.9)	5.0 (6.0)	6.5 (6.5)
GDP	5.7 (5.5)	4.4 (4.6)	2.2 (2.3)	2.5 (2.5)
GDP, calendar-adjusted	5.4 (5.3)	4.4 (4.6)	2.6 (2.7)	2.5 (2.5)
Final figure for domestic demand*	3.7 (3.6)	3.1 (3.8)	2.5 (2.4)	2.3 (2.4)
Net exports*	0.0 (-0.1)	1.0 (0.8)	0.6 (0.2)	0.1 (0.1)
Current account (NA), per cent of GDP	6.2 (6.2)	6.4 (6.6)	6.7 (6.4)	6.5 (6.3)

*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

	2010	2011	2012	2013
Population, aged 16-64	0.5 (0.5)	0.3 (0.3)	0.1 (0.1)	0.0 (0.0)
Potential hours worked	0.9 (0.9)	0.5 (0.5)	0.4 (0.4)	0.3 (0.3)
GDP, calendar-adjusted	5.4 (5.3)	4.4 (4.6)	2.6 (2.7)	2.5 (2.5)
Number of hours worked, calendar-adjusted	1.7 (1.9)	1.7 (1.8)	1.2 (1.2)	0.7 (0.7)
Employed, aged 15-74	1.0 (1.0)	2.5 (2.5)	1.0 (0.9)	0.5 (0.5)
Labour force, aged 15-74	1.1 (1.1)	1.3 (1.3)	0.3 (0.3)	0.2 (0.2)
Unemployment, aged 15-74*	8.4 (8.4)	7.4 (7.3)	6.7 (6.7)	6.4 (6.4)

* Per cent of labour force

Note. Potential hours refers to the Riksbank's assessments of the long-term sustainable level for the number of hours worked.

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

	2010	2011	2012	2013
Hourly wage, NMO	2.6 (2.7)	2.9 (2.9)	3.3 (3.3)	3.5 (3.6)
Hourly wage, NA	1.3 (1.4)	3.9 (3.2)	3.6 (3.4)	3.8 (3.8)
Employer's contribution*	-0.3 (-0.3)	-0.1 (-0.2)	0.1 (0.1)	0.0 (0.0)
Hourly labour cost, NA	1.0 (1.1)	3.8 (3.0)	3.6 (3.5)	3.8 (3.8)
Productivity	3.6 (3.3)	2.6 (2.8)	1.5 (1.5)	1.8 (1.8)
Unit labour cost	-2.5 (-2.2)	1.1 (0.2)	2.1 (1.9)	1.9 (2.0)

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

Note. NMO is the National Mediation Office's short-term wage statistics and NA is the National Accounts. Labour cost per hour is defined as the sum of actual wages, 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: wage increases over and above productivity

Annual percentage change, unless otherwise stated, annual average

	2011	2012	2013
Hourly labour cost	3.8 (3.8)	3.9 (3.6)	4.8 (3.8)
CPI	1.6 (1.6)	2.0 (1.7)	2.5 (2.1)
CPI	3.1 (3.1)	3.1 (2.7)	3.3 (2.8)
Unemployment, per cent	7.4 (7.4)	6.8 (6.7)	7.1 (6.4)
Labour productivity	2.6 (2.6)	1.5 (1.5)	2.0 (1.8)
GDP, calendar-adjusted	4.4 (4.4)	2.5 (2.6)	2.1 (2.5)
Repo rate, per cent	1.8 (1.8)	2.9 (2.8)	3.6 (3.4)

Note. The figures in parentheses show the forecast in the main scenario.

Sources: Statistics Sweden and the Riksbank

Table 9. Alternative scenario: wage increases driven by increased productivity

Annual percentage change, unless otherwise stated, annual average

	2011	2012	2013
Hourly labour cost	3.8 (3.8)	3.9 (3.6)	4.8 (3.8)
CPI	1.6 (1.6)	1.7 (1.7)	1.9 (2.1)
CPI	3.1 (3.1)	2.6 (2.7)	2.6 (2.8)
Unemployment, per cent	7.4 (7.4)	6.6 (6.7)	6.0 (6.4)
Labour productivity	2.6 (2.6)	2.3 (1.5)	3.0 (1.8)
GDP, calendar-adjusted	4.4 (4.4)	3.4 (2.6)	4.1 (2.5)
Repo rate, per cent	1.8 (1.8)	2.8 (2.8)	3.4 (3.4)

Note. The figures in parentheses show the forecast in the main scenario.

Sources: Statistics Sweden and the Riksbank

Table 10. Alternative scenario: more severe crisis in public finances

Annual percentage change, unless otherwise stated, annual average

	2011	2012	2013
GDP abroad	1.6 (1.7)	0.4 (1.9)	1.6 (2.3)
Inflation abroad	2.5 (2.6)	1.0 (1.8)	0.5 (1.8)
Interest rate abroad, per cent	0.7 (1.0)	0.8 (1.6)	1.2 (2.7)
CPIF	1.5 (1.6)	1.0 (1.7)	1.1 (2.1)
CPI	3.3 (3.1)	1.2 (2.7)	1.1 (2.8)
GDP, calendar-adjusted	3.9 (4.4)	1.4 (2.6)	2.9 (2.5)
Unemployment, per cent	7.4 (7.4)	7.3 (6.7)	7.2 (6.4)
Repo rate, per cent	1.7 (1.8)	1.8 (2.8)	1.9 (3.4)

Note. The figures in parentheses show the forecast in the main scenario. TCW-weighted foreign variables.

Sources: Statistics Sweden and the Riksbank

Table 11. Alternative scenario: more severe crisis in public finances with more expansionary monetary policy

Annual percentage change, unless otherwise stated, annual average

	2011	2012	2013
GDP abroad	1.6 (1.7)	0.4 (1.9)	1.6 (2.3)
Inflation abroad	2.5 (2.6)	1.0 (1.8)	0.5 (1.8)
Interest rate abroad, per cent	0.7 (1.0)	0.8 (1.6)	1.2 (2.7)
CPIF	1.5 (1.6)	1.3 (1.7)	1.5 (2.1)
CPI	3.3 (3.1)	1.1 (2.7)	1.8 (2.8)
GDP, calendar-adjusted	3.9 (4.4)	1.9 (2.6)	3.2 (2.5)
Unemployment, per cent	7.4 (7.4)	7.1 (6.7)	6.7 (6.4)
Repo rate, per cent	1.6 (1.8)	1.1 (2.8)	1.6 (3.4)

Note. The figures in parentheses show the forecast in the main scenario. TCW-weighted foreign variables.

Sources: Statistics Sweden and the Riksbank

Table 12. Alternative scenario: higher interest rate

Annual percentage change, unless otherwise stated, annual average

	2011	2012	2013
Repo rate, per cent	2.0 (1.8)	3.0 (2.8)	3.4 (3.4)
GDP, calendar-adjusted	4.4 (4.4)	2.5 (2.6)	2.5 (2.5)
Hours gap, per cent	-0.7 (-0.7)	-0.1 (0.1)	0.2 (0.4)
Unemployment, per cent	7.4 (7.4)	6.8 (6.7)	6.6 (6.4)
GDP gap, per cent	-0.7 (-0.6)	0.0 (0.2)	0.4 (0.6)
CPIF	1.5 (1.6)	1.6 (1.7)	2.0 (2.1)
CPI	3.2 (3.1)	2.6 (2.7)	2.6 (2.8)

Note. The figures in parentheses show the forecast in the main scenario.

Sources: Statistics Sweden and the Riksbank

Table 13. Alternative scenario: lower interest rate

Annual percentage change, unless otherwise stated, annual average

	2011	2012	2013
Repo rate, per cent	1.7 (1.8)	2.6 (2.8)	3.4 (3.4)
GDP, calendar-adjusted	4.5 (4.4)	2.8 (2.6)	2.5 (2.5)
Hours gap, per cent	-0.7 (-0.7)	0.2 (0.1)	0.5 (0.4)
Unemployment, per cent	7.3 (7.4)	6.6 (6.7)	6.3 (6.4)
GDP gap, per cent	-0.6 (-0.6)	0.5 (0.2)	0.9 (0.6)
CPIF	1.6 (1.6)	1.9 (1.7)	2.1 (2.1)
CPI	3.1 (3.1)	2.8 (2.7)	2.9 (2.8)

Note. The figures in parentheses show the forecast in the main scenario.

Sources: Statistics Sweden and the Riksbank

Outline of articles published 2008–2011 ⁴¹

2008

- 2008:1 Energy prices and Swedish inflation
- 2008:1 Rising food prices
- 2008:1 The Riksbank's company survey
- 2008:2 The rate of increase in the CPIX will be below the CPI for a long time
- 2008:2 How are measures of underlying inflation used in monetary policy analysis?
- 2008:2 The development of the real interest rate
- 2008:2 The Riksbank's company survey: economic activity slowing down and costs rising
- 2008:3 The development of the financial crisis in September and October
- 2008:3 Fiscal policy: assumptions and forecasts
- 2008:3 The Riksbank's company survey: rapid slowdown and widespread pessimism

2009

- 2009 February Monetary policy alternatives in times of financial crisis and concern over deflation
- 2009 February The financial crisis and the effects of monetary policy
- 2009 February The recent weakening of the krona
- 2009 February The Riksbank's company interviews in December 2008–January 2009
- 2009 July Monetary policy when the interest rate is close to zero
- 2009 July Differences in financial structure and crisis measures in various countries
- 2009 July Global imbalances, saving and demand in the wake of the crisis
- 2009 July The Riksbank's company interviews in May 2009
- 2009 October Evaluating different monetary policy alternatives
- 2009 October Unconventional measures and the risk of inflation
- 2009 October Exit strategies for unconventional measures
- 2009 October House prices in Sweden

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

⁴¹ A list of the articles published since 1993 can be found on our website www.riksbank.se.

Earlier interest rate decisions⁴²

Date of meeting	Repo rate (per cent)	Decision (percentage points)	Monetary Policy Report
2007			
14 February	3.25	+0.25	2007:1
29 March	3.25	0	No report
3 May	3.25	0	No report
19 June	3.50	+0.25	2007:2
6 September	3.75	+0.25	No report
29 October	4.00	+0.25	2007:3
18 December	4.00	0	Monetary Policy Update
2008			
12 February	4.25	+0.25	2008:1
22 April	4.25	0	Monetary Policy Update
2 July	4.50	+0.25	2008:2
3 September	4.75	+0.25	Monetary Policy Update
8 October	4.25	-0.50	No report
22 October	3.75	-0.50	2008:3
3 December	2.00	-1.75	Monetary Policy Update
2009			
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	0.25	0	Monetary Policy Update
21 October	0.25	0	October 2009
15 December	0.25	0	Monetary Policy Update
2010			
10 February	0.25	0	February 2010
19 April	0.25	0	Monetary Policy Update
30 June	0.50	+0.25	July 2010
1 September	0.75	+0.25	Monetary Policy Update
25 October	1.00	+0.25	October 2010
14 December	1.25	+0.25	Monetary Policy Update
2011			
14 February	1.50	+0.25	February 2011
19 April	1.75	+0.25	Monetary Policy Update

⁴² A list of the historical interest rate decisions with effect from 1999 onwards can be found on the Riksbank's website 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.

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. Calculated by weighing together imports in the 15 countries which receive the major part of Swedish exports. Approximately 70% of Swedish exports are to these countries. The weights are determined by the respective country's share of Swedish exports of goods.

FED: The Federal Reserve, the central bank of the United States.

Fed 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.

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

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.

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 (i.e. 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 interest rate that banks pay when they borrow money from the Riksbank.

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.

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.

Sub-prime loan: Mortgages granted to households with low or non-verifiable incomes.

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

TCW index: An index for the Swedish krona's exchange rate.

TCW-weighted: An aggregate of, for instance, GDP, CPI or exchange rates in 20 countries that are important to Sweden's international transactions.

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 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.

Unit labour cost: Labour cost (see definition) per unit produced.

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

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