Material for assessing monetary policy

2005-2007

SVERIGES RIKSBANK

Introduction

The Riksbank is an authority under the Riksdag, the Swedish Parliament, with responsibility for monetary policy in Sweden. Since 1999 the Riksbank has an independent position with regard to the Riksdag and the Government. This means that the six members of the Executive Board decide on monetary policy issues without seeking or taking instructions. Neither may any other authority decide how the Riksbank is to act in manners relating to monetary policy.

The way in which the Riksbank carries out the delegated task is followed up in various ways by the Riksdag. For instance, every year the Riksdag Committee on Finance shall examine whether the General Council of the Riksbank and the Executive Board can be discharged from liability for their administration during the past year. At its own initiative, every year the Committee on Finance also examines and assesses the monetary policy conducted by the Riksbank in the immediately preceding years. The Riksbank compiles and publishes material for this assessment.

The material for the assessing of monetary policy was previously included in the first Monetary Policy Report each year (formerly the Inflation Report). In accordance with the Riksbank Act, this report was one of the written accounts of monetary policy that the Riksbank shall annually present to the Committee on Finance. As a result of the assessment of Swedish monetary policy carried out in 2006, the Committee on Finance has come to the conclusion that as of 2008 the first written account should be a separate report which contains the material for the assessment of monetary policy.

The material compiled by the Riksbank is a basis for assessing - not an assessment in itself. On the other hand, this does not mean that it is a pure compilation of numbers. The material also contains analyses of outcomes, forecasts and sequences of events. The Riksbank considers that those who assess monetary policy should also have access to the Bank's interpretation of the material and the conclusions drawn by the Bank from the results. The Committee on Finance and others who wish to assess the material are then at liberty to draw their own conclusions.

The Material for Assessing Monetary Policy 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 downloaded as a PDF file.

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Monetary policy in Sweden

MONETARY POLICY TARGET

According to the Sveriges Riksbank Act, the statutory objective of monetary policy is "to maintain price stability". The Riksbank has specified this objective in terms of an inflation target according to which the annual change in the consumer price index (CPI) is to be two per cent. The Riksbank has set a tolerance band around the target of plus/minus one percentage point. This band draws attention to the fact that it is beyond the powers of monetary policy to exactly attain the target all of the time. It also serves to underline that excessively large deviations are unacceptable if the target is to remain credible.

MONETARY POLICY STRATEGY[1]

- Monetary policy is guided by, in addition to CPI, various measures of "underlying inflation". One such measure is CPIX. This measures inflation adjusted for the direct effects of changes in indirect taxes and subsidies and mortgage interest expenditure. However, there is no single measure of inflation that at all times indicates the proper stance of monetary policy.
- Monetary policy is normally focused on achieving the inflation target within two years. This is partly because monetary policy has an effect on economic developments after a time lag. The two-year horizon also gives the Riksbank scope to take into account real economic developments (GDP growth, unemployment, employment and so on).
- The Riksbank's monetary policy decisions routinely take into account changes in asset prices and other financial variables.
- The Riksbank's forecasts are based on the assumption that the repo rate will develop in such a way that monetary policy can be regarded as well-balanced. In the normal case, a well-balanced monetary policy means that inflation is close to the inflation target two years ahead without there being excessive fluctuations in inflation and the real economy. At the same time, it is important to point out that the level of output and employment in the long term is not affected by monetary policy but is governed by other factors such as technology and access to labour.
- Openness and clarity in monetary policy are prerequisites for the successful combination of credibility for the inflation target and a flexible application of the target in the short term.

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 how the different Executive Board members voted.

1 A detailed description of the monetary policy strategy is available as a PDF file and as a printed publication that may be ordered from the Riksbank's website www.riksbank.se under the heading Monetary policy/Price stability.

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Summary

For the Riksbank, the focal point is the inflation target when monetary policy is formulated. The target is that the annual change in the consumer price index (CPI) is to be 2 per cent. There is a tolerance interval of plus/minus 1 percentage point around this target. This is to emphasise that it is not within the power of monetary policy to continuously achieve the target exactly, but also to underline that the Riksbank cannot accept excessively large deviations if the target is to remain credible.

Monetary policy is normally aimed at attaining the inflation target within a period of two years, if a deviation has occurred. One reason for this is that the effects of monetary policy appear with a time lag. Another reason is that the Riksbank can thus both endeavour to stabilise inflation around the target and contribute to dampening fluctuations in the real economy (growth, unemployment, employment etc). Normally, a well-balanced monetary policy means that inflation is close to the inflation target within two years while inflation and the real economy are not showing excessive fluctuations.

Of necessity, monetary policy is forward-looking and based on forecasts for the economic outlook. An assessment of monetary policy should analyse both the efficiency of the Riksbank in achieving the target and the accuracy of the forecasts. Therefore, the focus in this assessment is on the outcome in 2007 and covers the forecasts for 2007 that were made 2005-2007.[2]

During 2005 and 2006 the Riksbank envisaged a continued upturn in the economy which would gradually push up cost pressures and resource utilisation. Despite this, inflationary pressure was assessed to remain low due to a couple of restraining factors. One such important factor was strong productivity development which, at the same time as it contributed to slowing down price increases, allowed production to increase sharply.

At the end of 2005 the Riksbank held the repo rate unchanged. The beginning of 2006 saw the start of a period of interest rate increases that continued in 2007. The primary consideration during the period has been about the pace at which the repo rate should be raised given the low inflation rate initially, the continued economic upturn and the risk of an overly rapid increase in the rate of inflation later on.

The Riksbank concluded that the repo rate should be raised at a rate that allowed inflation to gradually rise towards the target. Inflation was thus expected to be below the target for a relatively long period of time before it approached the target. The Riksbank assessed that such a policy would contribute to inflation being around 2 per cent (measured with the CPI) and underlying inflation around 1.5 per cent (measured with the CPIX) in 2007. Inflation in 2007 was close to these forecasts; it was 2.2 per cent measured as an annual average of the change in the CPI. The corresponding figure for underlying

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2 See also earlier material for assessing monetary policy in the Inflation Report (IR) 2006:1 and the Monetary Policy Report (MPR) 2007:1 for an analysis of outcome and monetary policy 2005 and 2006.

inflation was 1.2 per cent, measured with the CPIX (previously known as the UND1X). Inflation in 2007 was, accordingly, roughly as high as the Riksbank believed during the assessment period. With the monetary policy it conducted the Riksbank anticipated that economic growth would continue to be high, which was also the case. In light of the development of the economy between 2005 and 2007, the Riksbank's assessment is that monetary policy in 2005 and 2006 was well balanced. It is too early to make a similar assessment of monetary policy in 2007. Such an assessment will be available in next year's material for assessing monetary policy.

CHAPTER 1 – General economic developments 2005-2007

The period 2005-2006 was characterised by strong international economic activity with the United States and Asia as the main driving forces behind global growth. To begin with, inflationary pressures were moderate due to strong productivity development, low resource utilisation and increased international competition. Rising energy and oil prices gradually began to put upward pressure on inflation. The economic upturn slowed somewhat in 2007. The slowdown in the United States sharpened in the wake of the crisis on the US mortgage market. During this period, developments in Sweden followed a similar pattern – strong growth 2005-2006 and a slowdown in 2007 with rising inflation towards the end of the period.

International developments

Good development in 2005

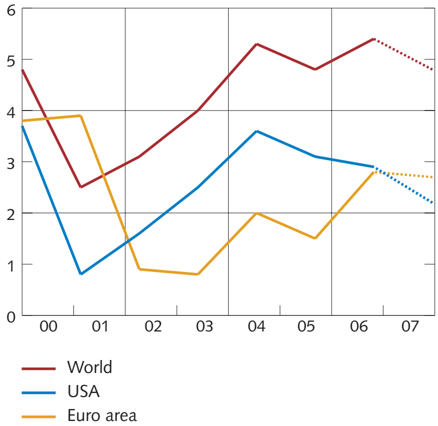
Economic development was very strong in 2005. GDP in the world economy increased by almost 5 per cent (see Figure 1). Company profits were healthy at the same time as interest rates were low and this decreased companies' financing costs. This contributed to a rapid rate of increase in investment. Private consumption also increased sharply. Despite the economic upturn and rising energy prices, strong productivity development and relatively low resource utilisation contributed to moderate inflationary pressures. Towards the end of the year, however, the high oil prices had more of an impact on international producer prices and consumer prices.

Despite generally healthy development there were major differences between different regions in the global economy. The United States and Asia were the main engines of the global growth. The economic upturn continued in the United States and GDP increased by slightly more than 3 per cent during the year. Employment, which had picked up considerably in 2004, continued to increase sharply during the year. Rising employment, higher real disposable incomes and positive wealth effects from rising house prices meant that household consumption increased sharply. The combination of a rise in resource utilisation and in energy and oil prices resulted in an increase in the inflation rate (see Figure 2). The Federal Reserve, which had begun to conduct a less expansionary monetary policy one year earlier, continued to raise its policy rate (see Figure 3).

On the Asian continent growth continued to be very high in both China and India in 2005. In China consumption and investment increased rapidly despite the Government's measures to cool down certain sectors of the economy. Exports also increased considerably. In Japan, the recovery of domestic demand continued at the same time as a weak yen contributed to an increase in exports. Consumer prices increased very moderately.

In the euro area economic growth was lower than in the United States and Asia (see Figure 1). Developments in household consumption were weak. Nonetheless, high energy prices contributed

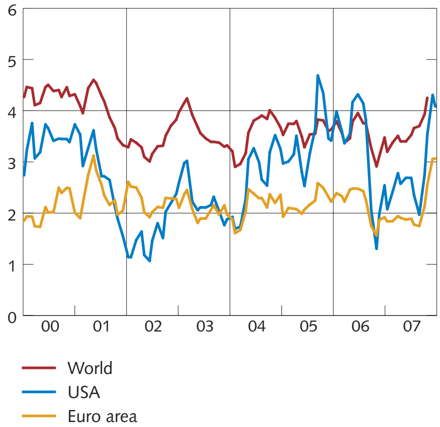
Figure 1. GDP for the United States, the euro area and the world
Annual percentage change



Note. The broken lines represent the Riksbank's forecast in MPR 2008:1.

Sources: Eurostat, IMF and US Department of Commerce

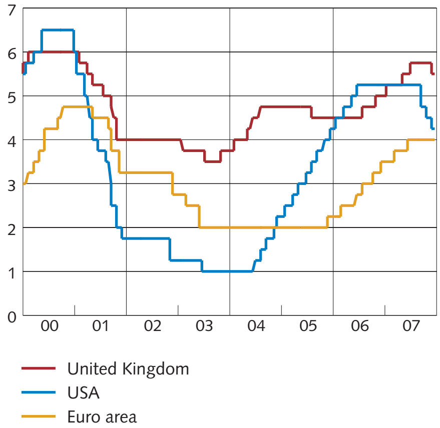
Figure 2. CPI inflation for the United States, the euro area and the world
Annual percentage change



Note. Euro area HICP.

Sources: Bureau of Labor Statistics, Eurostat and IMF

Figure 3. Policy rates
Per cent



Sources: Bank of England, ECB and the Federal Open Market Committee

to inflation being over 2 per cent (see Figure 2). The risk that the higher energy prices would affect inflation expectations caused the ECB to raise the policy rate from 2.0 per cent to 2.25 per cent towards the end of the year. Economic growth in the United Kingdom slowed down in 2005. Developments in consumption were weak and both exports and investments fell. The Bank of England cut the interest rate to 4.5 in the middle of the year, which contributed to a gradual recovery in household consumption. Property prices began to rise more rapidly again after standing fairly still.

Economic activity remained good in 2006

In 2006 international economic activity strengthened further and the euro area was also now included in the strong economic upturn. Inflation was still low in most countries but increased gradually, mainly because energy and oil prices had begun to climb already in 2005 and put upward pressure on producer prices. Inflationary pressures were counteracted by the fact that prices were forced down by the continuing process of globalisation and increased international competition.

Growth in the United States remained strong in 2006. The labour market and household income continued to strengthen. Both private consumption and business investment increased sharply. Towards the end of the year, however, there was a weakening due to a sharp fall in housing investment. Employment continued to rise during the year albeit at a slower rate. Growing pressure on resource utilisation, rising costs and high energy and oil prices led to a rise in inflation. The Federal Reserve continued to tighten monetary policy and raised the policy rate to 5.25 per cent in the middle of the year.

Growth was strongest in Asia in 2006, particularly in China and India where GDP displayed very high growth. The economic recovery continued in Japan. Growth was subdued during the second and third quarter but appeared to gather pace again towards the end of the year. After several years of deflation consumer prices began to rise slowly and the Bank of Japan raised the policy rate to 0.25 per cent in the middle of the year.

The recovery was also more evident in the euro area where GDP increased by 2.8 per cent in 2006. Investment increased but household consumption continued to develop weakly. Inflation amounted to 2.2 per cent and therefore continued to exceed the ECB's target. The ECB raised the policy rate on several occasions and at the end of the year it was 3.5 per cent. In the United Kingdom growth strengthened slightly compared with the previous year. The Bank of England raised the policy rate since inflation began to rise again during the second half of the year. Growth was strong in the Nordic region in 2006. Exports increased at the same time as consumption was pushed up by, among other things, rising house prices and an increase in employment.

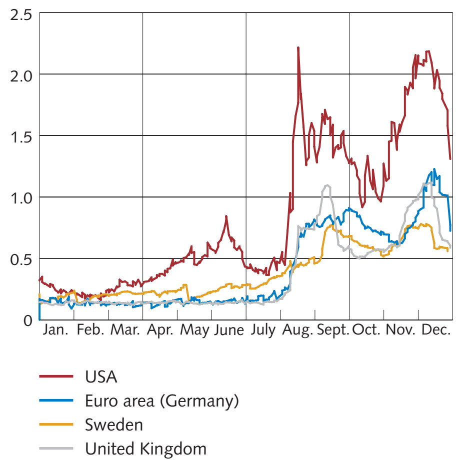
Slowdown in the economic upturn in 2007

In 2007 the upturn in international economic activity slackened somewhat, but GDP growth in the world economy was still high. However, economic activity in the United States slowed down considerably, which also had implications for developments in other parts of the world. The background was the financial turmoil that followed in the wake of the crisis in the US mortgage market. Securitised loans, which contained subprime loans, had been packaged in credit instruments and sold on to investors, mainly in the United States and Europe.[3] The unrest arose when it became more difficult to assess who actually owned the risk-filled assets, and how large these risks were. The spread between short government securities and interbank rates increased – a clear sign that the banks' credit risk had increased (see Figure 4). A general uncertainty and a reluctance to invest in higher risk assets spread. Central banks stepped in on a number of occasions. The Federal Reserve, the ECB and the Bank of England took action to stabilise short-term rates and facilitate the banks' supply of liquidity.

Growth was curbed further in the United States in the wake of the mortgage crisis during the second half of the year. House prices fell and both private consumption and investment were subdued. In September the Federal Reserve cut its policy rate by half a percentage point to 4.75 per cent. Inflation measured according to the implicit price deflator for personal consumption expenditures excluding food and energy – the measure the Federal Reserve publishes forecasts for – was falling and amounted to just over 2 per cent.[4] The Federal Reserve cut the policy rate again by 0.25 percentage points both in October and December to 4.25 per cent.

GDP growth in the euro area slackened during the year. Investment slowed down but employment continued to increase at a healthy rate. Growth was high in eastern Europe in 2007 and in Asia the strong development continued although growth in Japan slackened considerably during the second quarter. Growth remained strong in the United Kingdom during the year. Inflation exceeded 3 per cent in the spring but slowed down towards the end of the year when energy prices fell. They had previously been an important factor behind the rise.

Figure 4. The difference between interbank rates and government bond rates in 2007
Percentage points

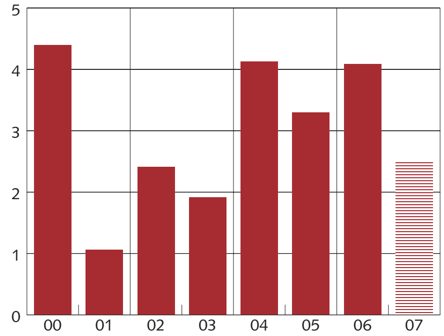


Source: The Riksbank

3 Securitisation means that a number of loans, in this case housing loans, are placed in a company especially created for this purpose. This company is then financed by issuing bonds on the market. These bonds are usually called Asset Backed Securities (ABS).

4 This measure of inflation was the only measure the Federal Reserve published forecasts for during 2006. Forecasts are now also published for the corresponding inflation measure including food and energy.

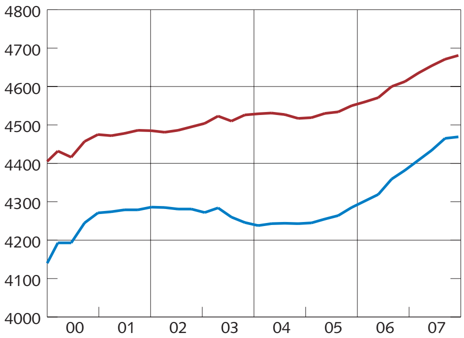
Figure 5. GDP for Sweden
Annual percentage change



Note. The striped bar represents the Riksbank's forecast in MPR 2008:1

Sources: Statistics Sweden and the Riksbank

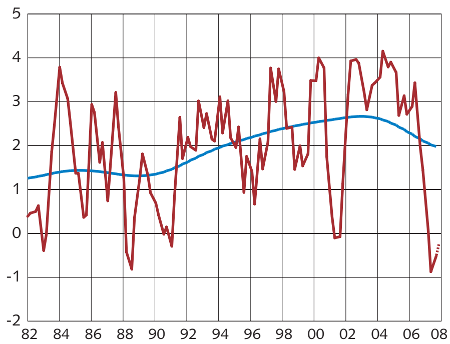
Figure 6. Number of employed, and number of people in the labour force
Thousands, seasonally adjusted



Labour force, 16-64 years
Employed, 16-64 years

Sources: Statistics Sweden and the Riksbank

Figure 7. Labour productivity for the economy as a whole
Annual percentage change, seasonally adjusted data



Labour productivity
Forecast, MPR 2008:1
HP-trend

Note. Trend calculated using the Hodrick-Prescott filter.

Sources: Statistics Sweden and the Riksbank

Developments in Sweden

Strong growth and low inflation in 2005

In 2005, the economic upturn continued in Sweden. GDP increased by 3.3 per cent during the year (see Figure 5). Labour market conditions improved. Employment, which for a long time had developed weakly despite strong GDP growth, began to rise and unemployment began to fall (see Figure 6 and Figure 16 in Chapter 2). Productivity continued to develop strongly (see Figure 7). Weaker demand in the European markets at the beginning of the year meant that the strong export trend was subdued somewhat. Nonetheless, investment increased rapidly as a result of healthy corporate profits. Household consumption also increased at a faster rate. Monetary policy was expansionary.

Despite strong growth, a combination of various factors nevertheless led to very low inflation in 2005. Low resource utilisation and continued strong productivity development meant that unit labour costs only increased marginally (see Figure 8). Relatively slight rent increases, falling food prices as a result of stiffer competition and lower import prices also contributed to curbing inflation. The CPI rose by an average of 0.5 per cent in 2005 and underlying inflation, measured with the CPIX (formerly the UND1X) increased by an average of 0.8 per cent (see Figure 9).[5]

Even stronger growth in 2006

Swedish economic activity strengthened further in 2006. GDP increased by 4.1 per cent. Increased international demand contributed to a strong increase in Swedish exports again. Labour market conditions improved considerably. Employment, measured both in the number of employees and the number of hours worked, increased sharply. Nonetheless the decrease in open unemployment was relatively slight given that the supply of labour increased at the same time. Monetary policy continued to be expansionary, but at the start of 2006 the Riksbank began to raise the repo rate. Lending to the corporate and household sectors continued to expand strongly and rapidly rising house prices strengthened household wealth (see Figure 10). Household consumption and in particular investment increased substantially.

Productivity growth continued to be strong which contributed to cost and inflationary pressures remaining low. The CPI rose by 1.4 per cent and underlying inflation by 1.2 per cent (measured with the CPIX). As in 2005, inflation in 2006 was affected by specific shocks, not least on the energy markets. Electricity prices rose sharply during the year as a result of, among other things, low water levels

5 The annual average is the average of the so-called twelve-month changes during the year. A twelve-month change is, for instance, a change of the CPI one month compared with the same month in the previous year.

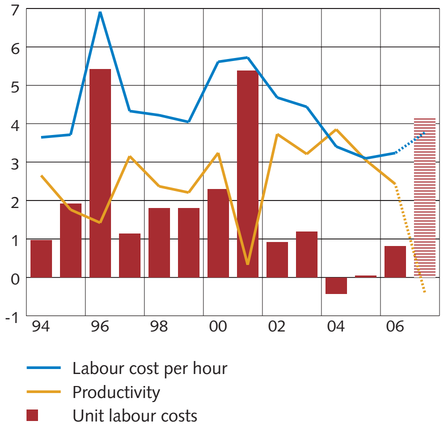
in the hydroelectric power companies' reservoirs. The prices of oil products (fuel, diesel and heating oils) increased rapidly in 2005-2006. However, towards the end of 2006 the market price on oil fell. When adjusted for energy prices CPIX inflation was roughly as low in 2006 as in 2005.[6]

Slackening of the economic upturn and rising inflation in 2007

Growth remained firm in 2007 although it slowed down compared with the previous years. GDP growth in the first three quarters amounted to 2.9 per cent.[7] Investment and in particular exports slowed down. Exports were affected by subdued international demand in the wake of the international slowdown. Statistics for the National Accounts show that growth in the number of hours worked did not increase as much during the third quarter as during the immediately preceding quarters.

Labour productivity slowed considerably in 2007. The combination of high resource utilisation, a growing shortage of labour and higher wage agreements than before led to unit labour costs starting to rise during the year after having been low for several years. Monetary policy continued to be conducted in a less expansionary direction. Prices of food and commodities rose sharply towards the end of the year. Energy prices continued to fluctuate sharply. Electricity prices fell at the beginning of the year, but rose towards the end of 2007. The price of oil products also rose during the year. The CPI and the CPIX rose by an average of 2.2 and 1.2 per cent respectively in 2007. CPIX inflation adjusted for energy prices rose from 0.6 per cent in 2006 to 1.5 per cent in 2007. Chapter 2 contains a more detailed description of Swedish developments in 2007.

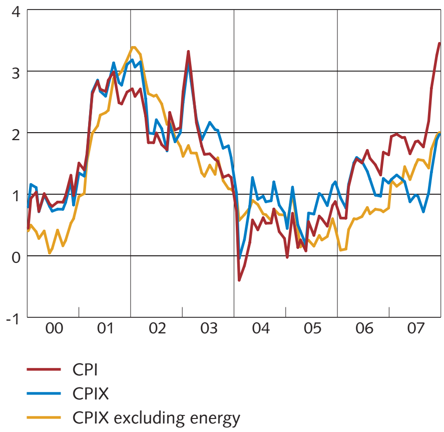
Figure 8. Unit labour costs for the economy as a whole
Annual percentage change, seasonally adjusted data



Note. The broken lines and striped bar represent the Riksbanks' forecast in MPR 2008:1

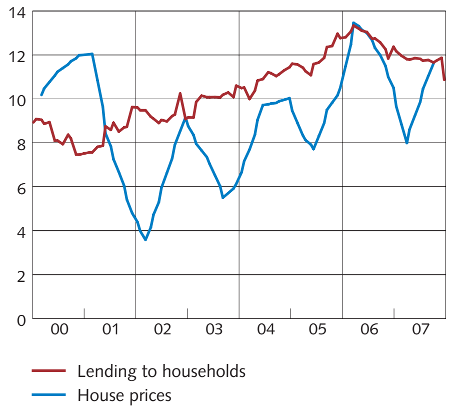
Sources: Statistics Sweden and the Riksbank

Figure 9. CPI, CPIX och CPIX excluding energy
Annual percentage change



Sources: Statistics Sweden and the Riksbank

Figure 10. House prices and total lending to Swedish households
Annual percentage change



Sources: Statistics Sweden and the Riksbank

6 That energy is excluded from the CPIX means that energy product prices are not included in the calculations. Changes in energy prices can also have repercussions on other prices. Such indirect effects are not excluded. See the article "Energy prices and Swedish inflation" in Monetary Policy Report 2008:1.

7 GDP statistics for the fourth quarter of 2007 had not been published at the time this material was compiled.

CHAPTER 2 – Outcome 2007

Inflation measured as the annual change in the CPI was on average 2.2 per cent in 2007. During the second half of the year inflation rose sharply, partly as a result of rising energy and food prices. During 2007 the upturn in economic activity slowed down compared with recent years. Productivity growth which had previously been high declined considerably in 2007.

Developments in inflation

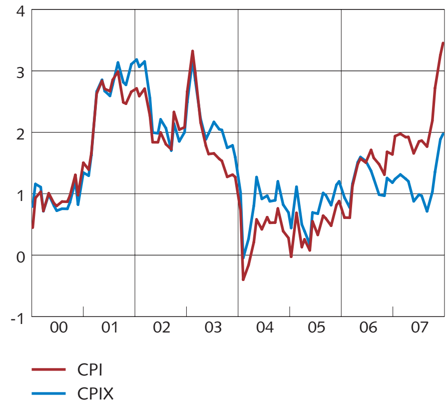
The Riksbank's formulation of its inflation target is that the annual change in the consumer price index (CPI) is to be 2 per cent. The CPI measures the price of a basket of goods and services. The prices of the different goods and services are weighted together on the basis of their representative proportions of consumption. Goods that are consumed on a large scale are given a greater weight in the CPI. This means that large and temporary changes in the prices of individual goods can have major but transitory effects on CPI inflation. Various measures of "underlying" inflation are often used therefore in order to be able to assess the development of the more persistent and long-term rate of inflation. What these measures have in common is that the price components that have varied considerably and which are not judged to affect the long-term development of inflation have been removed from the CPI.

A common measure of underlying inflation is CPIX whereby household mortgage interest expenditure and what are known as the direct effects of changes in indirect taxes and subsidies have been removed from the CPI. In recent years energy prices have varied greatly. It is, therefore, interesting to analyse another measure of underlying inflation where energy prices have been removed from the CPIX, CPIX excluding energy.

The CPI increased by an average of 2.2 per cent in 2007. If one looks at underlying inflation measured with the CPIX, it increased by an average of 1.2 per cent during the year. The difference between the CPI and the CPIX was 1 percentage point and the difference is mainly explained by the rise in households' interest rate costs. At the end of the year inflation rose sharply and in December 2007 the annual rate of increase in the CPI and the CPIX was 3.5 per cent and 2.0 per cent respectively (see Figure 11).

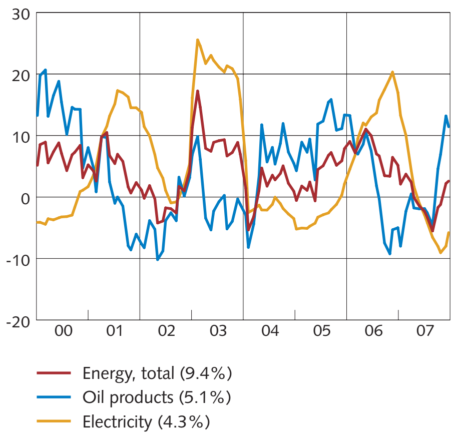
Energy prices have varied considerably in recent years, which has also had a major impact on inflation measured with the CPI, despite the fact that they account for less than 10 per cent of the CPI (see Figure 12). During the autumn of 2007 developments in energy prices contributed to a marked increase in the CPI and the CPIX.[8] However, if one looks at the development for 2007 as a whole, energy prices contributed to keeping inflation down (see Table 1 at the of the chapter). This is due to sharp fluctuations in energy prices. For

Figure 11. CPI and CPIX inflation
Annual percentage change



Source: Statistics Sweden

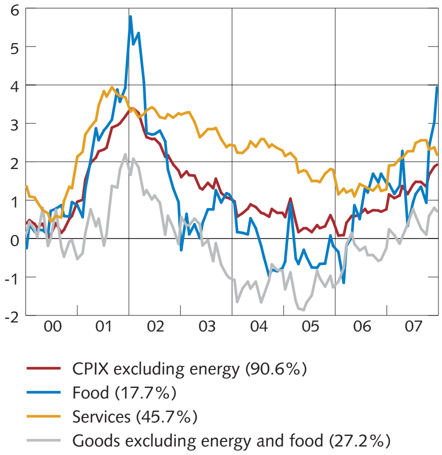
Figure 12. Energy prices in the CPI adjusted for direct effects of changes in indirect taxes
Annual percentage change



Note. Weightings in CPIX stated within brackets.
Sources: Statistics Sweden and the Riksbank

8 For a more detailed description of developments in energy prices, see the article "Energy prices and Swedish inflation" in Monetary Policy Report 2008:1.

Figure 13. CPIX excluding energy, broken down into, goods, services and food
Annual percentage change



Note. Weightings in CPIX stated within brackets.
Sources: Statistics Sweden and the Riksbank

instance, the price of oil products rose sharply up to mid-2006. Prices then fell until the beginning of 2007 when they once again began to rise. However, as shown by Figure 12, the annual change in the price of oil products was still negative up to the second half of 2007. That is, despite the increase, the price of oil products was still lower than in the same period of the previous year, which thus pulled down the general rate of inflation. In the same way, the major fluctuations in electricity prices of recent years have contributed to keeeping down the rate of inflation in 2007 as a whole. It may be worth pointing out that in 2006 developments in energy prices had the opposite effect, that is, they contributed to pushing up inflation.

If energy prices are removed from the CPIX, some 90 per cent of the CPIX remains. The annual rate of increase in this measure of underlying inflation, CPIX excluding energy, was on average 1.5 per cent in 2007, an increase of 0.9 percentage points on 2006 (see Table 1). The acceleration in the price increases on goods, services and food was behind this development (see Figure 13). Up until the end of 2005 there was a downward trend in the rate of price increase in these components in the CPI – in 2004 and 2005 food and goods prices excluding energy and food actually fell. Since then prices have once again begun to rise at an increasingly rapid rate. Food prices, especially, rose in 2007, particularly towards the end of the year. Among other things, this is explained by the significant increase in international agricultural commodity prices during the second half of 2007. A number of factors contributed to this rise, for example higher energy and fertiliser prices, low stocks and shortages of some crops.[9]

Development of inflation expectations

Inflation expectations are important for companies' price-setting behaviour and wage formation and thereby for inflation too. If economic agents are confident that inflation really will be kept stable around the inflation target, companies will not consider it necessary to change their prices as often when, for instance, they perceive a rise in costs to be temporary. In the same way, stable inflation expectations can result in moderate wage increases. This facilitates the Riksbank's aims of achieving price stability.

If inflation expectations are stable and close to the inflation target in a couple of years time, this can be interpreted as though the public is confident that the Riksbank will achieve its target. A high level of confidence in the inflation target increases the ability for monetary policy to take into consideration factors other than inflation, such as growth and employment.

It is important for the Riksbank to monitor developments in inflation expectations since they also can give important information

9 For a more detailed analysis of the higher food prices, see the article "Rising food prices" in Monetary Policy Report 2008:1.

about future inflation. If inflation expectations deviate from the target they can become self-fulfilling. If, for instance, households believe that inflation will rise they can demand higher wage increases which, in turn, can cause companies to charge higher prices as compensation for the higher wages. This could lead to an upward spiral where higher inflation leads to higher inflation expectations, which leads to higher inflation and so on. However, it has been observed, for instance, that inflation expectations reported in the National Institute of Economic Research's Consumer Tendency Survey (previously known as Household Purchasing Plans, HPP) have not been self-fulfilling in this way during the 1990s and 2000s.[10]

Figure 14 shows expectations during 2007 regarding inflation two years ahead, that is, for 2009, among money market participants, employer and employee organisations as well as purchasing mangers in trade and industry. Expectations among these groups have varied somewhat during the year but, seen in total, inflation expectations have increased during 2007. Expectations regarding inflation two years ahead are between 2 and just over 2.5 per cent. This does not differ much from the Riksbank's forecast for inflation two years ahead.

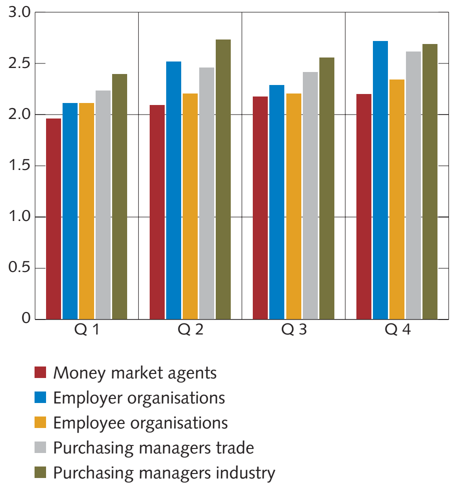
Figure 15 shows households' expectations 12 months ahead and, as shown by the Figure, these expectations are quite firmly anchored around 2 per cent. But when inflation has been low a period, expectations are adjusted downwards and vice versa when inflation has been high.[11]

Developments in production and employment

The upturn in the Swedish economy continued in 2007, but slackened compared with the previous years. At the time this material was compiled the National Accounts for the fourth quarter of 2007 had not been published and hence there was no information available about the GDP outcome for 2007 as a whole. Statistics for the first three quarters of the year, and economic indicators for the fourth quarter, point towards a GDP increase of around 2.5 per cent in 2007, according to the Riksbank's assessment in the Monetary Policy Report 2008:1. This is a comparatively strong development but it is nevertheless significantly lower than the average increase of some 3.8 per cent during the period 2004-2006 (see Figure 5 in Chapter 1).

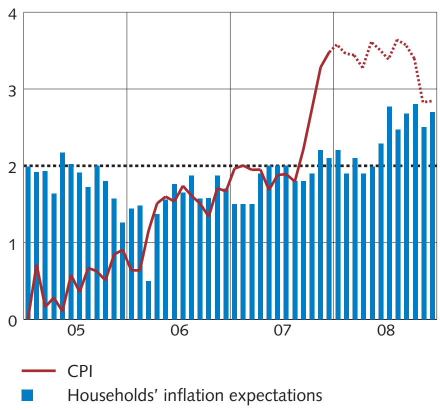
It is worth noting in this context that Statistics Sweden, in connection with the publication of the National Accounts for the third quarter of 2007, also revised the GDP figures since 1993. Among other things, better methods of measuring public production, cross-border trade in services and certain investments were introduced. The revision meant that GDP growth during the 2000s on average was revised up. Developments have thus been stronger than the Riksbank

Figure 14. Different agents' expectations of inflation for 2009 in 2007
Per cent



Source: Prospera Research AB

Figure 15. Inflation and households' inflation expectations 12 month ahead
Annual percentage change and per cent



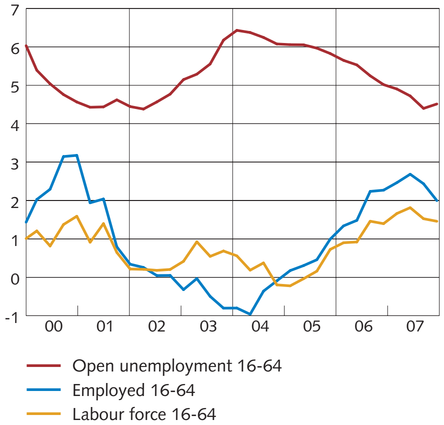
Note. The expectations are advanced 12 month to match the CPI outcome to which they refer. The broken black line refers to the inflation target. The broken red line refers to the Riksbank's forecast in MPR 2008:1.

Sources: NIER and the Riksbank

10 See the article "Households' inflation expectations" in Monetary Policy Report 2007:3.

11 You can read more about inflation expectations in the article "Households' inflation expectations" in Monetary Policy Report 2007:3.

Figure 16. Labour force, employment and open unemployment
Annual percentage change and per cent of labour force, seasonally adjusted data



Sources: Statistics Sweden and the Riksbank

and other forecasters have based their assumption on in their earlier forecasts.

The economic upturn in 2007 was also evident in the labour market. The number of employed persons increased by 2.4 per cent in 2007. The number of persons in the labour force also continued to increase during the year. The rate of increase was 1.6 per cent. Even if the labour force increased considerably, relatively speaking, employment increased even faster. Unemployment thus fell during the year. Open unemployment decreased from 5.4 per cent in 2006 to 4.6 per cent in 2007 (see Figure 16).[12]

Driving forces behind the developments – a model-based analysis

For a few years now, the Riksbank has used a so-called general equilibrium model of the Swedish economy. The model is called Ramses. In principle, the model attempts to explain the development and interplay in the "whole economy" and not just a particular part such as private consumption or the labour market.

The fact that a model is called an "equilibrium model" means that it is based on well-established economic theory and that its result assumes that market mechanisms, after a shock, create balance between supply and demand in all of the different markets of the economy that are in the model – that is, a "general" equilibrium.[13] Modern general equilibrium models are normally based on particular assumptions about the economic motives underlying the behaviour of individuals and organisations. Individuals and households wish to maximise "utility" over their life cycle and companies are assumed to maximise the present value of all their future profits. This rational behaviour also means that individuals and companies base their conduct on the best forecasts about the future that they are capable of making. They have what are referred to as rational expectations.

Ramses is mainly used to make forecasts and calculations of the effects of monetary policy. The model may also be used to calculate the effects of other changes in the economy. For example, the model can be used to try to distinguish in retrospect why inflation has developed in the way it has. Such calculations can provide an explanation as to why the forecasts are sometimes incorrect.

An historical analysis in Ramses shows that one of the most important reasons why inflation has been low over a longer period of time in Sweden is that there has been an unexpected and rapid increase in productivity. The analysis shows what inflation and GDP growth would have been, according to the model, if productivity

---

12 In the Figure and the outcome for 2007 the old definition is applied and refers to the age groups 16-64 years.

13 Ramses also has in-built rigidities, for example regarding the adjustment of prices, wages and capital stock. This means that the economy's outcome can deviate from long-term equilibrium during a long period of time.

had increased at a more normal rate and not as sharply as in recent years. In order to be able to estimate such an alternative development the model must first provide an answer as to which the main driving forces have been behind the economic development. There are some twenty such driving forces, or shocks as economists would say, in Ramses. According to the model, if the economy had not been affected by any shocks, inflation would be 2 per cent per year, the repo rate 4.25 per cent and GDP growth at 2.25 per cent, that is, in line with the long-term assumptions in the model.

After Ramses has calculated the driving forces that explain the historic development, it is possible to carry out the experiment of removing one driving force and allowing the model to show how, for example, inflation would have developed in the absence of this driving force. By making this analysis for each of the different driving forces in the model and comparing with the inflation outcome, an idea can be obtained of which driving forces have been most important for inflation developing in the way it has.

An analysis of this kind indicates that high productivity growth, partly due to the rapid development of technology, contributed to low inflation from 2004 to 2006. Figure 17 illustrates the actual inflation outcome and what inflation measured with the CPIX would have been, according to the model, if productivity had instead developed in line with a long-term historical pattern. The analysis shows that underlying inflation would instead have been around 1 percentage point higher in 2005 and 2006 (compare the blue line in Figure 17 with the red line for the CPIX outcome). According to the model, strong productivity growth has also contributed to more rapid growth in GDP than would otherwise have been the case. During the same period, GDP growth would have been some 0.8 percentage points lower than it actually was (see Figure 18).

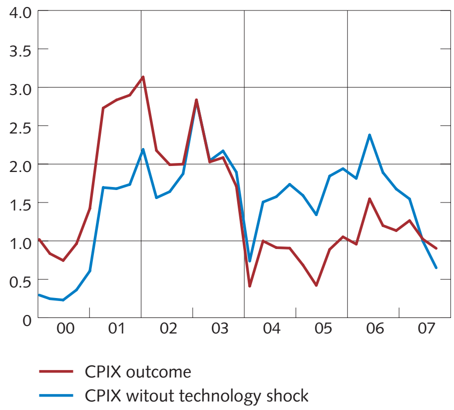
In 2007, however, productivity growth has declined and been lower than normal. This means that CPIX inflation, according to the model, was just over 0.2 percentage points higher than it would otherwise have been towards the end of 2007. Low productivity growth has also affected GDP growth. If productivity growth had not been so low, GDP would have grown by some 4 per cent instead of an average 3 per cent for the first three quarters of 2007.

Table 1. Inflation outcome 2005, 2006 and 2007
Annual percentage change

	Annual average		
	2005	2006	2007
CPI	0.5	1.4	2.2
CPIX	0.8	1.2	1.2
CPIX excl energy	0.4	0.6	1.5

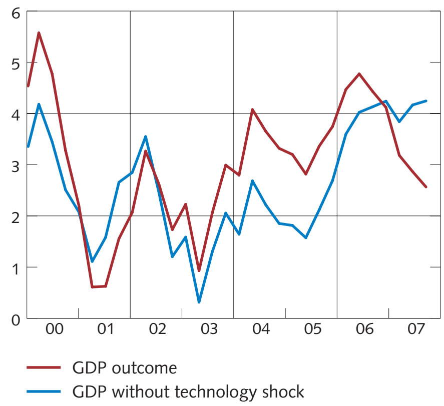
Sources: Statistics Sweden and the Riksbank

Figure 17. Productivity scenario, CPIX calculated with long-term productivity growth compared to the outcome of CPIX
Annual percentage change



Sources: Statistics Sweden and the Riksbank

Figure 18. Productivity scenario, GDP growth calculated with long-term productivity growth compared to outcome for GDP growth
Annual percentage change, calender-adjusted data



Sources: Statistics Sweden and the Riksbank

CHAPTER 3 – The process of assessing monetary policy

Assessments of monetary policy are important. The Riksbank has been given an independent position and therefore good insight and regular assessments are necessary to retain the legitimacy of the Riksbank's activities. It is essential for monetary policy to have national support so that it can function well. Assessments of monetary policy are also important in enabling the Riksbank to develop its monetary policy analysis in the best possible manner, which is an important part of the Riksbank's endeavour to maintain a high level of competence.

Monetary policy's objective and opportunities

The demands made of monetary policy and which form the starting point for an assessment should be based on what monetary policy can actually achieve. Monetary policy can secure an inflation rate that is in line with the inflation target over a number of years. Monetary policy can also contribute to *stabilising* the development of production and employment. Both earlier experiences and economic theory have shown that monetary policy cannot, however, be used to achieve a permanently higher level of employment or growth in the economy. This was one of the reasons why it was decided when drawing up the new Sveriges Riksbank Act that it would be inappropriate for the Riksbank to have, in addition to the price stability objective, an explicit target regarding, for instance, GDP growth or employment.

The Riksbank has an explicit inflation target according to which the annual change in the consumer price index (CPI) is to be 2 per cent. A natural means of assessing monetary policy is to examine how the inflation outcome relates to the inflation target. There are some factors that should be borne in mind when making such an analysis.

Wise after the event

The Riksbank has set a tolerance interval around the inflation target of plus/minus 1 percentage point. One of the purposes of this is to point out that monetary policy does not have such precision that it is possible to guarantee that the prices in the economy are always exactly 2 per cent higher than one year previously. Monetary policy is conducted under great uncertainty. Firstly, it is difficult to establish from the start what state the economy is in. This is partly because the statistics regarding economic developments are published with some time lag and can be revised afterwards. Secondly, there is uncertainty as to how long it takes for monetary policy to make an impact and how large an effect monetary policy changes will have on the economy. Thirdly, during the time it takes for changes in the policy rate to make a full impact on inflation and production, new and unexpected events will have affected the economy. The inflation and production that are observed will therefore have been affected by events that could not be predicted when the monetary policy decisions were made.

Assessing monetary policy with hindsight is therefore no easy task. A more direct comparison of the outcome and the forecasts on which the decisions were based should be supplemented with a discussion of whether the analysis and interest rate decisions were reasonable given the information that was available at the time the decisions were made.

Not just inflation

For the Riksbank, when monetary policy is formulated, the focal point is the inflation target. But how quickly should the target be attained if inflation has deviated from the target as a result of a shock? Monetary policy is normally focused on achieving the inflation target within two years. One reason for this is that the effects of monetary policy appear with a time lag. Another reason is that the Riksbank, by aiming at this horizon, can contribute to dampening fluctuations in the real economy (GDP growth, unemployment, employment and so on) while at the same time maintaining the credibility of the inflation target. Let us assume that a shock, such as a sharp rise in the oil price, has meant that inflation is pushed up while production has slackened significantly. If monetary policy in this case is aimed at raising the interest rate substantially to quickly bring down inflation to the target level, there is a risk that this will be at the expense of production, which will slow down further. By not aiming to restore inflation to target as quickly as possible, scope is created to conduct monetary policy in such a way as to dampen fluctuations in the real economy. To the Riksbank a well-balanced monetary policy normally means that inflation is close to the inflation target within two years while inflation and the real economy are not showing excessive fluctuations.[14]

It is important to consider these factors if one is to be able to assess the monetary policy conducted during a particular year. Even if a specific year is under scrutiny it becomes necessary to study the course of inflation in earlier years to gain a picture of the initial situation for monetary policy. The fact that inflation has been allowed to deviate from the target may be because the monetary policy strategy has been ill-considered. But it may also have been part of a deliberate strategy by the Riksbank to be able to balance developments in production and employment. The Riksbank should then have clearly referred to these considerations in its communication.

14 A description of the Riksbank's strategy can be found in the document *Monetary Policy in Sweden* which is available on the Riksbank's website.

Monetary policy is based on forecasts

It normally takes time before inflation, production, employment and so on react to changes in the central bank's policy rate. The effects come gradually and it is difficult to measure exactly how long it will take until the full impact of monetary policy has occurred. A common estimate is that the greatest impact is attained within two years. It is therefore essential that efficient inflation targeting is based on forecasts of economic developments, despite the fact that these forecasts are always uncertain.

As monetary policy is based on forecasts, the accuracy of the forecasts becomes an important part of an assessment of monetary policy. A natural starting point for the assessment is therefore to compare the outcome for inflation the year the assessment refers to with the forecasts for inflation made by the Riksbank up to two years earlier. These forecasts were used as a base for the interest rate decisions made then; decisions which affected inflation during the year that was assessed.

What is a good forecast?

What demands can be made of a central bank's forecasts? The answer is not entirely clear. Practical forecasting work is associated with a number of difficulties, many of which stem from the inherent uncertainty of the forecasts. The economy is constantly affected by unexpected shocks which cannot be predicted. This means that the forecasts will always be more or less inaccurate. Analysing the accuracy of a forecast in an individual year thus provides limited information. A large forecasting error can indicate that the forecast was poor, but it can also be a consequence of a shock occurring that could not have been predicted. It is possible to obtain an indication of whether this was the case by comparing the forecasts with those made by other analysts.

A reasonable requirement is that a central bank's forecasts do not on average have poorer accuracy than the corresponding forecasts made by other economic analysts. If the central bank's forecasts are systematically inferior, it would evidently have been possible to make better assessments. This would also have meant that there was better information available which the central bank would have been able to use as a base for its decision-making.

A long period of examination is necessary to be able to say anything more definite about the accuracy of the forecasts. The economy is constantly exposed to random shocks that lead to forecasts being incorrect. Over a long period of time these forecasting errors offset one another and on average good forecasts should therefore not over-estimate or under-estimate the actual outcome. For shorter periods it may be more interesting to study individual forecast errors in greater detail to try to analyse their causes. Such an analysis is valuable, but it is not possible to use it to draw any conclusions regarding the general forecasting ability. Analyses of shorter periods therefore need to be supplemented with assessments of longer periods.[15]

While accuracy is a very important factor, more than this is required for a forecast to be good in a monetary policy context. A good forecast for inflation, for instance, should be inherently consistent with the forecasts for other quantities and the driving forces behind the forecast should be explained in a comprehensible manner. Why does the forecast look the way it does? What are the mechanisms acting as motor for this development? These qualities are also required for a forecast to function as part of the decision-making base for practical monetary policy.

Finally, to attain the monetary policy objective it is not sufficient to have good forecasts. It is also necessary for the monetary policy decisions made on the base of the forecasts to be well-balanced, given the information available at the time the decisions were made.

15 For such an assessment of the Riksbank's forecasts, see M. Andersson et al "An evaluation of the Riksbank's forecasting performance", *Economic Review*, No. 3, 2007, Sveriges Riksbank.

CHAPTER 4 – The forecasts made 2005 - 2007

The average annual CPI inflation rate was 2.2 per cent in 2007. This was close to the forecasts for inflation in 2007 made by the Riksbank during the assessment period. The forecasts for underlying inflation (measured as CPIX) in 2007 were also relatively accurate. On the other hand, the Riksbank underestimated the strength of the economic upswing during this period, which is largely explained by the strength of productivity growth having been underestimated, particularly in 2006. However, the forecasts for GDP growth in 2007 which were made from the middle of 2005 until the middle of 2006 appear to have been relatively accurate.

When assessing the Riksbank's monetary policy, it is natural to begin by comparing the outcome for inflation today with the forecasts the Riksbank made up to two years ago. These forecasts formed a base for the interest rate decisions made then. The focus for this assessment is mainly on the outcome in 2007. It is therefore mainly the forecasts for 2007 that were made in 2005-2006 that are analysed in this chapter. But the Riksbank also studies the forecasts for 2007 made in 2007. Although it takes time before the full effect of monetary policy is felt, interest rate decisions made at the beginning of one year have some effect on the developments during the same year. It can therefore be interesting to also analyse forecasts made in the same year.

One limitation when analysing these forecasts is that the National Accounts figures for the fourth quarter of 2007 were not available when this material was compiled and thus there was no outcome for GDP growth in 2007.

Assumption regarding the repo rate path

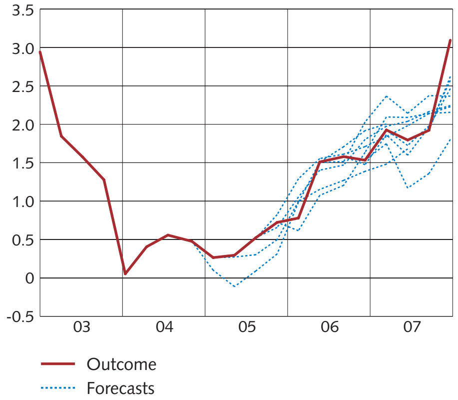
One difficulty in earlier analyses of the Riksbank's forecasts has been that the forecasts were based on the assumption that the repo rate would remain unchanged during the forecast period. This was not particularly realistic, as the repo rate normally changes during the forecast period, which has an effect on inflation. This meant that it was difficult to gain an exact perception of how accurate the Riksbank's forecasts of inflation were.

With effect from the third Inflation Report published in 2005 the forecasting method was therefore changed. The forecasts in the main scenario were instead based on how the market believed the repo rate would develop during the forecast period. More exactly, they were based on the assumption that the repo rate would develop in line with the so-called implied forward rates.

One of the advantages of the assumption that the repo rate will develop in line with market expectations is that this is normally more realistic than the assumption that the repo rate will remain constant.[16] This makes it simpler to assess the Riksbank's forecasts as they will, for instance, be more easily comparable with others. At the same

16 See the box "Changes in the Riksbank's forecasting methods" in Inflation Report 2005:1

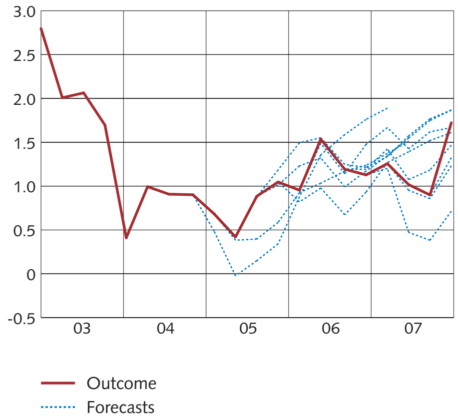
Figure 19. CPI forecasts
Annual percentage change



Note. The broken lines show the forecasts presented in all Inflation and Monetary Policy Reports 2005 - 2007.

Sources: Statistics Sweden and the Riksbank

Figure 20. CPIX forecasts
Annual percentage change



Note. The broken lines show the forecasts presented in all Inflation and Monetary Policy Reports 2005 - 2007.

Sources: Statistics Sweden and the Riksbank

time, it is important to remember that the forecasts based on market expectations of the future repo rate were not necessarily the forecasts the Riksbank considered most likely. The Riksbank may have made a different assessment, although the difference was not normally very great. With effect from the first Monetary Policy Report of 2007 the Riksbank began to publish forecasts based on the Executive Board's own assessment of the future repo rate path. [17]

The forecasts made 2005-2007 – a review

Figures 19-22 show the Riksbank's forecasts for changes in the CPI and CPIX, GDP and the number of persons employed during the period 2005-2007. The figures show the actual developments (the red unbroken line) and the forecasts for developments between 2005 and 2007 which the Riksbank made in each Inflation Report and Monetary Policy Report during the period (the broken lines).

The first forecast is the one presented in Inflation Report 2005:1 and applies to developments from the first quarter of 2005 until the first quarter of 2007, that is to say two years ahead. The second forecast is the one made in Inflation Report 2005:2 and applies correspondingly to developments from the second quarter of 2005 to the end of the second quarter of 2007. The forecasts made in 2006 extend into 2008, but as the relevant period in this assessment is 2005-2007 we only include the forecasts up to the end of the fourth quarter of 2007 in the figures. This means that the final forecast, the one made in the Monetary Policy Report 2007:3, only applies to the fourth quarter of 2007.

It is difficult but not actually necessary to distinguish individual forecasts in the figures. The figures are rather aimed at providing an overall picture of how the Riksbank's assessments have changed and how well the forecasts have predicted actual developments. As shown in the figures, it is not easy to make accurate forecasts for individual quarters, particularly further ahead in time. The forecast errors for individual quarters may be substantial. To some extent these errors offset one another, which means that the forecasting error for the average of all forecasts over one year does not necessarily need to be so great.

In the figures the forecasts are compared with actual outcomes. One difficulty is that the outcome for GDP growth may change as the National Accounts figures are revised over time. It is therefore not entirely clear which outcome the Riksbank shall use to compare the forecasts with. Should the National Accounts figures published directly after the forecasts be used, or the National Accounts figures that apply now that the historical account has been revised? In figures 19-22, and in this material as a whole, the Riksbank has used the most recent statistics as comparison.

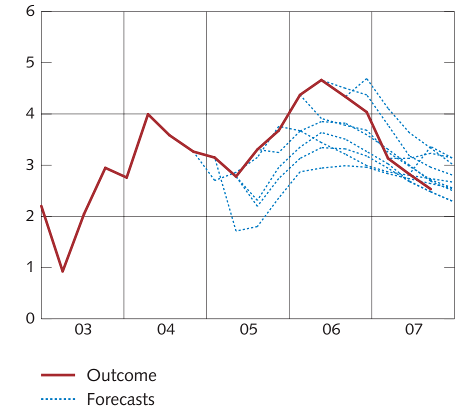
17 See Irma Rosenberg, "Riksbank to introduce own path for the repo rate", speech, 17 January 2007.

Figure 19 shows the forecasts for CPI inflation, measured as the percentage change in CPI one quarter compared with the same quarter in the previous year. CPI inflation has shown an increasing trend and the forecasts made from the middle of 2005 onwards have captured this well. The corresponding figure for CPIX, figure 20, shows that this measure of underlying inflation has not shown the same increasing trend. CPIX inflation was at a level between 1 and 1.5 per cent in 2006-2007. The Riksbank's forecasts were kept around this level, but CPIX inflation in 2007 was overestimated slightly.

Figure 21 shows that the Riksbank's general assessment has been that GDP growth would increase up to the first half of 2006 and slow down somewhat after that. This assessment proved to compare well with the actual outcome. However, the Riksbank underestimated the strength of the rise in GDP growth in the forecasts made up to the middle of 2006. These forecasts were more accurate with regard to developments in 2007. However, the forecasts made at the end of 2006 and the beginning of 2007 were too optimistic with regard to GDP growth in 2007.[18]

Figure 22 shows that the forecasts made at the beginning of 2005 were relatively accurate in predicting how quickly the number of employed persons would increase up to the beginning of 2006. From the middle of 2006 and during the whole of 2007, on the other hand, they increased much more quickly than the Riksbank predicted in the forecasts made from 2005 up to the beginning of 2007.

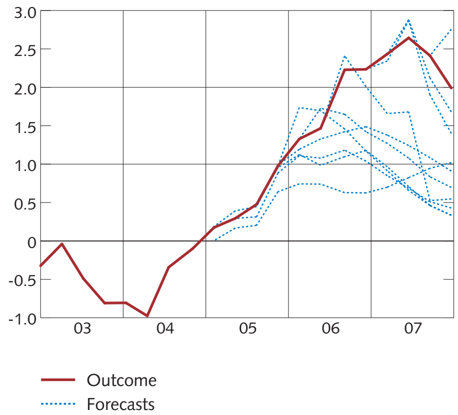
Figure 21. GDP forecasts
Annual percentage change



Note. The broken lines show the forecasts presented in all Inflation and Monetary Policy Reports 2005 - 2007.

Sources: Statistics Sweden and the Riksbank

Figure 22. Forecasts of number of employed
Annual percentage change



Note. The broken lines show the forecasts presented in all Inflation and Monetary Policy Reports 2005 - 2007.

Sources: Statistics Sweden and the Riksbank

About the forecasts and how they have changed

Inflation forecasts

At the beginning of 2005 new statistics appeared to indicate that economic activity both abroad and in Sweden had entered a calmer phase than in 2004. The Riksbank's assessment was that growth would nevertheless be relatively strong and that resource utilisation would rise. Although employment in Sweden had shown slightly weaker development than expected, there were signs that the labour market was about to turn around.

In the first Inflation Report of 2005 the Riksbank adjusted its inflation forecast downwards. This was not due to any crucial change in the assessment of the general economic outlook, but rather to a number of specific factors: low import prices due to increased international competitive pressure, price pressures in the domestic food industry and lower rent increases. The Riksbank's assessment

18 As there is some time lag in the publication of outcomes for the National Accounts, there is a corresponding time lag in the forecasts in Figure 21. As, for instance, the final Inflation Report of 2006 was published in October, no outcome had yet been published for the National Accounts in the third quarter. So despite the report being published in the fourth quarter, a forecast was made for the third quarter.

was that inflation would remain low in 2005 and then rise as costs pressures increased. It was assessed that underlying inflation would be approximately in line with the target a couple of years ahead (see Table 2 at the end of the chapter). But inflation would remain low during a large part of the forecast period.

In connection with the second Inflation Report published in 2005, new statistics on the National Accounts showed that growth in the economy had been much weaker than expected during the first quarter. The Riksbank's assessment was that this was a temporary downswing and that the economic upturn would continue. The forecasts for both the CPI and underlying inflation were adjusted downwards as resource utilisation and cost pressures were deemed to be lower than previously estimated.

As the inflation forecasts were adjusted upwards in the third Inflation Report published in 2005, the forecast for CPI inflation in 2007 was in line with the final outcome for inflation. The forecast did not change much in later reports (apart from the Monetary Policy Report 2007:1, see the section "Comparison with other forecasters" below) (see Table 2). The forecasts for underlying inflation did not change much from the second Inflation Report of 2005, but unlike the CPI forecasts they slightly overestimated developments in 2007, by around 0.3-0.4 percentage points to the middle of 2006. The forecasts for inflation in 2007 made during the assessment period were thus relatively accurate.

The forecasts for the real economy

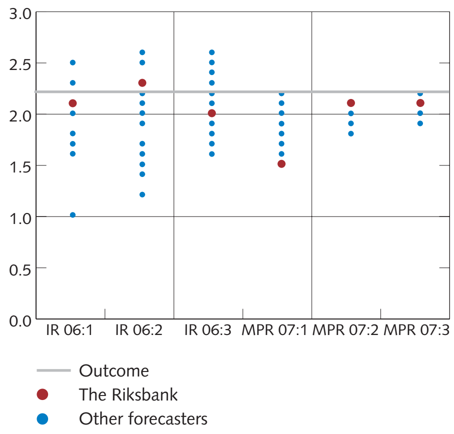
The Riksbank's assessment that the economic downswing at the beginning of 2005 would be short-lived proved to be correct. In addition, the downswing, according to revised statistics, proved not to have been as deep as the statistics first implied. The very weak growth figures for the first quarter of 2005 published prior to the year's second Inflation Report in June 2005 caused the Riksbank, like many other analysts, to make a substantial downward adjustment to its forecasts for GDP growth in 2006. This led to growth being underestimated. The forecasts were gradually adjusted upwards as new statistics indicated that the strength in the economic upturn was continuing. But it was not until the middle of 2006 that the forecasts reflected how strong the economic upswing would be (see Table 2).

Despite the fact that GDP growth in 2006 proved to be higher than the Riksbank had forecast, underlying inflation in 2007 proved to be slightly lower than was forecast during that same period. The reason why it is interesting to make the connection between the forecasts for GDP growth in 2006 and inflation in 2007 is that developments in production affect inflation with some time lag, for instance through cost pressures in the economy. One of the main reasons why production increased substantially while price increases were held down was that productivity increased rapidly.[19] The Riksbank underestimated the rate of increase in productivity in 2006, and also GDP growth, up to the third Inflation Report of 2006 (see Table 3 on the last page). The high productivity growth meant that it was possible for firms to increase production quickly without unit labour costs increasing that much. As the Riksbank underestimated productivity growth, unit labour costs in 2006 were overestimated (see Table 3 on the last page).

With regard to the forecasts for GDP growth in 2007, the forecasts made by the Riksbank from the middle of 2005 and up to the middle of 2006 appear to have been relatively accurate.[20] However, the forecasts made from the end of 2006 up to the final Monetary Policy Report of 2007 seem to have overestimated developments in 2007. In the final forecast published in 2007, which was the forecast in the Monetary Policy Update presented in December, the forecast for GDP growth in 2007 was revised downwards by half a percentage point. The primary reason for this was that new statistics showed that GDP growth during the third quarter of the year had been much weaker than expected. Moreover, the statistics for the first two quarters of the year had been revised down substantially, which meant that the economic cycle during the year looked different than had been indicated by earlier statistics.

Productivity slowed down significantly during the year. The fact that productivity would gradually slow down was something that many analysts, including the Riksbank, agreed on, but the slowdown in 2007 came more suddenly and was more substantial than anyone had predicted. The Riksbank gradually revised down its forecasts for productivity growth in 2007 during the year (see Table 3 on the last page).

Figure 23. Forecasts for the inflation (CPI) 2007, made at different points in time
Annual average



Note. See footnote 21.

Sources: Consensus Economics Inc, the Ministry of Finance, the Swedish Trade Union, Statistics Sweden and the Riksbank

Comparison with other forecasters

Comparison of inflation forecasts

Figure 23 shows the forecasts for average CPI inflation in 2007 made by various forecasters during 2006 and 2007.[21] The figure does not compare all CPI forecasts made by the different analysts during the year; only the forecasts that were relevant at the time the Riksbank published its reports.

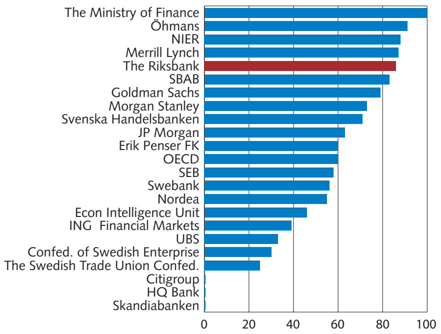
The figure should be interpreted as follows: each dot represents a particular inflation forecast for 2007 made by an analyst at the time

19 See the section "Driving forces behind the developments – a model-based analysis" in Chapter 2.

20 When compiling this material, there were only statistics available for the first three quarters of 2007.

21 The material is based on the compilation of forecasts by various analysts made by Consensus Economics Inc., which includes the Riksbank, the National Institute of Economic Research (NIER) and Swedish and foreign banks. In addition to this, forecasts made by the Ministry of Finance, the Swedish Trade Union Confederation and some international organisations have been included. The Consensus material does not include forecasts made regarding developments two years ahead. Thus no comparison is made with the forecasts for inflation in 2007 made in 2005.

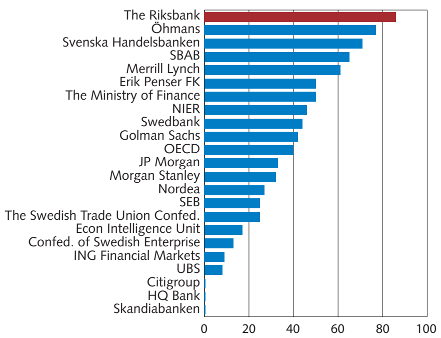
Figure 24. Ranking of CPI forecasts, 50%
Per cent



Note. On each occasion that an analyst, e.g. the Riksbank, makes a forecast this is then compared with other analysts' forecasts made at the same point in time. All of the times when the forecast is one of the 50 per cent most accurate are added and divided by the total number of forecasts made by the analyst. The columns in the figure illustrate this percentage for each one of the analysts. In this specific case the column for the Riksbank shows that on just over 80 per cent of the occasions the Bank has made a forecast that is among the 50 per cent most accurate forecasts.

Sources: Consensus Economics Inc, the Ministry of Finance, the Swedish Trade Union, Statistics Sweden and the Riksbank

Figure 25. Ranking of CPI forecasts, 25%
Per cent



Note. On each occasion that an analyst, e.g. the Riksbank, makes a forecast this is then compared with other analysts' forecasts made at the same point in time. All of the times when the forecast is one of the 25 per cent most accurate are added and divided by the total number of forecasts made by the analyst. The columns in the figure illustrate this percentage for each one of the analysts. In this specific case the column for the Riksbank shows that on just over 80 per cent of the occasions the Bank has made a forecast that is among the 25 per cent most accurate forecasts.

Sources: Consensus Economics Inc, the Ministry of Finance, the Swedish Trade Union, Statistics Sweden and the Riksbank

a report was published. The Riksbank's forecast is represented by a red dot. The number of analysts is roughly the same on each forecast occasion, but the number of dots in the figure may be fewer if several analysts have made the same forecast at a particular point in time. The actual outcome for CPI inflation in 2007 is represented by the unbroken line in the figure.

Figure 23 shows that there was a relatively large spread in the forecasts for CPI inflation in 2007 made in 2006. On the first report occasion in 2006, for instance, the difference between the highest and lowest forecast was around 1.5 percentage points. The Riksbank's forecasts were among the most accurate during the period. However, the Riksbank made a larger forecasting error than the other analysts at the beginning of 2007 when the inflation forecast for CPI was revised down relatively substantially.

The fact that the Riksbank adjusted inflation forecasts down at the beginning of 2007 was mainly due to developments in energy prices. The forecast for CPIX excluding energy was revised only marginally and this forecast proved to correspond relatively well with the actual outcome (see Table 3 on the last page). Energy prices had fallen during a period of time and the Riksbank's assessment was that this would have a relatively substantial effect on CPI inflation. As observed in an earlier section, it was true that energy prices contributed to holding back inflation in 2007, but not to the extent forecast by the Riksbank at the beginning of the year. However, in the Monetary Policy Report 2007:1 it was emphasised that the substantial fluctuations in energy prices that had taken place meant that it was very difficult to predict inflation in the short term. In the second Monetary Policy Report of 2007 the inflation forecasts were corrected upwards once again, to a level that proved to be in line with the actual outcome for the year.

Figures 24 and 25 compare the accuracy of the forecasts for CPI inflation in 2007 made during the period 2006-2007 by various forecasters.[22] Figure 24 shows that the Riksbank's forecasts were among the 50 per cent most accurate forecasts over 80 per cent of the time. Figure 25 correspondingly shows the results if the calculations are made for an accuracy greater than 75 per cent of the other analysts' forecasts. The figure shows that the Riksbank's forecasts were among the 25 per cent most accurate forecasts over 80 per cent of the time.[23]

The Riksbank's forecasts for CPI inflation in 2007 were thus relatively accurate in 2006 and 2007. However, it is important

22 The material is based on the same material as Figure 23. One difference is that in the calculations behind Figures 24 and 25 all of the forecasts published during the year have been used, not just the forecasts published at the same time as the Riksbank's reports.

23 The Riksbank's results are the same in Figures 24 and 25, that is, all of the times the Riksbank's forecasts were among the 50 per cent most accurate they were also among the 25 per cent most accurate. Other analysts' forecasts were sometimes among the 50 per cent most accurate but not the 25 per cent most accurate. This explains the difference in results between Figures 24 and 25.

to point out that one cannot draw any general conclusions on forecasting performance from these results. It is only the forecasts for a particular year that are compared here and the number of forecasts from the respective analysts is small.[24]

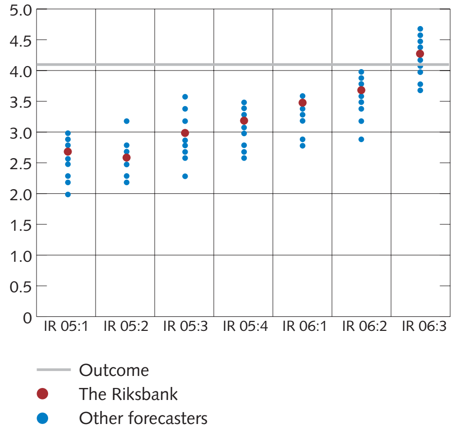
Comparison of forecasts for GDP growth

Figures 26 and 27 illustrate the forecasts for GDP growth in 2006 and 2007 respectively made by various analysts during the assessment period. The figures are constructed in the corresponding way to Figure 23 above.

Figure 26 shows that the Riksbank's forecasts for GDP growth in 2006 were in the middle of the range of forecasts in 2005 and 2006. The compilation of forecasts also shows that the strength in the GDP growth surprised all analysts. One telling example is that even the analyst with the highest growth forecast for 2006 still underestimated the final outcome of GDP growth at the beginning of 2006.

Figure 27 illustrates the forecasts for GDP growth in 2007. The Riksbank's assessment in the Monetary Policy Report 2008:1 is that GDP growth in 2007 was 2.5 per cent. If the outcome is close to this forecast, it is clear from Figure 27 that the forecasts made in 2006 are more centred on the outcome than the forecasts made in 2007. The Riksbank's forecasts were in the middle of the range for 2006 and thus appear to have been relatively accurate. The majority of the forecasters adjusted their forecasts upwards at the beginning of 2007. They all appear to have overestimated the GDP outcome. This is partly explained by the growth figures for the first half of the year being adjusted downwards by 0.3 percentage points in connection with the publication of the statistics for the third quarter. The Riksbank also adjusted its forecast upwards during 2007 but the figure shows that the Riksbank was not as optimistic about developments as other analysts from the middle of the year.

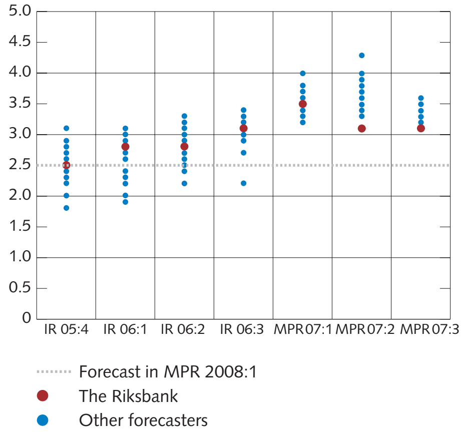
Figure 26. Forecasts for GDP growth for 2006 made at different points in time
Annual average



Note. The Riksbank's forecasts for IR 05:1 and IR 05:2 are the forecasts made on the assumption that the repo rate will follow the so-called implied forward rates. See footnote 21.

Sources: Consensus Economics Inc, the Ministry of Finance, the Swedish Trade Union, Statistics Sweden and the Riksbank

Figure 27. Forecasts for GDP growth for 2007 made at different points in time
Annual average



Note. See footnote 21.

Sources: Consensus Economics Inc, the Ministry of Finance, the Swedish Trade Union, Statistics Sweden and the Riksbank

24 See M. Andersson et al, "An evaluation of the Riksbank's forecasting performance", *Economic Review*, No. 3, 2007, Sveriges Riksbank.

Table 2. Inflation forecasts in 2005, 2006 and 2007
Annual average

	IR 05:1	IR 05:1	IR 05:2	IR 05:2	IR 05:3	IR 05:4	IR 06:1	IR 06:2	IR 06:3	MPR 07:1	MPR 07:2	MPR 07:3	MPU dec07	Outcome
CPI 2007	2.1*	2.4	1.8*	1.9	2.1	2.1	2.1	2.3	2.0	1.5	2.1	2.1	2.2	2.2
CPIX 2007	2.0*	1.9	1.6*	1.6	1.6	1.6	1.5	1.6	1.3	0.7	1.1	1.1	1.2	1.2
GDP growth 2006	3.2	2.7	2.7	2.6	3.0	3.2	3.5	3.7	4.3	4.5	4.2	4.2	4.1	4.1
GDP growth 2007	2.8	2.3	2.7	2.4	2.5	2.5	2.8	2.8	3.1	3.5	3.1	3.1	2.6	

Note.* 12-month rate.

The forecast figures in the grey-coloured fields are the main scenarios in the reports IR05:1 and IR05:2, which are based on the assumption that the repo rate remains unchanged during the forecast period. The forecast figures in the white-coloured fields for IR05:1 and IR05:2 are based on the assumption that the repo rate develops in line with a 15-day average of the so-called implied forward rates. The forecast figures from IR05:3, IR05:4, IR06.1, IR06:2 and IR06:3 are based on the assumption that the repo rate develops in line with a 15-day average of the so-called implied forward rates; this was the main scenario in these reports. The forecast figures from MPR07:1, MPR07:2, MPR07:3 and MPU Dec are based on the assumption that the repo rate develops in line with the Riksbank's repo rate forecast which was presented in the respective reports.

Sources: Statistics Sweden and the Riksbank

■ CHAPTER 5 – Monetary policy 2005 - 2007

After the repo rate cut in the middle of 2005, the Riksbank held the repo rate unchanged during the remainder of the year. At the beginning of 2006 the Riksbank began to raise the rate and continued with this during 2006-2007. For monetary policy, the overall balance during the period has been the pace at which the repo rate should be raised given the low inflation rate initially, the continued economic upturn and the risk of an overly rapid increase in the rate of inflation later on. The Riksbank's assessment during the period was that the repo rate should be raised at a pace that allowed inflation to gradually rise towards the target. At the same time this meant that inflation would be low during a relatively long period of time. The Riksbank's assessment was that such a monetary policy would contribute to CPI inflation being around 2 per cent in 2007 and CPIX inflation being around 1.5 per cent, which corresponded relatively well with the outcome. [25]

Decisions in 2005

Unchanged interest rate at the beginning of the year

At the beginning of 2005 the information received implied that the economic upswing was continuing roughly as expected. Growth appeared to have slowed down somewhat, but was nevertheless expected to be strong. It was not yet possible to see any turnaround in the labour market, but the forecasts of good growth implied that employment would begin to increase later on. Inflation was low, but as resource utilisation was expected to increase, it was reasonable to assume that inflation would gradually rise.

At the same time, there were several factors, including initial low resource utilisation, indicating that inflation would be low for a large part of the coming two-year period. In addition, there were signs that strong competitive pressure both abroad and in the Swedish market was slowing down inflation more than the Riksbank had earlier anticipated. In Sweden this applied especially to the domestic food industry. Price pressures were expected to contribute to inflation remaining low during a large part of the forecast period. At the same time, the Riksbank's assessment was that the expansionary economic policy would stimulate the economy significantly. Low interest rates had contributed to a rapid rise in household borrowing and house prices. All in all, this indicated some caution in interest rate policy and the repo rate was kept unchanged at 2 per cent at the monetary policy meetings in January and March.

At their monetary policy meeting in April the members of the Executive Board observed that the uncertainty regarding the strength of the economic upturn had increased. An unexpectedly high oil price and signals of weaker developments in the euro area indicated that the upswing in the world economy would not be as strong as assumed in earlier forecasts. Swedish exports of goods and industrial production also appeared to be increasing less than expected and the labour market remained weak. At the same time, most indications were that consumption and investment were increasing roughly in line with the forecasts. The overall inflation prospects were assessed

25 At the end of the chapter there is a compilation of all repo rate decisions made in 2005-2007, including reservations entered against the decisions.

to be roughly the same as before, and the repo rate was therefore left unchanged in April, too.

Interest rate cut in June

In June, the repo rate was cut by 0.5 percentage points to 1.5 per cent. New statistics showed that the economy had grown much more slowly than expected during the first quarter. The slowdown was broad and covered both exports and consumption. Although most indications were that this was a temporary slowdown in economic activity, the weak growth in the first quarter meant that the growth forecast for the short term was revised down substantially. As before, the Bank's assessment was that resource utilisation and domestic cost pressures would rise, but now from a lower level than expected. At the same time, the oil price had continued to rise and the exchange rate had weakened during the first half of the year. This indicated slightly higher inflation in the short term, despite weaker growth. All in all, however, the various factors indicated lower inflation in the slightly longer term than previously expected. The fact that households were borrowing at a rapid rate, while house prices rose, led to some continued concern that monetary policy might perhaps be too expansionary. But the weaker demand and the fact that inflation was now expected to be below the target two years ahead weighed heavier. The conclusion was therefore that there was reason to cut the interest rate.

Unchanged repo rate during second half of the year

During the second half of the year there were several signs that the economic upswing had gained new impetus. Revised statistics also indicated that the slowdown at the beginning of the year had been less profound than had previously appeared to be the case, although the growth forecasts from the beginning of the year still appeared to have been too optimistic. There were also indications that the situation in the labour market was about to improve. More expansionary economic policy, as a result of both the lower interest rate and the fiscal policy plans presented in the Budget Bill for 2006 also indicated that growth would be slightly higher than in the earlier assessments. Inflation was expected to continue to increase as a result of rising resource utilisation in Sweden and abroad, but the Riksbank's assessment was that inflation would rise at a fairly moderate pace. The repo rate was therefore left unchanged in both August and October.

In December the Riksbank observed that new statistics showed that developments were slightly stronger than expected and that growth prospects were therefore less uncertain than before. Inflation had risen, but was still low and as before the Riksbank's assessment was that inflation would increase, but at a moderate pace. The interest rate was therefore left unchanged in December, too. The Executive Board pointed out that the risks of higher inflation were now greater than the risks of lower inflation, and that one could not rule out the possibility that the repo rate might need to be raised more during the winter and spring than the market rates implied.

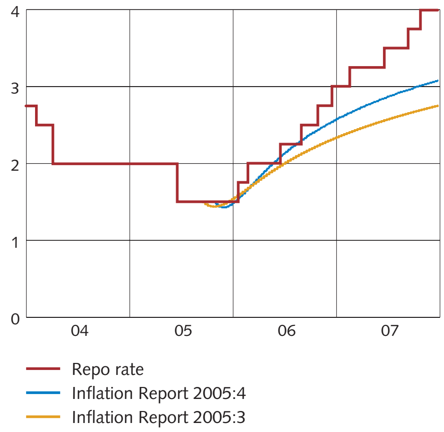
Reactions to the Riksbank's monetary policy during 2005

In the third Inflation Report of 2005 the Riksbank for the first time based the forecasts in its main scenario on market expectations as reflected in the so-called implied forward rates.[26] Unlike the earlier assumption of a constant repo rate, the forecasts were based on an assumption where the repo rate could vary during the forecast period. In this way the natural focus was more on interest rates across the entire forecast period and not merely on the current interest rate decision.

The market expectations on which the forecasts in the third report in 2005 were based are shown in Figure 28. The Executive Board commented on this development of the implied forward rates in the press release published in connection with the interest rate decision. The assessment was that such a path for the interest rate would provide a reasonable development in inflation during the coming years. As a reaction to this, some interest rates fell slightly and some market agents changed their monetary policy expectations for the coming year in line with the Executive Board's assessment of future developments.

When the interest rate decision and the fourth Inflation Report were published in December 2005, they aroused considerable attention in the financial markets. The Executive Board's assessment on this occasion was that the repo rate might need to be raised more during the coming six months than was implied by the market rates (see Figure 28). This statement had a relatively large impact on the fixed income and foreign exchange markets. The general interpretation was that the Riksbank had changed its tone, but opinions among market agents varied as to why this had happened. The debate following the interest rate decision was largely centred on what implied forward rates the Executive Board had spoken about – the ones on which the forecasts were based or those prevailing at the time of the statement.

Figure 28. Repo rate outcome and implied forward rates in 2005
Per cent



Note. The implied forward rates are the 15-day average that the forecasts for the main scenario in Inflation Report 2005:3 and 2005:4 are based on.

Source: The Riksbank

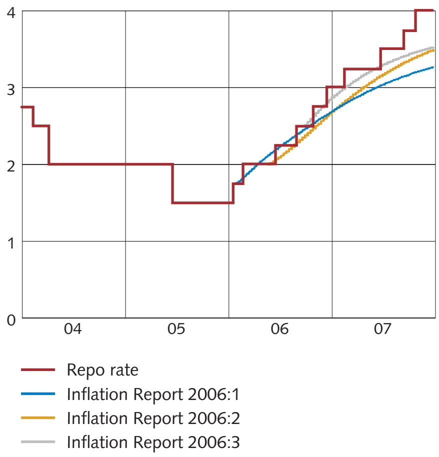
Decisions in 2006

Interest rate raised in January and February

At the beginning of 2006 the Riksbank's assessment was that the economic upswing would continue during the year, but then slow down somewhat. The situation in the labour market also appeared to have brightened. But as productivity was increasing rapidly at the same time, the Riksbank's assessment was that cost pressures would nevertheless be subdued. Inflation was low, but was expected to increase and to be close to the target a couple of years ahead. The assessment assumed that the Riksbank raised the repo rate at the beginning of the year and that the increases would then gradually continue in line with the financial markets' expectations. For these

26 See Chapter 4.

Figure 29. Repo rate outcome and implied forward rates in 2006
Per cent



Note. The implied forward rates are the 15-day average that the forecasts for the main scenarios in the 2006 Inflation Report are based on.

Source: The Riksbank

reasons the Executive Board decided to raise the repo rate by 0.25 percentage points at the monetary policy meetings in both January and February. In February the Executive Board noted that the repo rate might be increased at a slightly slower rate in future than the interest rate path on which the forecasts were based (see Figure 29).

Both in January and February the Executive Board considered that there were reasons to give consideration to the fact that house prices and lending to households had risen over a number of years in a row at a rate that did not appear sustainable in the long term. This could entail risks of severe fluctuations in the economy further ahead. One way of giving consideration to these risks was to raise the interest rate slightly earlier than would otherwise have appeared to be the most suitable point in time. The purpose was to contribute to slowing down house prices and thereby to ensure that the real economy and inflation would also show stable development in a longer term perspective.

In April new information pointed to economic activity abroad being slightly stronger than expected. The view of Swedish economic activity remained largely unchanged, however. Although new statistics showed that developments towards the end of 2005 had been weak, several indicators implied that this had been a temporary slowdown. Inflation had been slightly higher than expected, which was largely explained by energy prices being unexpectedly high. The Executive Board's assessment was that this was a temporary rise. The repo rate was therefore left unchanged at 2 per cent at the monetary policy meeting in April.

Continued interest rate increases during the remainder of the year

In June 2006, when the second Inflation Report of the year was published, the Executive Board's assessment was that it was time to raise the interest rate again by 0.25 percentage points. New statistics indicated that the upswing in economic activity had continued. Both growth and employment appeared to be increasing a little more quickly in future. At the same time, energy prices had risen more than expected, which made the Riksbank adjust its inflation forecast for the immediate future upwards. In the long term, the forecasts showed that inflation would rise towards the target level approximately as the Riksbank had assessed earlier, if the Bank gradually raised the repo rate. The Executive Board noted on this occasion that it was possible that there was a need for slightly more interest rate increases over the coming year than the market had recently been expecting (see Figure 29).

During the second half of the year new statistics on the National Accounts and labour market showed that the upswing in economic activity was stronger than the Riksbank had expected. The fact that household indebtedness and house prices were continuing to rise rapidly supported the picture of strong demand. Productivity had increased surprisingly rapidly and the Riksbank also noted that the labour market situation had clearly improved, which was reflected in the fact that employment had accelerated. All of this indicated that the Riksbank would need to raise the repo rate further so inflation would be in line with the target. The repo rate was therefore raised by 0.25 percentage points both in August and October 2006. Although the Riksbank's assessment in October was that inflation would be slightly below target two years ahead, it also assumed that this would be partly due to falling energy prices temporarily slowing down the rate of price increase. When this effect had finally abated, the Riksbank believed that inflation would rise again.

In December the Executive Board raised the repo rate by 0.25 percentage points again, as economic activity remained strong and inflation was rising. As before, inflation was expected to be close to the target two years ahead if the repo rate was raised gradually.

Reactions to the Riksbank's monetary policy during 2006

In contrast to December 2005, the reactions were minor when the interest rate decision was published in February 2006, despite the Executive Board noting in its press release announcing the decision that the repo rate might be raised at a slightly slower pace in future than the interest rate path on which the forecasts were based (see Figure 29). Immediately prior to the interest rate decision, however, surprisingly low monthly statistics had been published for the CPI, which had led to the market already adjusting down its expectations of future repo rate developments.

In winter 2005/2006 there was some uncertainty among certain market agents regarding the dating of the implied forward rates to which the Executive Board referred in its interest rate decision. After a speech and the interest rate decision made in April, the communication from the Riksbank was perceived as clearer.[27] The Executive Board's statement in June that it was possible that there was a need for more interest rate increases over the coming year than the market had recently been expecting caused the long-term rates in particular to rise and market agents adjusted their forecasts for the interest rate upwards. The reports and interest rate decisions taken during the remainder of 2006 did not give rise to any major surprises.

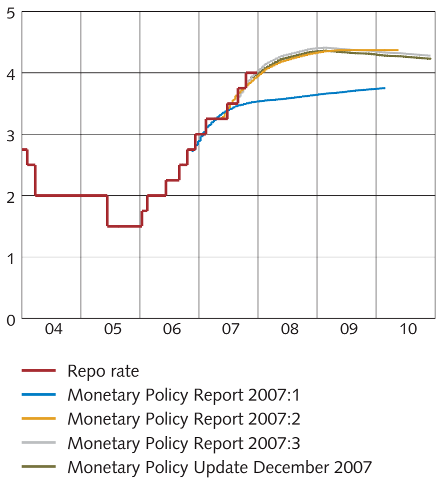
Decisions in 2007

Interest rate raise in February and forecast for further raises

At the beginning of the year the Riksbank foresaw strong economic activity both in Sweden and abroad. Employment and productivity were still expected to continue to increase at a rapid pace, although the Riksbank's assessment was that productivity growth would slacken as the labour market situation improved. It appeared that prices would rise at a slower pace than expected as a result of lower energy prices and a stronger krona in 2007, but the Riksbank's assessment was that inflation would rise gradually as resource utilisation increased.

27 See Irma Rosenberg, "The Riksbank's inflation targeting policy – the significance of the new interest rate assumption", speech, 19 April 2006.

Figure 30. Repo rate forecasts on different occations in 2007
Per cent



Source: The Riksbank

In February the Riksbank presented its own interest rate forecast for the first time. According to this forecast the repo rate would need to be raised a couple of times during the first half of the year so that inflation would be on target and the real economy would develop in a balanced manner (see Figure 30). At its monetary policy meeting in February the Executive Board therefore decided to raise the repo rate by 0.25 percentage points to 3.25 per cent.

Unchanged interest rate in the spring but revised assessment of future interest rates

In March the assessment of economic and inflation prospects had only changed marginally. Although the new wage agreements beginning to emerge from the bargaining rounds appeared to slightly increase the risks of higher inflationary pressures. But the Riksbank considered it was too early to draw any conclusions regarding the effects of the agreements on cost pressures before the wage bargaining rounds were complete. Given this, the repo rate was kept unchanged in accordance with the repo rate path published in February. At the same time, as in February, the assessment was that the repo rate would need to be raised by a further 0.25 percentage points over the coming months and that it would after that probably be possible to pause before making a further increase.

In May the picture of rising cost pressures was reinforced. Although economic activity developed roughly in line with the Riksbank's forecast there were factors that could increase inflationary pressures. Fiscal policy looked to be more expansionary than had been previously assumed and unemployment had been slightly lower. The wage bargaining rounds also looked to result in higher wage increases than had been forecast earlier. However, there were also factors that indicated that inflation could be held back, for instance, continued good productivity growth and low import prices. Given this, the Executive Board decided to hold the repo rate unchanged. No new interest rate path was published, but the Executive Board made a qualitative assessment of the forecast published in February. The assessment was that developments in cost pressures probably meant that the repo rate would need to be raised more than implied in the February forecast.

Interest rate raise in June and interest rate forecast adjusted upwards

In June, new statistics showed that GDP growth in Sweden in the first quarter had slowed down surprisingly rapidly. But various indicators implied that the weakening in growth was only temporary. Economic activity abroad was still developing strongly and households' disposable incomes were expected to increase substantially. The picture became increasingly clear that the labour market was tighter and cost pressures were rising. The low productivity growth together with high wage increases led to unit labour costs soaring as early as the first quarter after remaining largely unchanged for three years.

The increased cost pressures and the strong economic activity meant that the Riksbank raised the repo rate by 0.25 percentage points to 3.5 per cent. The decision was in line with the forecast for the interest rate made in February. But at the same time the Executive Board adjusted up its forecast for the interest rate path in the coming years (see Figure 30). The Executive Board estimated that the repo rate should be around 4 per cent at the end of the year and then be followed by a further raise or couple of raises in the coming years.

Increased uncertainty in the autumn but interest rate raises in line with earlier assessment

During the second half of the year there were further signs that reinforced the picture of a tighter labour market and higher cost pressures. Employment increased at approximately the rate expected, but the labour supply showed weaker development. Open unemployment was therefore lower than forecast. Growth in the second quarter was slightly higher than expected and various survey data pointed to economic activity having been strong over the summer. The Riksbank considered that productivity growth was a key factor in the assessment of how inflation would develop over the coming years. Productivity had shown weaker growth than expected during the first quarter. As inflation had increased, companies and households had revised up their inflation expectations for the coming year.

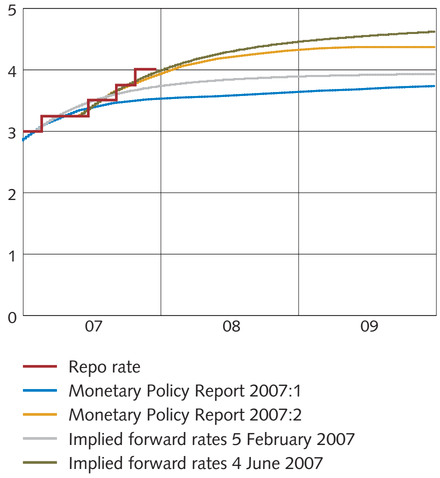
The new information on the Swedish economy thus implied that inflationary pressures were slightly stronger than expected and that the forecast for the repo rate therefore needed to be adjusted slightly upwards. On the other hand, uncertainty regarding the strength of international growth had increased substantially. This was due to the financial turmoil in summer 2007 that had broken out in the wake of the crisis in the US mortgage market. The Riksbank's assessment was that this could also slow down growth in the Swedish economy somewhat.

All in all, the conclusion in September and October was therefore that the repo rate would need to be raised at around the same pace as assumed by the Executive Board in June. The repo rate was therefore raised by 0.25 percentage points both in September and October (see Figure 30). During the final quarter the uncertainty regarding international developments increased as a result of the financial turmoil. Swedish growth also looked to be slowing down sooner than expected. The financial turmoil meant that the spreads increased between interbank rates and government bond rates. This led to loan costs rising for companies and households, which was expected to subdue demand. At the same time, inflation was higher than expected. The situation thus remained difficult to assess with different forces pulling in different directions. The repo rate was held unchanged and the interest rate forecast was left largely unchanged in December.

Reactions to the Riksbank's monetary policy and interest rate forecasts during 2007

In the first Monetary Policy Report published in February 2007 the

Figure 31. Repo rate outcome, repo rate forecasts and implied forward rates at certain points in 2007
Per cent



Note. Implied forward rates are calculated on the basis of Forward Rate Agreements (FRAs), which reflect market expectations of short-term interest rates.

Source: The Riksbank

Riksbank for the first time based its forecasts on its own assessment of the future development of the repo rate. The forecast presented pointed to the repo rate path only needing to be raised moderately in the coming years (see Figure 31). This surprised some economic analysts and market agents who had adjusted their own interest rate forecasts upwards in connection with a general upturn in international interest rates (see Figure 31). The reactions were therefore relatively strong. Interest rates fell and the krona depreciated. But given the difference that existed between the Riksbank's and other analysts' forecasts, the interest rate decline was nevertheless fairly limited. Even after this the implied forward rates curve was higher than the Riksbank's forecast interest rate path. One reason was that certain market agents had made a different assessment of the economic situation and its effects on inflationary pressures. They believed that the Riksbank would gradually need to revise its assessment of inflationary pressures and raise its forecast for the interest rate. However, there were relatively substantial differences between different analysts and some were close to the Riksbank's view of economic prospects and the need for interest rate increases.

In the second Monetary Policy Report published in June the Riksbank had adjusted its forecast for the repo rate path upwards (see Figure 31). New statistics showed that the labour market had become tighter and the results of the wage agreements were higher than expected. The assessment was therefore that the increased cost pressures meant that the repo rate would need to be raised more in the future than assumed in the previous forecast. Once again the market reactions to the Riksbank's forecast were relatively strong. This time interest rates rose relatively substantially and the krona strengthened considerably. The Riksbank's forecast for the interest rate path in the short term did not differ very much from market expectations. However, the implied forward rates were above the Riksbank's forecast for the interest rate in the longer term. Despite this, both short-term and long-term interest rates rose when the Riksbank published its forecast. The strength of the market reactions can be partly explained by international interest rates rising. Market agents had probably also expected the Riksbank to publish a lower interest rate forecast.

The Riksbank's forecast for the repo rate presented in the third report in October concurred well with the forecasts made by other analysts and the reactions to the publication of the report were relatively mild. After the monetary policy meeting in December the Riksbank published a Monetary Policy Update for the first time. When this update, which included a new interest rate forecast, was presented interest rates fell slightly.

During the year there was some criticism of the Riksbank, partly because some of the forecasts had surprised the market. The criticism also applied to the changes in the monetary policy communication implemented by the Executive Board in spring 2007, in particular the publication of an own interest rate forecast and the decision to only give signals regarding future monetary policy in connection with monetary policy meetings.[28] Members of the Riksbank's Executive Board commented on this in speeches and pointed out that the reason behind the changes was to be even more open and clear about how monetary policy is conducted. At the same time, they emphasised that it would take some time for all parties to adapt and that communication between the parties would become better as they gained more experience of the new system. The Executive Board decided in September to begin publishing interest rate forecasts in connection with each monetary policy meeting to become even clearer in its communication and to meet the need for more information.[29]

Assessment of monetary policy

The Riksbank broadly envisaged a continued economic upswing in 2005 and 2006 where cost pressures and resource utilisation would increase gradually. Inflationary pressures were nevertheless expected to remain low due to a number of factors holding back inflation. One such important factor was the rapidly rising productivity.

During the second half of 2005 the Riksbank held the repo rate unchanged. At the beginning of 2006 the Riksbank began to raise the interest rate and continued with this during 2006-2007. For monetary policy, the overall balance during the period was the pace at which the repo rate should be raised given the low inflation rate initially, the continued economic upturn and the risk of an overly rapid increase in the rate of inflation later on.

The Riksbank concluded that the repo rate should be raised at a pace that allowed inflation to gradually rise towards the target. Inflation was thus expected to be below the target for a relatively long period of time before it approached the target. The Riksbank assessed that such a policy would contribute to CPI inflation being around 2 per cent and underlying inflation (CPIX) around 1.5 per cent in 2007. Inflation in 2007 was well in line with these forecasts. With the monetary policy it conducted the Riksbank anticipated that economic growth would continue to be high, which was also the case.

Assessing monetary policy with hindsight is risky. The economy is constantly subjected to shocks that are difficult, or even impossible, to predict. One example is energy prices, which have fluctuated substantially during the assessment period and sometimes held back, sometimes pushed up the CPI and CPIX outcomes. A more interesting question is therefore whether monetary policy has been well balanced, given the information that was available on the occasions when the decisions on the repo rate were made. Given this starting point and in light of the development of the economy between 2005 and 2007, the Riksbank's assessment is that monetary policy in 2005 and 2006 was well balanced. It is too early to make a similar assessment of monetary policy in 2007. Such an assessment will be available in next year's material for assessing monetary policy.

28 See Irma Rosenberg, "Changes in the monetary policy communication", press release no. 22, 11 May 2007.

29 See "Repo rate path after each monetary policy meeting", press release no. 36, 7 September 2007.

Repo rate decisions 2005

27 January:	The repo rate was held unchanged at 2.0 per cent.
14 March:	The repo rate was held unchanged at 2.0 per cent.
28 April:	The repo rate was held unchanged at 2.0 per cent.
20 June:	The repo rate was cut by 0.5 percentage points to 1.5 per cent.
23 August:	The repo rate was held unchanged at 1.5 per cent.
19 October:	The repo rate was held unchanged at 1.5 per cent.
1 December:	The repo rate was held unchanged at 1.5 per cent.

Deputy Governors Villy Bergström, Lars Nyberg and Eva Srejber entered a reservation against the decision, believing instead that the repo rate should be raised by 0.25 percentage points. They considered that there were more indications of a stable and durable upturn in economic activity and that it was now desirable to initiate the gradual tightening of monetary policy that they anticipated. This in order to reduce the risk of a further weakening of the krona due to rising interest rates in Europe and so that increased interest rates would send a signal to the housing market that the present price rises were unsustainable.

Repo rate decisions 2006

19 January:	The repo rate was raised by 0.25 percentage points to 1.75 per cent.
22 February:	The repo rate was raised by 0.25 percentage points to 2.0 per cent.
27 April:	The repo rate was held unchanged at 2.0 per cent.
19 June:	The repo rate was raised by 0.25 percentage points to 2.25 per cent.
29 August:	The repo rate was raised by 0.25 percentage points to 2.5 per cent.
25 October:	The repo rate was raised by 0.25 percentage points to 2.75 per cent.
14 December:	The repo rate was raised by 0.25 percentage points to 3.0 per cent.

Repo rate decisions 2007

14 February:	The repo rate was raised by 0.25 percentage points to 3.25 per cent.
29 March:	The repo rate was held unchanged at 3.25 per cent.

Deputy Governor Svante Öberg entered a reservation against the decision and considered that the repo rate should be raised by 0.25 percentage points and that the interest rate path should be revised upwards. He said that the upside risks had increased significantly since the monetary policy meeting in February.

Developments in the real economy had been stronger than forecast, the labour market had continued to improve more quickly than anticipated and the wage bargaining rounds appeared to be resulting in higher wages than expected.

3 May: The repo rate was held unchanged at 3.25 per cent.

Deputy Governors Svante Öberg and Lars Nyberg entered a reservation against the decision and considered that the repo rate should be raised by 0.25 percentage points and that the interest rate path should be revised upwards. They both considered that the upside risks had increased significantly since the monetary policy meeting in February. Economic developments were stronger, the wage bargaining rounds appeared to be resulting in higher wages, fiscal policy was more expansionary than predicted and credit expansion remained high.

19 June: The repo rate was raised by 0.25 percentage points to 3.5 per cent.

Deputy Governor Svante Öberg entered a reservation against the Monetary Policy Report. Mr Öberg considered that the report in itself provided a good base for the Executive Board meeting and he agreed on the whole with its description of economic developments in recent years. But Mr Öberg's own assessment was that inflationary pressures would become stronger over the coming years than described in the main scenario. He therefore considered that the policy rate would probably need to be raised more than in the main scenario.

6 September: The repo rate was raised by 0.25 percentage points to 3.75 per cent.

29 October: The repo rate was raised by 0.25 percentage points to 4 per cent.

Deputy Governor Svante Öberg entered a reservation against the Monetary Policy Report. His assessment was that developments in the labour market would be stronger and wage increases would be higher than assumed in the Report. This meant that inflationary pressures would be higher and there would be a greater need to raise the repo rate. Mr Öberg was therefore more inclined to support the interest rate path reported in the alternative scenario where wages rose more and productivity was lower than in the interest rate path in the main scenario of the Report.

18 December: The repo rate was held unchanged at 4 per cent.

Deputy Governor Svante Öberg entered a reservation against the decision to hold the repo rate unchanged and considered that it should be raised by 0.25 percentage points. He also entered a reservation against the Monetary Policy Update and against the repo rate path reported in the Update. Mr Öberg's assessment was that developments in the labour market would be stronger and inflationary pressures higher than in the Monetary Policy Update. According to Mr Öberg, economic prospects indicated a relatively high repo rate in 2008, with a possible interest rate cut further ahead if inflationary pressures slackened.

Table 2. Outcomes and forecasts made for different variables during 2005, 2006 and 2007.
Annual average unless otherwise stated

	IR 05:1	IR 05:1	IR 05:2	IR 05:2	IR 05:3	IR 05:4	IR 06:1	IR 06:2	IR 06:3	MPR 07:1	MPR 07:2	MPR 07:3	MPU:Dec	Outcome
GDP growth 2006	3.2	2.7	2.7	2.6	3.0	3.2	3.5	3.7	4.3	4.5	4.2	4.2	4.1	4.1
GDP growth 2007	2.8	2.3	2.7	2.4	2.5	2.5	2.8	2.8	3.1	3.5	3.1	3.1	2.6	
GDP OECD19 2006	2.8	2.8	2.6	2.6	2.4	2.4	2.5	2.8	3.2 [3]	3.2 [3]	3.2 [3]	3.0 [3]	3.0 [3]	3.0 [3]
GDP OECD19 2007	2.7	2.7	2.7	2.7	2.6	2.5	2.5	2.5	2.6 [3]	2.7 [3]	2.6 [3]	2.5 [3]	2.7 [3]	
TCW [5] 2007	122.5		123.2		124.4	125.4	124.5	126.5	125.4	124.0	124.8	124.9		125.2
Productivity in the business sector 2006	2.3		2.3		2.7	2.7	2.8	2.6	3.3					3.4
Productivity in the whole economy 2007	2.1 [2]		2.1 [2]		2.5 [2]	2.5 [2]	2.6 [2]	2.5 [2]	1.9	1.7	1.0	0.1		
Wages in the whole economy, 2007 (Hourly wage, NMO)	4.2 [2]		3.9 [2]		3.9 [2]	3.9 [2]	3.9 [2]	3.9 [2]	3.8	3.8	3.9	3.9		
Unit labour costs in the business sector 2006	2.1		1.9		1.1	1.1	1.0	0.2	-0.7					-0.1
Unit labour costs in the whole economy 2007	2.2 [2]		1.9 [2]		1.8 [2]	1.8 [2]	1.7 [2]	2.9 [2]	2.9	2.8	4.2	4.8		
Employed 2006	1.4		0.7		1.1	1.1	1.5	1.7	1.9	1.9	1.9	1.8		1.8
Employed 2007	1.2		0.9		0.6	0.6	0.6	1.0	1.1	2.1	2.3	2.6		2.4
Open unemployment 2006 [4]	4.4		4.9		5.0	5.0	5.0	5.5	5.4	5.4	5.4	5.4		5.4
Open unemployment 2007 [4]	4.0		4.5		4.6	4.6	4.8	5.1	5.4	5.1	4.7	4.6		4.6
CPI 2007	2.1 [1]	2.4	1.8 [1]	1.9	2.1	2.1	2.1	2.3	2.0	1.5	2.1	2.1	2.2	2.2
CPIX 2007	2.0 [1]	1.9	1.6 [1]	1.6	1.6	1.6	1.5	1.6	1.3	0.7	1.1	1.1	1.2	1.2
CPIX excl. energy 2007									1.3	1.2	1.3	1.4	1.4	1.5

Note. [1] 12-month rate, [2] in the business sector, [3] the whole of the OECD, [4] per cent of labour force, [5] exchange rate, Index 19 November 1992 = 100

The forecast figures in the grey-coloured fields are the main scenarios in the reports IR05:1 and IR05:2. which are based on the assumption that the repo rate remains unchanged during the forecast period. The forecast figures in the white-coloured fields for IR05:1 and IR05:2 are based on the assumption that the repo rate develops in line with a 15-day average of the so-called implied forward rates. The forecast figures from IR05:3, IR05:4, IR06:1, IR06:2 and IR06:3 are based on the assumption that the repo rate develops in line with a 15-day average of the so-called implied forward rates; this was the main scenario in these reports. The forecast figures from MPR07:1, MPR07:2, MPR07:3 and MPU are based on the assumption that the repo rate develops in line with the Riksbank's repo rate forecast which was presented in the respective reports.

Sources: OECD. Statistics Sweden and the Riksbank.

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