Sveriges Riksbank

Inflation Report September 1997

Contents

Foreword

It was in October 1993, roughly four years ago, that the Riksbank began to publish inflation reports. Since 1996 the reports appear four times a year. The present report is the fourteenth in the series.

The purpose of the reports is to provide a basis for monetary policy decisions and also to make our deliberations known to a wider public so that monetary policy is easier to follow. The reports, moreover, are intended to encourage a discussion of matters relating to monetary policy.

This report is arranged like its predecessors. It focuses on economic developments since the previous report and their significance for future inflation and monetary policy. The aim is to present a comprehensive picture of the factors and deliberations that guide the Riksbank's assessment of inflation. The underlying statistical material is contained in an annex of diagrams and tables.

The work on the report has been done mainly in the Economics Department of the Riksbank, where it has been led by the head of the Department, Claes Berg, and Tor Borg from the Price Analysis Division.

The inflation report served as a basis for the Governing Board's discussion of monetary policy on 11th September 1997. The conclusions from that discussion are presented in Chapter 3.

Stockholm, September 1997

Urban Bäckström
Governor of Sveriges Riksbank

Summary

Registered CPI inflation has been in line with the assessment in the June report. The inflation rate has moved up from the low levels in late 1996 and early 1997. Underlying inflation has also tended to rise. It, as well as CPI-inflation, is now inside the inflation target's tolerance interval.

The recovery in the domestic economy is continuing. With the upswing during the first half of 1997, moreover, the tendencies have become more balanced. Growth picked up in the second quarter, with contributions from private consumption as well as investment and exports. Public consumption is still decreasing.

The GDP growth rates for 1997 and 1998 are judged, as in the June report, to be around 2 and around 3 per cent, respectively. A somewhat higher rate of just over 3 per cent is foreseen for 1999. Although the economy will be expanding at more than its potential rate in 1998 and 1999, no general capacity shortages are expected to develop in the coming two years.

The Riksbank considers that, with an unchanged monetary policy, annual CPI inflation will be around 1 per cent for 1997 and around 2 per cent for 1998 and 1999, with some upward tendency in the latter two years. The various measurements of underlying inflation that the Riksbank uses correspond with this picture.

Assessments of inflation are bound to be uncertain and this uncertainty grows with the time horizon. Some factors that are considered to be particularly relevant for the assessment of inflation in the coming years are inflation expectations and wage formation, the inflation propensity and capacity utilisation, and the course of economic activity.

Monetary policy has the task of keeping inflation expectations down and preventing inflationary pressure from arising. In this way monetary policy can safeguard the value of money and fulfil the inflation target. Moreover, the approach to monetary policy should be forward-looking so as to avoid abrupt shifts and large changes in interest rates and thereby contribute to a stable economic development. Considering the main scenario for inflation and the current spectrum of risks, the monetary policy is judged to be well balanced. At the same time, with the present economic development it is particularly important that incoming information is carefully monitored to detect any changes in the picture of inflation.

Chapter 1

Developments since the June report

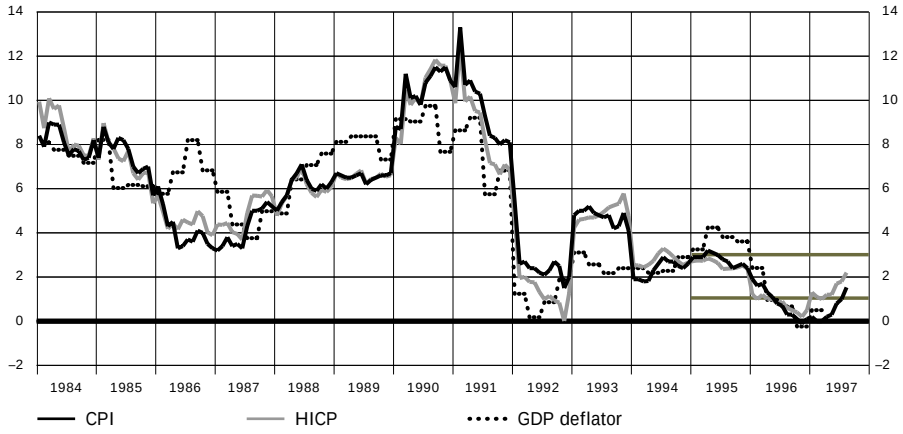
Economic developments since the previous inflation report are discussed in this chapter, focusing on circumstances that have a bearing on future inflation. The account begins with the development of inflation in recent months, followed by an analysis of various factors that are significant for future inflation, for instance the state of demand and supply as well as inflation expectations. Finally there is a discussion of the direction of monetary policy and recent movements in interest and exchange rates.

Inflation

In August 1997 the consumer price index (CPI) was 1.5 per cent higher than a year earlier (Fig. 1). Since April 1997 the average price level has risen about 0.7 per cent. According to the internationally harmonised index of consumer prices (HICP), the rate of inflation in Sweden in August 1997 was 2.2 per cent. In July 1997 HICP inflation in Sweden was close to the average rate for EU countries. The main difference between the CPI and the HICP is that the latter does not include home owners' capital costs and is therefore not directly affected by interest rate movements.

The annual rate of change in the GDP deflator, which measures the price of all goods and services

Figure 1.
CPI, HICP* and GDP deflator.
Percentage 12-month change



*Harmonised index for international comparisons of consumer price movements; approximate figures before 1996.
Note. The horizontal lines from 1995 onwards represent the Riksbank's tolerance interval for the annual change in the CPI.
Source: Statistics Sweden.

produced in Sweden, was 0.5 per cent in the first quarter of 1997, which is an increase of 0.7 percentage points from the preceding quarter. The largest contribution to the increase came from costs for public consumption, which are mainly determined by the development of public sector wages.

House mortgage interest costs have continued to exert a downward effect on the consumer price rise in 1997 (Fig. 2). Between August 1996 and August 1997 this item has fallen 9.5 per cent. The decline in mortgage costs now seems to have slowed, which means that in future the effects on inflation will be successively smaller. But interest costs will most probably go on contributing to a lower consumer price rise during 1998.

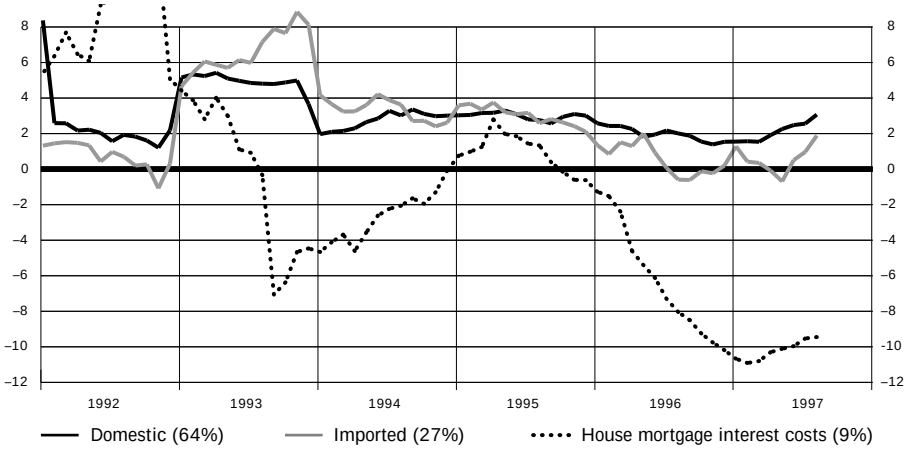
The domestic component of inflation has shown a rising tendency in 1997, though most of this acceleration is due to tax adjustments and altered routines for the CPI calculations.

The domestic component of inflation has shown a rising tendency in 1997, though most of this acceleration is due to tax adjustments and altered routines for the CPI calculations.[1] These two factors combined account for about 1.2 percentage points of domestic inflation, which was 3.1 per cent in August 1997. For goods and services that are mainly imported, the 12-month consumer price rise has been below 1 per cent since the middle of 1996. To some extent the low rates for this component come from remaining effects of the krona's appreciation during 1996. In August 1997 the rate increased to 1.9 per cent. Tax changes had an upward effect of 1.2 percentage points on prices for imported goods and services. Price increases for coffee have also contributed to imported inflation; in August the consumer price of coffee was 34 per cent higher than a year earlier, mainly due to higher world market prices.

Underlying inflation, measured as UND1 and UND2, has shown some upward tendency since the June report (Fig. 3); in August 1997 the 12-month increases were 1.7 and 1.6 per cent, respectively. Both these indicators represent the CPI excluding house mortgage interest costs and effects of changes in indirect taxes and subsidies; UND2 also disregards petroleum and petrol prices. Another indicator of underlying inflation is UND1 excluding prices

1 For the CPI statistics for June onwards Statistics Sweden has adopted a more reliable foundation for the calculation of depreciation on owner-occupied houses; as a result, the monthly increase for this item in June was 11.5 per cent, which raised the level of the CPI by almost 0.2 per cent.

Figure 2.
Components of the CPI. Percentage 12-month change



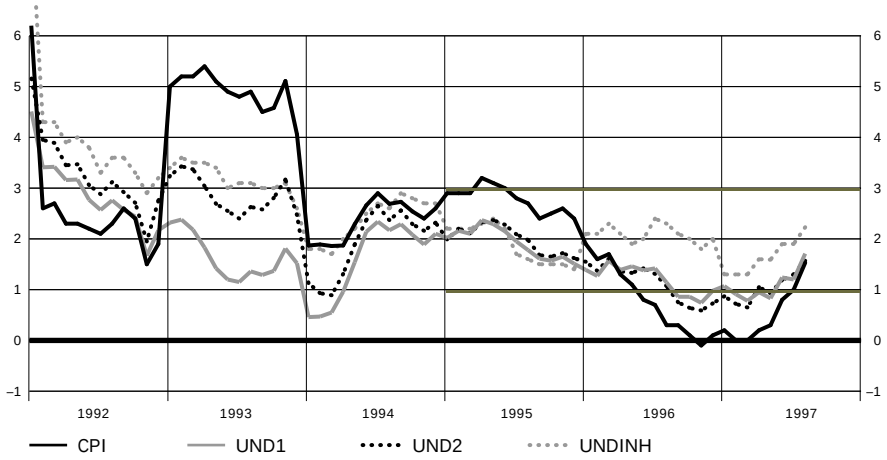
Note. The figures in parentheses are the component's CPI weight in 1997.
Sources: Statistics Sweden and the Riksbank.

of goods that are mainly imported. In the first three months of 1997 the 12-month rate of increase in this measure of underlying domestic inflation, UNDINH, was about 1.3 per cent; since then it has risen successively to 2.2 per cent in August. Factors behind this acceleration are rent increases and Statistics Sweden's altered routines for calculating depreciation on owner-occupied houses.

Registered and underlying inflation have both been in line with the assessment in the June report.

All in all, both registered and underlying inflation have been in line with the assessment in the June report, though imported inflation has risen somewhat more slowly than expected and domestic inflation somewhat faster. The slow increase in imported inflation can be attributed to remaining effects of the krona's appreciation during 1996 and to continued downward pressure on consumer prices. The acceleration of domestic inflation has come largely from administrative prices and indirect taxes; it does not appear to be primarily a consequence of a rapid upswing in demand.

Figure 3.
CPI and underlying inflation.
Percentage 12-month change



Note. The horizontal lines from 1995 onwards represent the Riksbank's tolerance interval for the annual change in the CPI.
Sources: Statistics Sweden and the Riksbank.

MARKET AND ADMINISTRATIVE PRICES IN THE CPI

The rate of price increases is measured in these reports in various ways that involve excluding certain items from the CPI or breaking the index down into sub-components. A new subdivision is presented here.

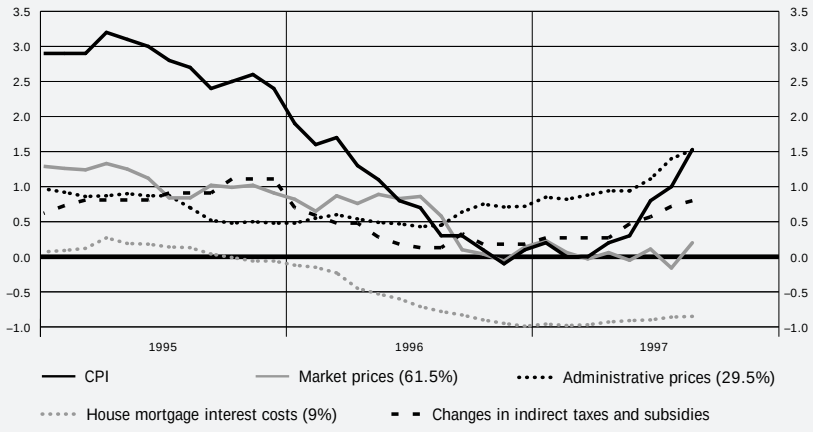
The CPI includes a number of goods and services with prices that are not determined directly by market forces. Pricing in these cases is administrative in nature, often based on costs and not notably susceptible to changes in demand for consumer goods and services. A breakdown of the CPI has been made with this distinction as a starting point; Fig. 4 shows the contributions to CPI inflation that have come from market prices, administrative prices,[2] house mortgage interest costs and changes in indirect taxes and subsidies.

The retardation of inflation during 1996 came mainly from lower interest costs but also from smaller contributions from changes in indirect taxes and subsidies as well as lower increases in market prices. The average rate of inflation during 1996 was 0.8 per cent; contributions of 0.3 percentage points from changes in indirect taxes and subsidies, 0.5 from market prices and 0.6 from administrative prices were offset by an effect of –0.6 percentage points from house mortgage interest costs. During 1997 inflation has turned upwards. The contribution from market prices has been negligible and the effect of interest costs has remained negative, whereas the combined impact of administrative prices, indirect taxes and subsidies has grown from around 1 percentage point at the turn of 1996 to over 2 percentage points in August 1997.

The interpretation suggested by these tendencies is that remaining effects of the krona's appreciation during 1996 and continued downward consumer price pressure have contributed to lower increases in market prices. The acceleration of the administrative price rise can be attributed both to increased pressure from costs (labour costs in particular) and to increased charges as a way of consolidating government finance; it is probably also a consequence of some shift in public financing from taxes to charges.

2 Rent, gas and electricity, depreciation on owner-occupied houses, site leasehold fees, real estate taxes, water, sewage and garbage services, chimney cleaning, vehicle inspection, postal services, TV licences, lotteries, pools and lotto, medicine, health and medical products, medical and dental care are considered administrative prices. These items make up about half of the group that is used to measure domestically generated inflation; this group also includes certain goods and services with market prices where imports are not substantial.

Figure 4.
CPI and contributions to its 12-month changes. Percentage points



Note. Administrative and market prices are shown excluding effects of changes in indirect taxes and subsidies. The figures in parentheses are the component's CPI weight in 1997.
Sources: Statistics Sweden and the Riksbank.

SOME UPWARD TENDENCY IN PRODUCER PRICES

Signs of an upturn in home market prices (the price of goods produced and sold in Sweden) were noted in the June report and this tendency has continued during the summer. It comes mainly from prices for consumer and intermediate goods. In July the price level was 1.2 per cent higher than a year earlier.

From April to July the krona's import-weighted exchange rate strengthened more than 0.3 per cent while import prices rose 0.3 per cent. The price increases came mainly from energy-related goods, which is mostly explained by the dollar's appreciation. The level of import prices in July was 4.3 per cent higher than a year earlier but remains lower than in the first half of 1995 (Annex, Fig. 5).

The upward tendency in producer prices will continue this autumn according to the June business tendency survey.

The June business tendency survey from the National Institute of Economic Research showed that the proportion of manufacturing firms planning price increases in the third quarter of 1997 was larger than the proportion planning price cuts. This applied to domestic as well as export markets and suggests that the rising tendency in producer prices will continue during the autumn.

Notwithstanding the signs of an upward tendency, inflation pressure from producer prices still seems to be relatively weak. But this picture is liable to change at short notice in that producer prices are highly susceptible to exchange rate movements and international market trends.

Factors of importance for future inflation

Economic activity became somewhat subdued, partly as a result of stock reductions, in late 1995 and early 1996. This has been followed by a recovery. After a temporary dip in the first quarter of 1997, growth seems to have picked up in the second quarter. Statistics for recent months present a clear picture of an upswing in most sectors of the economy. They also indicate a development that is more balanced than before. In the first half of 1997 GDP was 1.9 per cent higher than in the same half of 1996, with contributions from private consumption as well as investment and exports. The increased domestic demand also stimulated imports. Public consumption is still decreasing.

BROADER ECONOMIC UPSWING

As regards *mining and manufacturing*, a weaker tendency in the first quarter of 1997 is judged to have given way to an upswing in the second quarter. The National Institute's business tendency surveys suggest that demand for manufactured products has grown appreciably in recent months; the improvement applies to domestic as well as export markets. The surveys also indicate that the volume of production rose sharply from the first to the second quarter and that firms are optimistic about output in the third quarter. Statistics on incoming orders, stocks and deliveries support this picture.

After a weaker tendency in the first quarter, industrial activity picked up in the second quarter.

According to Statistics Sweden's production index, the volume of manufacturing output in the first half of 1997 was about 6 per cent higher than a year earlier.

For the non-industrial business sector, most of the business tendency surveys point to an improvement in activity in recent months.

As regards the *non-industrial business sector*, most of the National Institute's surveys point to an improvement in activity in recent months. Construction is an exception but even here the situation seems to be becoming more stable. Appreciable increases in volume turnover compared with the same period a year earlier are reported for infrequent purchases and car sales, accompanied by overall increases for everyday goods and wholesale trade. Activity in business services rose in the second quarter; the order inflow for computer consultants and computer services continued to grow.

Gross capital formation in mining and manufacturing in the first half of 1997 fell almost 2 per cent in volume from the same period a year earlier. This drop, however, came in the first quarter; in the second quarter the level of industrial investment was higher than in the same quarter a year earlier as well as compared with the first quarter. The May investment survey from Statistics Sweden shows that the volume of industrial investment in 1997 is expected to be unchanged from 1996.

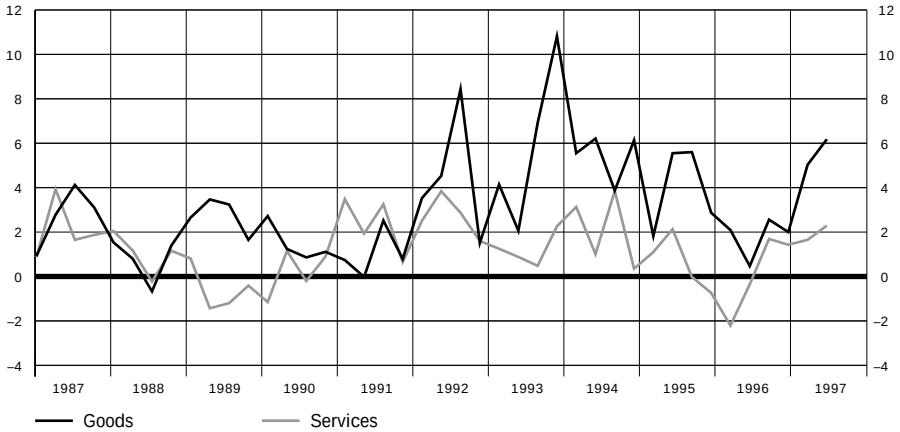
Investment in non-industrial business also rose appreciably in the second quarter this year after a weak tendency in the first quarter. The level in the first half of 1997 was almost 6 per cent higher than in the same period a year earlier.

Signs of good profitability in much of the business sector.

The semiannual reports from listed companies that have been presented to date are difficult to interpret because of the wide diversity in the development of profits compared with the first half of 1996. But several factors point to good profitability in large parts of the business sector. The krona's exchange rate has favoured the profitability of export firms and the development of business sector productivity in the first half of 1997 was also very good. Productivity in the production of goods rose almost 6 per cent from the first half of 1996 and almost 2 per cent in the production of services (Fig. 5). In the economy as a whole, including the public sector, productivity rose almost 4 per cent.

Profitability assessments have been reported by firms in the business tendency surveys since 1996. According to these reports, industrial profitability in the second quarter of 1997 was higher than previously in 1996 and 1997. Profitability has also improved during 1997 in most of the non-industrial business sector.

Figure 5.
Labour productivity for goods and services.
Annual change, per cent



Sources: Statistics Sweden and the Riksbank.

SOME INCREASE IN CAPACITY UTILISATION

Capacity utilisation can be measured in various ways. The data from Statistics Sweden are somewhat more detailed, cover the whole of mining and manufacturing and represent utilisation in the quarter as a whole, while the business tendency data are constructed more simply, cover only manufacturing and represent utilisation at the measurement date. According to Statistics Sweden's surveys, in the first quarter of 1997 the level of industrial capacity utilisation was 87.0 per cent, which was 0.9 percentage points lower than in the fourth quarter of 1996 (Annex, Fig. 4). According to the National Institute's business tendency surveys, on the other hand, in the second quarter of 1997 capacity utilisation in manufacturing rose 2 percentage points from the first quarter to a level of 86 per cent.[3]

A fall in the supply of unutilised resources in manufacturing from the first to the second quarter is consistently indicated by the business tendency survey.

Besides the information about current capacity utilisation, the business tendency surveys provide other data that add to the picture of industrial capacity. These indicators consistently suggest that from the first to the second quarter the supply of unutilised resources decreased. At the end of the second quarter the proportion of firms reporting that output was restricted primarily by the supply of production factors was 29 per cent as against 16 per cent a quarter earlier. This was accompanied by growing shortages of skilled workers and technicians. The proportion reporting a shortage of technicians at the end of the second quarter was 27 per cent, which is almost as high as the levels when activity peaked in 1995. The surveys also indicate that delivery times lengthened in the second quarter.

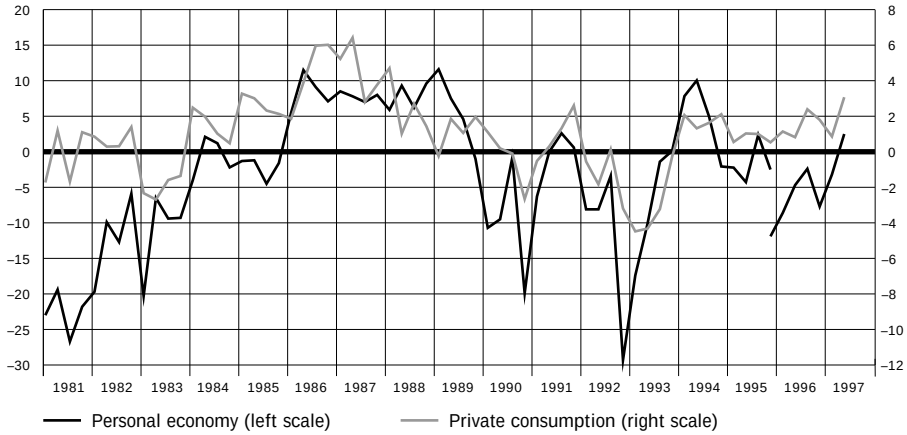
In the services sector there was also an increase in capacity utilisation from the first to the second quarter. For computer consultants and computer services the situation is close to being overheated. At the end of the second quarter almost 90 per cent of computer firms reported they were operating at full capacity.

UPTURN IN PRIVATE CONSUMPTION

Private consumption in the first half of 1997 was 2 per cent higher than in the same half of 1996 (Annex, Fig. 6). Occasional effects, such as an unusually warm winter, exerted a downward pull in the first quarter, for instance on the consumption of heat-

3 These data are reported to the nearest whole number.

Figure 6.
Households' personal economic expectations* and private consumption.
Net figure and annual percentage change



*The HIP statistics were revised in October 1995.
Source: Statistics Sweden.

ing oil and electricity, but in the second quarter private consumption picked up. Retail turnover in the first half of 1997 was about 4 per cent up on the level a year earlier, mainly due to an increase for infrequent purchases. Car sales also made a sizeable positive contribution to the growth of consumption. The expectations reported in the June survey from the National Institute suggest that the growth of wholesale and retail trade has continued in the third quarter.

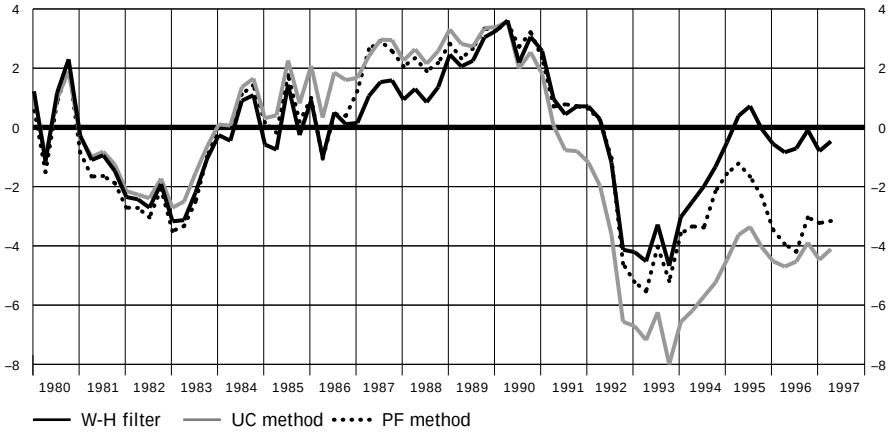
Households' expectations of the economic future have gradually become more positive during 1997.

Rising asset prices enlarge the scope for household consumption in the longer run. Since the turn of 1996 house prices have risen 9 per cent and share prices 28 per cent (Annex, Fig. 14). The trend for household disposable income, however, is expected to remain weak both this year and in 1998 on account of the ongoing consolidation of government finance. Lending to the household sector, perhaps the chief financial indicator for private consumption, has risen this year. Household borrowing reflects the consumption propensity and expectations about the future. According to Statistics Sweden's surveys of household purchasing plans (HIP), moreover, households' expectations of the economic future have gradually become more positive during 1997 (Fig. 6).

The long-term levels of the saving ratio has probably risen during the 1990s but in 1996 the saving ratio fell back. Most things suggest that the upswing in consumption will continue, leading to some further fall in the saving ratio. The fall in the saving ratio is partly technical: capital gains contribute to increased private consumption when they are realised or used for increased borrowing but they are not included in household disposable income as calculated for the national accounts;[4] by definition, then, growing capital gains entail a falling saving ratio. An assessment of saving also has to consider the composition of private consumption. The growth of consumption is coming mainly from purchases of durable goods, which in many ways resemble investment goods. In view of the capital gains and the circumstance that purchases of durables can be seen as a form of investment, saving defined more broadly will be considerably higher than its level as measured for the national accounts.

4 In recent years capital gains on household assets in the form of shares and real estate have been substantial relative to disposable income and have partly offset the weak development of disposable income's other components.

Figure 7.
Output gap calculated with three alternatives: the Whittaker-Henderson filter (W-H)*, the Unobserved Component method (UC) and the production function approach (PF)**.
Per cent



* The W-H filter is based on a projection of GDP using the National Institute's forecasts for 1997, 1998 and 1999, that is, 2.1, 3.0 and 2.9 per cent, respectively.
** Based on an estimate of 6.5 per cent for equilibrium unemployment in 1995–96 in Giorno et al. (1995), "Estimating potential output, output gaps and structural budget balances", OECD Working Paper No. 152.
Source: The Riksbank.

Output gap tended to narrow from the first to the second quarter.

Various indicators show that the output gap tended to narrow from the first to the second quarter of 1997 (Fig. 7). Depending on the way it is measured, the output gap in the second quarter is estimated to have been in the interval –0.4 to –4.1 per cent.[5] The simplest of the methods, the Whittaker-Henderson filter, gives an output gap that is smaller than with either the production function approach or the Unobserved Component method, which take employment, productivity and price movements into account.

Economic activity and capacity utilisation have risen but the supply of unutilised resources is still relatively good.

All in all, most of the indicators suggest that economic activity and capacity utilisation have risen but the supply of unutilised resources is still relatively good. A high rate of investment and strong productivity growth have helped, at least to date, to expand potential output as demand rises. This has eased the inflationary pressure from rising activity.

5 A minor change since the June report is that the estimations are now done with a different GDP time series, using data that have been seasonally adjusted and calendar corrected by Statistics Sweden; previously these adjustments were done at the Riksbank. Compared with earlier estimations, the change has not resulted in any sizeable differences.

EFFECTS OF THE OUTPUT GAP ON INFLATION

An important issue for monetary policy is how changes in the short interest rate affect demand and how this in turn affects prices. One way of describing the demand situation is in terms of the output gap, that is, the calculated percentage difference between actual and potential GDP. Ways in which changes in the output gap are likely to affect inflation are considered below. It should be underscored that inflation's path is contingent on other factors besides those that act via demand. Thus, even with unchanged demand, inflation may respond to exchange rates, import prices, inflation expectations and demand's composition.

With a credible inflation target it seems reasonable that high demand pressure entails a risk of inflation exceeding the target, while low demand pressure implies that inflation may be below the target. The reason is that higher capacity utilisation implies shortages of resources and production bottlenecks that lead to rising costs and prices. If the inflation target is not credible, however, inflation may accelerate even when capacity utilisation is low, the reason being that expectations of high inflation are built into contracts.

Certain problems arise, however, when data for Sweden are used to estimate an equation that explains inflation in terms of the output gap. In that the estimates are coloured by the high inflation in the 1970s and '80s (when the policy for price stabilisation lacked credibility), the relationships will describe an inflation process that fluctuates around a trend that is considerably above the present target of 2 per cent. Attempts to take the change of inflation regime into account with econometric methods come up against the difficulty that the duration of the new low-inflation regime is still rather short.[6]

Another complication is that inflation could well be affected not just by the size of the output gap but also by *changes* in this, that is, by the rate at which the gap is widening or closing. Even if a gap still exists, bottlenecks may develop if, for example, activity is rising rapidly. A gap that is closing fast may mean that inflation will exceed its target even though the gap is still negative. Calculations at the Riksbank indicate that effects of changes in the output gap may be of importance. This means that future risks of inflation are to be assessed not just in the light of the large unutilised resources that still exist but also with reference to the rate at which the output gap is closing.

6 See e.g. Berg, C. & Lundqvist, P. (1997), Has the inflation process changed?, Sveriges Riksbank *Quarterly Review* no. 2, and Apel, M. & Jansson, P. (forthcoming), System Estimates of Potential Output and the NAIRU, Sveriges Riksbank *Working Paper*. The analysis of the output gap with the newly modified UC model is based at present on a specification where inflation is written in differences. But estimations with the inflation process describing deviations from a quantified long-term target will presumably become increasingly important as the period with a trend in line with the inflation target becomes longer.

LOWER GROWTH OF THE MONEY SUPPLY

The non-bank sector's holdings of banknotes and coins (M0) has gone on rising, though recently the rate has become somewhat slacker (Annex, Fig. 12). In August 1997 the 12-month increase was 4 per cent, which reflects a recovery in private consumption. This also indicates rising demand and thus a risk of an increase in inflation in the somewhat longer run. M0 has proved to be a good indicator of inflation around six quarters ahead.[7]

The growth of the broader money supply (M3) was 4.6 per cent in August 1997 after lying above 10 per cent in 1996. The slower increase is mainly due to a fall of almost 1 percentage point in household deposits. In view of the low interest rates, households have transferred a large proportion of their savings from interest-bearing assets to shares and mutual funds. The growth of deposits by non-financial firms also slackened during the spring.

Lending to households showed a 12-month increase of 4.9 per cent in July 1997, the highest figure since the autumn of 1991.

Lending by banks and other credit institutions to the resident non-bank sector shows a 12-month increase of 3.2 per cent in July 1997 (Fig. 7). This includes an increase of 4.9 per cent for lending to households—the highest figure since the autumn of 1991. If the increase were to continue on this scale for some years, it could indicate an upswing in consumption that is unduly rapid in the context of inflation.

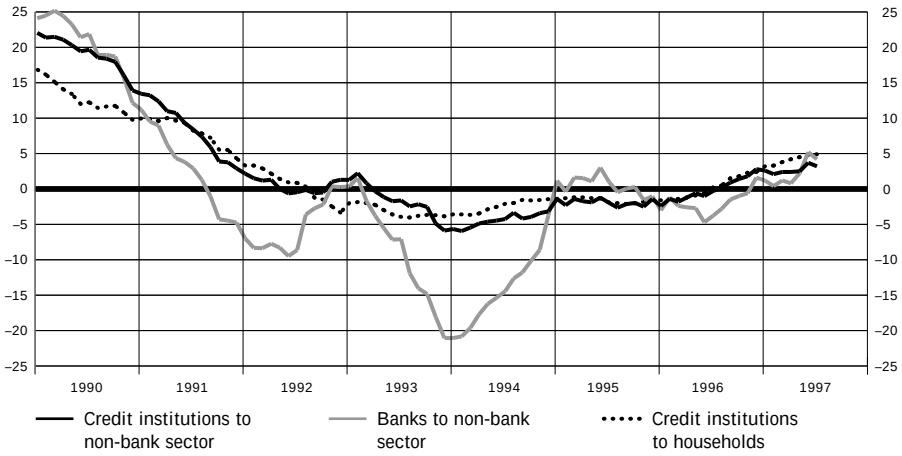
LABOUR MARKET IMPROVING

Unemployment shows signs of falling, though it is still high. In the period May–August 1997 the level of registered unemployment was 8.6 per cent or no more than 0.3 percentage points—about 8,000 persons—higher than a year earlier (Annex, Fig. 9). Employment programmes have been cut back since last year and educational programmes are largely unchanged. Total unemployment (the registered component plus labour market measures) was 12.3 per cent of the labour force or virtually the same as in the period May–August 1996.

During the past four months employment has risen and the seasonally-adjusted level of unemployment has fallen but this has been accompanied by a substantial expansion of labour market measures (incl. educational programmes). Compared with the

7 See Baumgartner, J., Ramaswamy, R. & Zettergren, G. (1997), Monetary Policy and Leading Indicators of Inflation in Sweden, Sveriges Riksbank *Working Paper* no. 37.

Figure 8.
Lending by credit institutions to resident non-bank and household sectors; bank lending to resident non-bank sector.
Percentage 12-month change



Source: The Riksbank.

preceding four-month period, in May–August 1997 total unemployment therefore rose by more than 30,000 persons.

Labour demand is continuing to improve. In the period May—August the number of new job vacancies was over 2,000 higher than a year earlier. The number of unfilled vacancies has also increased, which may indicate difficulties in recruitment. Vacancies in manufacturing show a slight increase.

The situation for employment remains weak but the downward trend has been broken. Although the level of employment is lower than last year, in recent months there have been signs of an improvement. In August 1997 the number of persons in employment was only 15,000 fewer than last year, compared with as much as 40,000 in earlier months. In private services and construction the seasonally-adjusted level of employment in the period May–August 1997 was almost 30,000 persons higher than in the preceding four-month period. Employment in manufacturing has started to rise again compared with the previous year.

HIGH STRUCTURAL UNEMPLOYMENT

With the modified version of the Unobserved Component (UC) model, presented in the June report, unemployment can be broken down into a cyclical and a structural component.[8] Cyclical unemployment is dependent on changes in demand, while structural unemployment is usually considered to depend on systems for wage formation and the labour market's rules and institutions.

Estimations using quarterly data for the period 1970–97 suggest that structural unemployment has increased sharply in the 1990s (Fig. 9). According to these data, in 1990 the structural level of unemployment was about 3 per cent, which was higher than the actual rate of 1.7 per cent; for 1996 the structural level had doubled to about 6 per cent, while the actual rate had more than quadrupled to about 8 per cent. Judging from these results, cyclical unemployment accounted for only 2 percentage points of the registered unemployment rate in 1996. Estimations for the first two quarters of 1997 give an unchanged cyclical component and some increase in structural unemployment.

Several studies indicate a marked increase in structural unemployment in the 1990s.

The UC model is one of numerous methods that can be used to estimate structural unemployment. Results of structural unemployment estimations undertaken outside the Riksbank cover a relatively broad range, 4.5—7.5 per cent. This illustrates the difficulty of determining the exact extent to which unemployment has stuck at a high level. According to the latest OECD report on Sweden, structural unemployment is now between 6 and 7 per cent.[9] Several of the studies indicate that structural unemployment has risen markedly in the 1990s.[10]

Regardless of the uncertainty in the measurement of structural unemployment, it is evident that Sweden, like many other countries, faces problems to do with persistently high unemployment. The question, then, is why unemployment has remained high.

Unemployment's upward trend in the early 1990s was triggered by a number of negative shocks that hit the Swedish economy simultaneously. The situation included an over-valued currency, a collapse in asset prices, an upswing in household saving, rising real interest rates and an international recession. The coincidence and strength of these shocks placed a heavy burden on the economy, for instance as regards labour market adjustments. Today, total production has more than recovered from the drop in the early 1990s but the labour market has not. It is conceivable that adjustments have been impeded by certain features of the rule systems for labour market policy. Structural changes of various types in the composition of labour demand may likewise have contributed to the high unemployment. In the 1970s and '80s factors such as the expansion

8 The structural component is sometimes referred to as equilibrium unemployment or NAIRU and then denotes the unemployment rate that is associated with constant inflation.

9 *Economic Surveys—Sweden 1997*, OECD, Paris.

10 A common feature of such studies is that structural unemployment varies with registered unemployment. Caution should therefore be exercised when interpreting the results, particularly for purposes of policy.

of the public sector helped to keep unemployment down.[11] Neither was the labour market subjected to any sizeable shocks in that period.[12]

LOWER RATE OF WAGE INCREASES

The rate of wage increase has slowed by degrees since the summer of 1996. The average hourly wage in the first half of 1997 was 3.9 per cent higher than a year earlier. Private sector wages had risen 3.8 per cent and public sector wages 4.1 per cent (Annex, Fig. 10). One explanation for the drop is that the figures for 1996 were pushed up by 1 to 2 percentage points because negotiated wage increases that year were paid out from an earlier date than the year before; another is that agreements have resulted in wage increases for 1997 that are somewhat lower than in 1996. Wage drift, moreover, has probably been restrained on account of the high unemployment, for example.

The highest wage increases in the first half of 1997, around 6 per cent, came from the transport sector, county councils and the manufacture of transport equipment. For construction, business services and certain parts of manufacturing, on the other hand, the rate was below 3 per cent.

No outcome figures are yet available for the aggregate change in unit labour costs in the first half of 1997. In the private sector, however, labour costs and productivity rose by around 4 and 3 per cent, respectively, compared with the first half of 1996, which implies that unit labour costs in this sector moved up about 1 per cent.

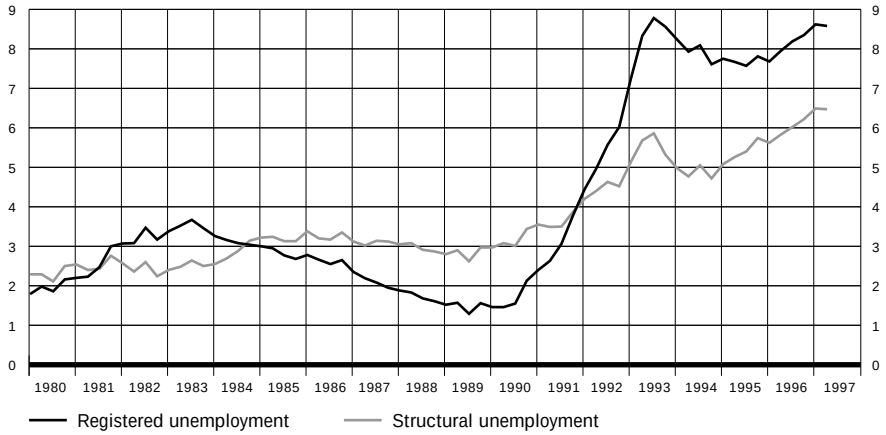
Inflation expectations among labour market organisations, together with wage increases and wage settlements to date in 1997, suggest that the adjustment to a low-inflation economy is continuing.

No major wage agreements have been concluded since the June report but the debate about wage formation and how future rounds of wage negotiations should be constructed has continued internally as well as between the labour market organisations. Since 1995 the actors in the labour market have lowered their inflation expectations by about 2 percentage points to around 2 per cent. Together with wage increases and wage settlements to date in 1997, this suggests that the adjustment to a low-inflation economy is continuing.

11 See Calmfors, L. (1993), Lessons from the macroeconomic experience of Sweden, *European Journal of Political Economy*, vol. 9, no. 1.

12 See Forslund, A. (1995), Unemployment—is Sweden still different?, *Swedish Economic Policy Review*, vol. 2, no. 1; Assarsson, B. & Jansson, P. (forthcoming in 1997), Unemployment persistence: the case of Sweden, *Applied Economic Letters*; and Lindblad, H. (1997), *Persistence in Swedish Unemployment Rates*, Stockholm University dissertation.

Figure 9.
Registered and structural unemployment in the UC model.
Per cent



Sources: Statistics Sweden and the Riksbank.

SOME INCREASE IN INFLATION EXPECTATIONS

Since the June report, expectations of inflation one year ahead have tended to rise. In August households on average expected that the level of inflation in the coming twelve months would be 1.8 per cent, which is 0.6 percentage points higher than in April (Annex, Fig. 15). This summer's price increases for petrol, tobacco and coffee may help to explain the relatively marked increase. Moreover, during the second quarter households became more optimistic about both their own and the national economy. Above all, however, the upward shift may be due to the fact that the expectations now extend into the second quarter of 1998, in which case households' assessments are consistent with those of most professional observers, who count on inflation rising relatively quickly to levels in the vicinity of the inflation target.

The June business tendency survey from the National Institute also shows that expectations of inflation in the shorter run have moved up since our last report. In the second quarter the one-year expectations in manufacturing averaged 1.5 per cent and in the services sector 1.2 per cent; in both cases this is an upward adjustment from the previous quarter, by 0.5 and 0.3 percentage points, respectively.

The Aragon survey at mid-August showed that inflation expectations among money market agents were somewhat higher than in May. Investors expected that inflation in the coming two years would average 2.0 per cent, which is 0.3 percentage points higher than in the previous survey. Inflation five years ahead was expected on average to be 2.4 per cent, an increase of 0.1 percentage point (Annex, Fig. 16). This indicates that it is chiefly expectations of inflation in the next few years that have risen, not expectations for the longer term.

Prospera's survey of inflation expectations among agents in markets for labour, goods and money also showed some increase, albeit marginal, in expectations since the May survey (Annex, Table 2). The one- and two-year expectations are below or in line with the inflation target, while the five-year expectations are just above. It is mainly the expectations for the next two years that have been adjusted upwards.

For labour market organisations, some upward adjustment of inflation expectations is accompanied by a downward shift in the expected rate of wage increases. This suggests that it is the development of demand rather than wage costs that lies behind the expected future increase in inflation.

A compilation of inflation forecasts by outside observers shows that the levels are much the same as at the time of the June report (Annex, Fig. 17). In August 1997 inflation in 1997 and 1998 was expected to average 0.9 and 2.0 per cent, respectively.

Surveys of inflation expectations suggest that since the June report expectations of inflation in the next few years have tended to rise.

All in all, the surveys of inflation expectations suggest that since the June report expectations of inflation in the next few years have tended to rise. Even so, the short-run expectations are still in line with the inflation target. The upward movement in inflation expectations is accompanied by more positive expectations of future demand. As regards the increase in money market agents' expectations of inflation in 1997 and 1998, moreover, part of the explanation is probably that Statistics Sweden has altered the routines for calculating both interest costs and depreciation on owner-occupied houses. The forecasts of external observers for 1997 and 1998 show no upward shift. Neither have expectations of inflation in the longer run changed more than marginally.

Interest and exchange rates

Monetary policy influences demand directly as well as indirectly, via interest and exchange rates. The exchange rate is important primarily for demand and investment in the internationally oriented sector; exchange rate movements also have a direct impact on import prices, with a pass-through to inflation. Interest rates influence credit supply and demand, with consequences for demand in general. It follows that interest and exchange rates indicate expectations about future inflation and monetary policy. They also mirror the degree of confidence in economic policy's overall commitment to long-term price stability.

The ten-year forward bond rate has fallen since the June report by 0.7 percentage points. Swedish bond rates are strongly conditioned by international interest rates, which have also fallen since the beginning of June. In this period, for example, both the US and the German implied ten-year forward interest rate has moved down by 50 to 60 basis points.

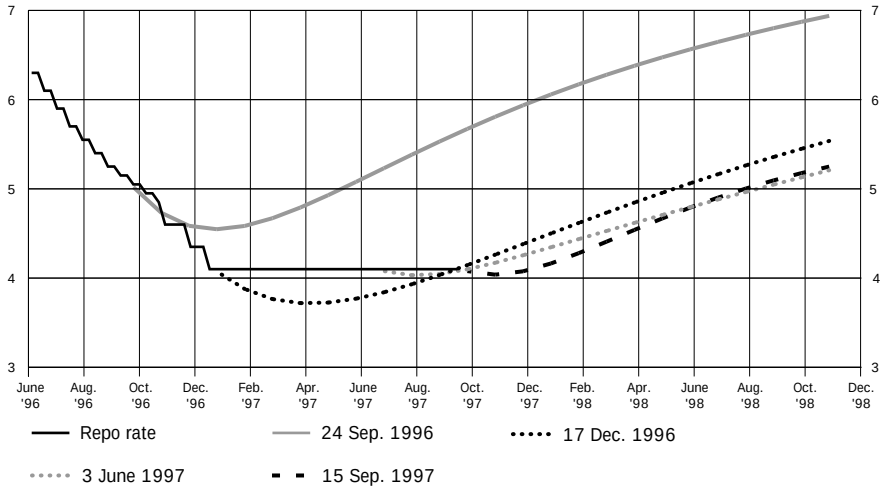
The implied forward bond rate differential with Germany can serve as an indicator of the extent to which confidence in Swedish economic policy's commitment to price stability differs from the situation in Germany. In recent months this differential has decreased by 0.1 percentage point, which suggests somewhat increased credibility. This has been accompanied by an appreciation of the krona against the German mark (Annex, Fig. 22).

Fears that inflation would return to high historical levels seem to have abated.

Judging from the exchange and bond rate tendencies, it therefore seems that fears of a return to high historical levels of inflation have abated. A major contribution to this has come from the massive political support for the inflation target. The consolidation of government finance has continued at a rapid pace. The proposals from five political parties in Sweden's parliament to enhance the Riksbank's independence may also have promoted the fall in bond rates. However, the favourable tendencies for Swedish interest and exchange rates this summer must also be seen in the light of, for example, the mood in international financial markets. This has been generally favourable despite unrest in certain places, e.g. in Southeast Asia.

The medium-term (one to two years) forward interest rates have also tended to fall this summer. The stronger confidence in the low-inflation policy in

Figure 10.
Actual and expected repo rate.
Per cent



Source: The Riksbank.

the long term has to some extent contributed to lower forward rates in the medium term as well. But the positive slope of the yield curve may still be a sign that investors expect somewhat higher inflation pressure and thereby a tighter monetary stance in the medium run.

Market pricing seems to have discounted some repo rate increase in the medium term.

The Riksbank has not altered its instrumental rates during 1997 and the repo rate remains at 4.10 per cent. Market expectations of the repo rate's future path can be discerned in the short-term segment of the implied forward interest rate curve (Fig. 10). Since the previous inflation report was published at the beginning of June the slope of this curve for maturities up to one year has hardly changed, which indicates that the same applies to expectations about monetary policy. But market pricing does seem to have discounted some repo rate increase in the medium term.

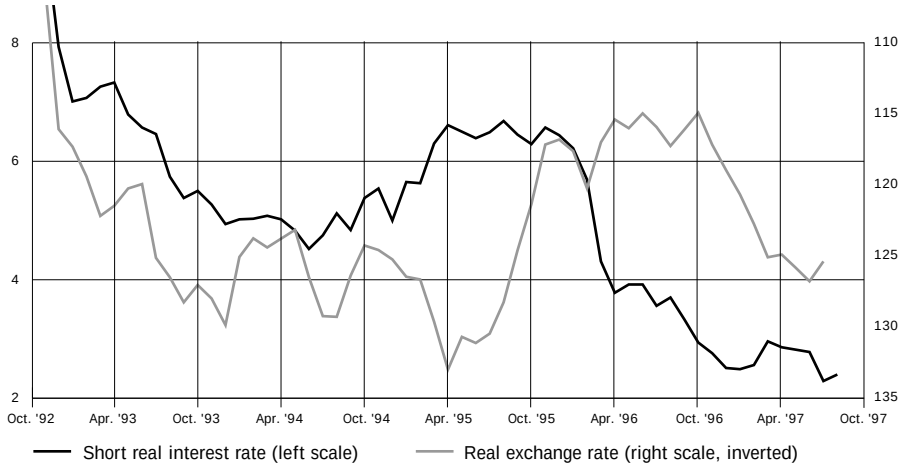
COMBINED EFFECT EXPANSIONARY

The krona's (TCW) exchange rate has appreciated nominally by about 3 per cent since the beginning of June. The appreciation has occurred primarily against the German mark. The exchange rate against the US dollar is virtually the same as in June. The real ex ante three-month interest rate[13] has fallen about 0.4 percentage points to 2.4 per cent, due to rising inflation expectations (Fig. 11). The five-year real ex ante interest rate[14] has also decreased, by 0.5 percentage points to 3.4 per cent. In the same period the real exchange rate has strengthened by almost 1.0 per cent. In recent months and measured in this way, the combined impact of real interest and exchange rates on demand has accordingly became somewhat more expansionary.

13 The rate for three-month treasury bills adjusted for the CPI change expected by households in the coming year.

14 The five-year bond rate adjusted for financial investors' expectations of inflation five years ahead (Aragon).

Figure 11.
Real three-month interest rate and real effective (TCW) exchange rate.
Per cent and index:
October 1992=100



Source: The Riksbank.

Chapter 2

Inflation assessment September 1997

The main scenario for inflation in the period 1997–99 is presented in this chapter, together with some conceivable alternative paths. The outlook is based in part on the analysis in Chapter 1. A technical assumption behind the assessments is that the repo rate remains unchanged. The monetary policy conclusions are discussed in Chapter 3.

Growth in the first half of 1997, as registered in the preliminary national accounts, was in line with the assessment in our June report. The weak first-quarter tendency is largely attributable to occasional factors. Private consumption's contribution to GDP growth in the first half-year was as large as that from net exports.

Unchanged growth forecast

In the June report it was considered that the upswing in private consumption during 1996 might prove to have been transitory, partly in view of the weak development of household disposable income. Today, however, several factors indicate that consumption is continuing to grow. Households have become appreciably more optimistic about their own economic future, asset prices have risen and both lending to households and the circulating stock of notes and coins have continued to expand relatively rapidly. There are also signs of some improvement in the labour market. A continued improvement in the situation there should generate a further increase in household confidence.

Fiscal policy has focused for several years on the consolidation of government finance. This is an important reason why household real disposable income fell somewhat in both 1995 and 1996 even though total hours worked increased and the average hourly wage rose considerably more than consumer prices. As things stand today, fiscal policy will continue to be restrictive in both 1997 and 1998. But household real disposable income may still turn upwards this year, followed by accelerating increases in 1998 and 1999.

The risk of a strong growth of consumption, such as that in Denmark and Finland in 1994–95, has been discussed in earlier reports. The possibility of a self-generating spiral of rising economic growth, increased employment, higher incomes and booming private consumption cannot be ruled out. But the combined picture of economic expectations, asset prices, lending to households, the increase in disposable income and the outlook for employment suggests that the future growth of private consumption will be balanced as regards inflation.

Along with what seems to be a stable growth of consumption, export growth has remained strong.

Along with what seems to be a stable growth of consumption, export growth has remained strong. In the first half of 1997, however, imports also rose rapidly. This partly reflects increased demand for consumer durables, of which a major proportion is imported. Machinery investment also rose in the first half of

1997. Sizeable increases in total industrial investment are not expected, however, until 1998 and 1999.

The assessment of the period up to the end of 1999 starts from the assumption of some further appreciation of the krona.

Since the beginning of June, when our previous report was presented, the krona's TCW exchange rate has averaged 121.5. This represents some appreciation from the spring and is in line with our June assessment. The current assessment of the period up to the end of 1999 starts from the assumption of some further appreciation of the krona. The Riksbank does not target the exchange rate but considers that at present and in relation to its long-term equilibrium level, the krona is undervalued.[15]

GDP growth is put at around 2 per cent for 1997, around 3 per cent for 1998 and just over 3 per cent for 1999.

All in all, in the main scenario growth is judged to be around 2 per cent in 1997 and around 3 per cent in 1998, followed by an expected rate just over 3 per cent in 1999. This means that in 1998 growth in Sweden is expected to be somewhat stronger than the averages for the EU countries and the OECD area.

UNCERTAINTY ABOUT FUTURE PRODUCTIVITY GROWTH

Industrial capacity utilisation is relatively high, with shortages of qualified personnel in certain industries. For the second quarter of 1997 the various output gap indicators range from –0.4 to –4.1. The most negative gaps are from indicators that make allowance for such factors as productivity and unemployment. Unemployment's cyclical component is estimated to have been just over 2 per cent in the second quarter this year. All this suggests that there are no general capacity shortages. But the surplus capacity is expected to dwindle in that growth in 1998 and 1999 is calculated to exceed the Swedish economy's potential annual growth rate, which is estimated to be just over 2 per cent.

If the unutilised resources were to be activated too rapidly, the result might be stronger inflationary impulses despite the continued existence of surplus capacity. Studies at the Riksbank suggest that inflation is affected not just by the size of the output gap but also by the rate at which the gap widens or closes (see Box on page 14).

Productivity growth in the first half of 1997 seems to have been strong. The preliminary national accounts put GDP growth, adjusted for the number of working days, at 1.9 per cent, accompanied by a 1.3 per cent reduction of total working time. This implies a sharp increase in average labour productivity. It seems likely, however, that the very strong productivity growth in the first half-year largely came from the activation of unutilised resources as demand improved. In that case it was partly of a temporary nature.

The future development of productivity is difficult to assess. Even if the rapid increase in the first half-year was partly of a cyclical nature, there are signs of a long-term improvement of conditions in this respect. In the past five years productivity has risen almost 9 per cent compared with 4 per cent in the latter part of the 1980s.[16] In the coming years, a higher degree of capacity utilisation would limit the potential for rapid improvements in productivity. In the longer run, however, balanced demand growth should lead to an expansion of capacity. Investment tends to involve the introduction of new technology and increased labour productivity. High wage increases can also generate rationalisation and the introduction of labour-saving technology.

Preliminary wage data suggest that to date in 1997 the rate of wage increases has slowed.

Preliminary wage data suggest that to date in 1997 the rate of wage increases has slowed. This provides further support for our assessment in June that wage formation is being adapted to a low-inflation econ-

15 This question is discussed in Alexius, A. & Lindberg, H. (1996), The krona's equilibrium real exchange rate, Sveriges Riksbank *Quarterly Review* No. 1.

16 The period 1992–97 compared with 1984–89.

omy. But it is too early to draw any definite conclusions.

A majority of the current wage agreements are due to be re-negotiated in 1998. Many factors suggest that the level of the settlements will be lower than the latest major round in 1995. These factors include subdued price tendencies, lower inflation expectations, a weaker labour market and lower profit levels among export firms compared with the situation in 1995. Against this there is the comparatively broad economic upswing.

INFLATION IN 1998 AND 1999 IN LINE WITH THE TARGET

The path of inflation since the June report has been broadly as expected. A closer analysis of price movements in the past year shows that an appreciable part of the price rise can be attributed to changes in taxes and subsidies and to administrative price increases (such increases can however also contribute to an inflationary process). But at the same time the change in the CPI has been held back by falling house mortgage rates. In recent months the 12-month changes in the CPI and the various indicators of underlying inflation have tended to converge and the trend has turned upwards, in keeping with earlier assessments.

Inflation since the June report has broadly followed the expected path.

Surveys show that in recent months, expectations of inflation in the coming years among households, firms and others have tended to move up. Pricing in financial markets gives a different picture. The survey data seem to correspond with expectations of a future increase in demand. In that the one-year inflation expectations now cover a period up to the autumn of 1998, they are broadly in line with the Riksbank's assessment of inflation.

The various ways of measuring inflation expectations are admittedly problematical and the results of the surveys therefore have to be interpreted with caution. A clear upward shift in these expectations above the inflation target would give cause for concern. In the present cyclical phase it is particularly important that inflation expectations are anchored in the vicinity of the inflation target. This applies not least against the background to the coming wage negotiations. Wage increases that are not consistent with the inflation target would have negative consequences for employment.

Internationally, growth in the years ahead is expected to be good. The EU Commission expects EU area growth rates of 2.4 per cent in 1997 and 2.8 per cent in 1988. The future for inflation in the EU area appears to be bright, with a rate around 2 per cent in 1997 and 1998, i.e. broadly in line with Sweden's inflation target. The weak inflationary pressure internationally and the signs of a lower inflation propensity that are also discernible abroad should contribute to a favourable development of inflation in Sweden, too.

Annual CPI inflation is expected to be around 1 per cent in 1997 and around 2 per cent in 1998 and 1999.

All in all, the annual rate of underlying domestic inflation is judged to be just below 2 per cent in 1997 and around 2 per cent in 1998 and 1999. Other indicators of underlying inflation give much the same picture, ranging from 1 to 1.5 per cent for 1997 and around 2 per cent for 1998 and 1999. Registered annual CPI inflation is expected to be around 1 per cent in 1997 and around 2 per cent in 1998 and 1999, with some upward tendency in the latter two years.

The assessments for 1997 and 1998 are broadly the same as in the June report, which did not include any assessment for 1999. Registered inflation measured as the 12-month change in the CPI is expected to go on rising in the coming months. At the end of 1997 the rate may be close to 2 per cent.

ALTERNATIVE PATHS

In that assessments of inflation are bound to be rather uncertain, there is reason to supplement the central picture with a number of conceivable alternatives.

The two alternatives in our June report envisaged that aggregate growth in 1997 and 1998 would be 1 per cent higher or lower than according to the main scenario. The picture of the money supply, imports of consumer goods, household wealth and growing optimism among households were cited as signs that demand might be stronger than in the main scenario. One indication that consumer demand might be more subdued was the situation in the labour market. With the higher growth, inflation would approach the target's upper tolerance limit during 1998, while the lower growth implied that inflation would stop at around 1.5 per cent. Factors cited as contributing to uncertainty about future inflation were the path of private consumption and how the exchange rate would develop. The uncertainty in the assessments of capacity utilisation and productivity was also underscored.

The descriptions of the alternative paths in the June report are still largely relevant.

The descriptions of the alternative paths in the June report are still largely relevant. Aggregate GDP growth could be either stronger or weaker than in the main scenario and the time profile may also deviate from the present picture. But the probability of weaker growth is judged to have receded.

As regards the size of the output gap and the outlook for productivity, the uncertainty is still substantial. Experience from recent years shows that on a number of occasions there has been cause to revise the assessment of inflation. It is not easy in practice to distinguish improvements in the inflation outlook that stem from changes in the trade-off between the output gap and inflation from those occasioned by circumstances of a more general nature, for example lower inflation abroad or lower inflation expectations in Sweden. In Sweden's case all these factors may have contributed. In addition, the assessments are highly contingent on how the output gap is measured. During 1996 the Riksbank revised its view of the output gap by working on new indicators that pay more heed to resource utilisation in the labour market.

The impression that inflationary pressure has been lower in recent years is by no means confined to Sweden. There is a lively ongoing discussion, above all in the United States and the United Kingdom, as to whether inflationary pressure has eased in general, for instance as a consequence of increased global competition and changes in wage formation. There is reason to believe that the international changes have affected the Swedish economy, primarily via a decreased contribution to domestic inflation from external price increases. The pattern is also discernible in other European countries, including our Nordic neighbours. Still, there is reason to be wary of overdoing the experience of recent years; it is still too early, for instance, to assess the past year's developments in the United States.

In addition to these sources of uncertainty, which have been relevant in recent years and are not specific to the present report, on this occasion there is reason to take a somewhat closer look at the conceivable consequences of excessively high wage increases in the 1998 round of negotiations.

One conceivable risk scenario for 1998 is that wage increases exceed the overall rate that is compatible with a balanced economic development.

It is difficult to form a clear opinion about whether the talks about future wage formation and the cooperation agreements that have been concluded in segments of the labour market will cause wage formation to function better in 1998. One conceivable risk scenario for 1998 is that wage increases exceed the overall rate that is compatible with a balanced economic development.

In a balanced economic situation the rate of wage increases that is consistent with the inflation target—and equilibrium in real economic activity—is given by the sum of the inflation target and the trend rate for labour productivity. A balanced situation means that output is at the potential level and cyclical unemployment is nil[17].

17 That is, registered unemployment is exclusively of a structural nature.

Actual output is currently below the potential level and unemployment is not solely structural but both these gaps are closing. Economic activity is rising from a trough. In such a situation it is desirable that wage increases follow a path that is *lower* than the equilibrium rate (given by the inflation target plus the productivity trend). That would support a balanced economic adjustment whereby production and employment rise without entailing overheating and accelerating inflation.

If the coming wage settlements are excessively high, this would be liable to result in a higher price level and generate higher inflation than in the main scenario. The process might be stimulated and reinforced if inflation expectations move up. That could call for a higher level of interest rates in order to safeguard the value of money. Thus, high wage increases would weaken the real economic upswing and cause the growth of employment to slacken. The level of unemployment would then be higher than assumed in the main scenario.

Wage increases that exceed what is consistent with a balanced path towards full employment with price stability will result in a development of GDP growth and unemployment that is poorer than in the main scenario. In the short run inflation might be somewhat higher than in the main scenario but as interest rates would be raised and demand be subdued, inflation would subsequently return to the desired level.

MONETARY POLICY AND INFLATION TARGETING

For some years now, monetary policy in many countries, including Sweden, has been conducted with the objective of fulfilling an inflation target. Today there is a fund of experience that, together with research findings, can provide some guidance for the implementation of monetary policy with an inflation target.[18]

Monetary policy affects inflation after a considerable time lag and therefore has to be forward-looking. Forecasts of major macro variables, inflation in particular, accordingly play an important part. In practice, the part played by the Riksbank's inflation forecast is so central that this forecast is more or less tantamount to an intermediate target. It can then be said that the task of the Riksbank is to conduct monetary policy so that its inflation forecast for the appropriate horizon is in line with the inflation target.

In practice, the inflation forecast is not a discrete estimate of future inflation but consists instead of multiple inflation scenarios. The probabilities of the scenarios are weighted into the overall assessment of the inflation outlook.

The principles underlying monetary policy deliberations can be formulated as a simple rule of thumb: if the inflation forecast, starting from an unchanged instrumental rate, is in line with the target at an appropriate horizon, then the monetary stance is well balanced. If, instead, the forecast is above (below) the inflation target, then the monetary stance is to expansionary (tight) and the repo rate should be raised (lowered) either immediately or in the near future. In that this rule of thumb refers to an inflation forecast predicated on an unchanged instrumental rate, it is natural that the Riksbank adopts this assumption for its forecast.

The inflation assessment serves as a tool for the interpretation of new information and for deciding whether or not an adjustment of the repo rate is called for. If the new information is such that forecast inflation rises (falls) for the relevant horizon, then the repo rate should be raised (lowered).

An important issue is the time horizon for bringing the inflation forecast in line with the target. Attempts to fulfil the target within a fairly short horizon entail marked interest rate adjustments and rapid shifts in the monetary stance. There are several reasons for preferring a longer horizon and a gradual monetary policy adjustment.

For one thing, pronounced interest rate adjustments and swings in the monetary stance are liable to inject instability into such real variables as production, employment and the real exchange rate. With a longer horizon and a gradual adjustment of the monetary stance, the inflation target can be fulfilled together with some stabilisation of these real variables.

Secondly, an unavoidable uncertainty exists about the monetary policy transmission mechanism, that is, about the magnitude of and lags in the effects of repo rate adjustments on inflation and other macro variables. There is then an intuitive case, which economic research can demonstrate more strictly, for exercising caution in the conduct of monetary policy; in practice this amounts to using a longer horizon for the fulfilment of the inflation target.

Thirdly, it is conceivable that large interest rate adjustments and rapid swings in the monetary stance may impair the workings of the money market and create uncertainty about the Riksbank's intentions.

In view of these considerations, in these reports the Riksbank has chosen to analyse inflation perspectives for the coming two years.

18 This section is based to a large extent on Svensson, Lars E.O. (1997), Inflation Targeting: Some Extensions, Sveriges Riksbank *Working Paper* no. 40, which gives further references to the rapidly growing body of literature on this topic.

Chapter 3

Monetary policy conclusions

The conclusions for monetary policy are discussed in this chapter. Monetary policy's objective is price stability. The Riksbank has formulated this as limiting the annual increase in the consumer price index to 2 per cent, with a tolerance interval of ±1 percentage point. On account of the time lag before monetary policy measures affect inflation, the construction of monetary policy is based on assessments of inflation in the coming two years.

Developments since the latest repo rate cut

The repo rate was lowered to 4.10 per cent in December 1996, which meant that in the course a year the rate had been reduced by a total of almost 5 percentage points. In the inflation report which was published that month the Riksbank considered that economic activity showed signs of recovering but that production would probably not exceed potential output in either 1997 or 1998. The risk of domestically generated inflation taking off was therefore judged to be slight. It was assumed that the krona's TCW exchange rate would continue to appreciate from the level of 115. All in all, annual inflation was expected to be below 1.5 per cent in 1997 and about 2 per cent in 1998. This main scenario indicated that the monetary stance was well balanced and that the additional room that might exist for repo rate cuts was limited.

The path of economic activity has been broadly in line with the Riksbank's assessment in December 1996, though growth during 1996 and early in 1997 was somewhat weaker than expected and somewhat stronger in the second quarter this year.

Since then, the economic situation has been broadly in line with the Riksbank's assessment. In 1996 and the first quarter of 1997 growth was somewhat lower than expected but in this year's second quarter it exceeded expectations. This was one reason why inflation during 1996 and early in 1997 was lower than the Riksbank had counted on in the December report. There were also increasingly clear signs of changes whereby factors such as enhanced inflation target credibility was reducing the inflation propensity. The very strong, though to some extent probably transitory, productivity growth in the first half of 1997 should also have reduced the risk of cost inflation. But it was mainly effects of falling interest rates that resulted in CPI inflation being lower than expected.

The exchange rate is a major factor in the inflation forecasts. The marked fluctuations that have occurred since the end of 1992 lead to difficulties in monetary policy decision-making. Between the December and March reports, the krona's effective exchange rate weakened almost 5 per cent. The main scenario in the March report assumed that this depreciation would be transitory and that in a more long-term, fundamental sense the krona was undervalued. But although the assumed exchange rate was

weaker than envisaged in earlier reports, the inflation forecast was adjusted downwards on the grounds of the real economic tendencies and a lower inflation propensity. Inflation was expected to average around 0.5 per cent in 1997 and somewhat less than 2 per cent in 1998. The main scenario did not rule out somewhat more stimulatory monetary conditions. The Riksbank, however, does not control the composition of these conditions in terms of interest and exchange rates. In view of the exchange rate uncertainty the March assessment was therefore that the monetary stance was well balanced. The subsequent exchange rate tendency was comparatively weak and neither were there any interest rate adjustments.

The weakening of the krona during the spring represented an additional demand stimulus.

Between the inflation reports in March and June there was little change in the real economic picture. The weakening of the krona during the spring represented an additional demand stimulus. Inflationary pressure was judged to be limited but it did seem that inflation's downward trend had been broken. The June report involved some upward revision of the inflation forecast on account of a weaker exchange rate and proposed changes to indirect taxes and subsidies in the Spring Economic Bill. Inflation was estimated to average about 1 per cent in 1997 and around 2 per cent in 1998. Under these circumstances the monetary stance was considered to be well balanced.

OUTLOOK FOR INFLATION

The Riksbank assesses future inflation in the light of both monetary and real economic factors. One important factor is GDP growth and any associated capacity shortages. In these respects the main scenario in the Riksbank's work has not changed appreciably since the June report. No general capacity shortages are expected to arise in the coming two years. But the surplus capacity is expected to diminish in that the growth of total demand in 1998 and 1999 is estimated to exceed the assumed increase in potential output.

The comparatively high growth in the coming years should be compatible with low inflation in line with the target.

The assessments of GDP growth and inflation start from assumptions that the repo rate is unchanged and the TCW exchange rate becomes somewhat stronger. After a period with a virtually unchanged price level, as demand improves the rate of price increases is expected to approach the inflation target. But the comparatively high growth in the coming years is expected to be compatible with low inflation in line with the target. This basically stems from the assessment that capacity restrictions will be limited in the forecast period. Another important reason for the relatively bright picture of inflation is the stabilisation of inflation expectations and the confidence that economic policy now enjoys. The assessment also reflects the international picture: it is generally considered that good growth in the coming years can be combined with low inflation in the OECD area.

All in all, this means that the inflation assessment in the present report is broadly the same as in June. However, the June report did not include an assessment for 1999. In the main scenario the annual rate of underlying domestic inflation is expected to be just under 2 per cent in 1997 and around 2 per cent in 1998 and 1999. Registered annual CPI inflation is expected to be around 1 per cent in 1997 and around 2 per cent in 1998 and 1999, with some upward tendency in the latter two years.

WHAT MIGHT CHANGE THE MAIN SCENARIO?

The inflation assessment is, as always, uncertain and the element of uncertainty grows with the time horizon. In the present inflation report there is reason to look in particular at three sources of uncertainty:

1. Inflation expectations and wage formation. During the summer the survey data indicate that inflation expectations have moved up and are now roughly in line with the Riksbank's perception of future inflation.

The upward shift is not particularly alarming because there also signs in the opposite direction, for example a decreased bond rate differential with Germany. But there is still every reason to follow the indicators of inflation expectations and try to form an opinion about their future tendency. A clear upward adjustment of the inflation that various economic agents expect can entail considerable problems for monetary policy. This is particularly the case in the present situation, with a probable reinforcement of activity and the imminent re-negotiation of a majority of wage agreements. If the level of wage settlements is excessively high, the economic upswing will be weakened and the growth of employment will slacken. An important cause of the unduly high wage settlements in 1995 was probably that the future inflation which labour market organisations anticipated at that time was considerably higher than the level targeted by the Riksbank.

2. Inflation propensity and capacity utilisation. On a number of occasions in recent years there has been cause to make a downward adjustment of the inflation assessment. This has had to do with, for example, a weakening of economic activity and, not least, the CPI effects of the recent years' steep fall in interest rates. But to some extent the Riksbank has also altered its perception of the underlying inflation process.

Expectations are an important aspect here. In this respect we know that there has been a positive change, with effects that are probably favourable for large segments of price formation.

Competitive conditions etc. are another important aspect. Various structural changes, such as internationalisation, deregulations and increased competition, suggest that pricing behaviour has improved in important sectors of the economy.

Potential output assessments have also been revised on a number of occasions. Among other things, this has had to do with changes in and additions to the analysis of the output gap.

All these aspects are difficult to pin down empirically and in these respects there is therefore reason to be cautious in the assessment of inflationary pressure.

3. Cyclical factors. Major changes have occurred in recent years in many of the variables that are of great importance for economic activity. The repo rate, for example, was lowered almost 5 percentage points during 1996 and for a long time the exchange rate was notably weak. The change in the instrumental rate is very pronounced, internationally as well as historically, and we know that there is a time lag before interest rate movements have their full effect on prices. From this it follows that the fall in interest rates during 1996 is still not fully reflected in demand or inflation. Another important factor in this context is fiscal policy. The assessment of cyclical activity and inflation allows for fiscal policy as it stands today. Additional measures that increase demand might alter demand's future path. For these or other reasons, it is conceivable that activity rises more strongly than in the main scenario. That in turn could lead to such a rapid increase in capacity utilisation that there is a risk of inflationary tendencies.

MONETARY POLICY

It is up to monetary policy to keep inflation expectations down and prevent inflationary pressure from arising. In this way monetary policy can safeguard the value of money and fulfil the inflation target. Moreover, the approach to monetary policy should be forward-looking so as to avoid abrupt shifts and large changes in interest rates and thereby contribute to a stable economic development.

Monetary policy has to keep inflation expectations down and prevent inflationary pressure from arising.

The inflation target has been accepted more fully and increasingly widely. This is important for monetary policy because once the inflation target is established as the benchmark for price and wage formation, the conditions for 2 per cent inflation are good.

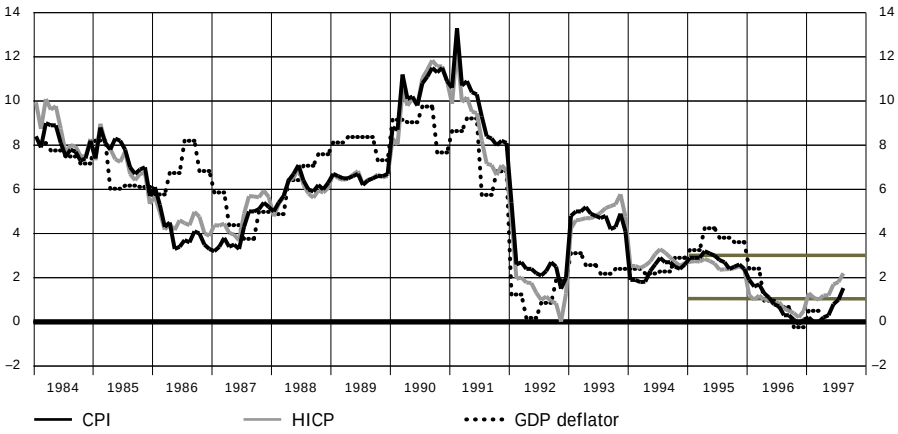
Monetary policy is currently being conducted in a situation with rising economic activity. The present assessments imply that while the output gap will not

close in the coming two years, a continuation of the positive tendencies will gradually reduce the reserves of unutilised resources.

Considering the main scenario for inflation and the current spectrum of risks, the monetary stance is judged to be well balanced. At the same time, with the present economic development it is particularly important that incoming information is carefully monitored to detect any changes in the picture of inflation.

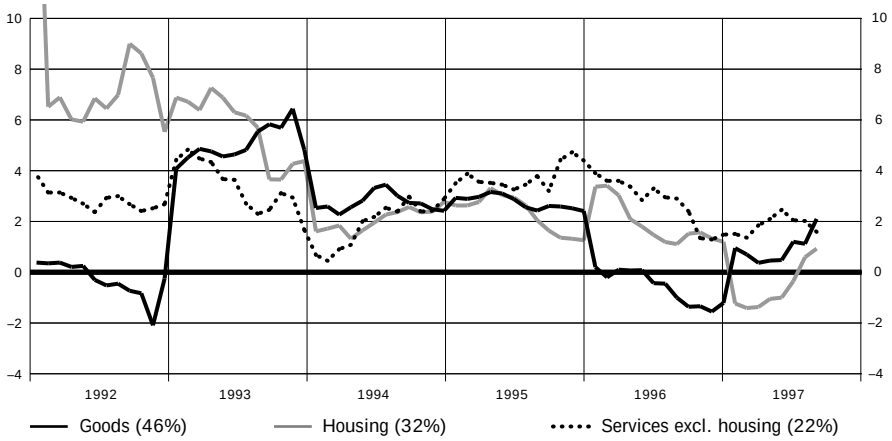
Annex

Figure 1.
CPI, HICP* and GDP deflator.
Percentage 12-month change



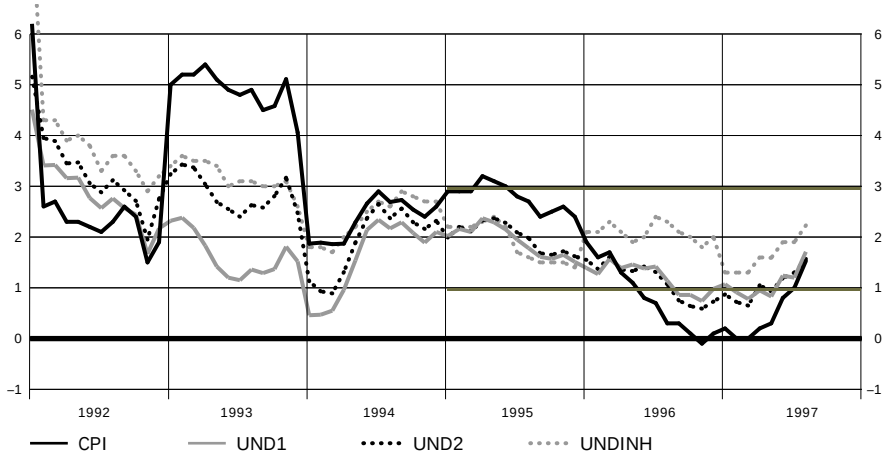
*Harmonised index for international comparisons of consumer price movements; approximate figures before 1996. Note. The horizontal lines from 1995 onwards represent the Riksbank's tolerance interval for the annual change in the CPI.
Source: Statistics Sweden.

Figure 2.
CPI components.
Percentage 12-month change



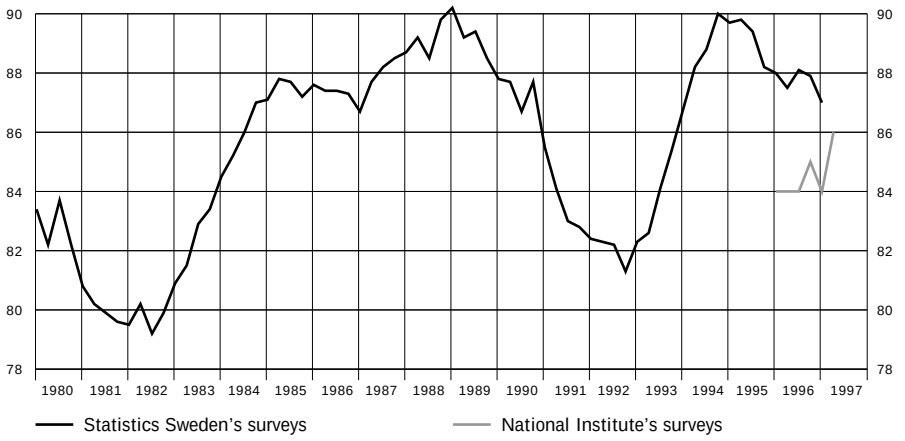
Note. The figures in parentheses are the component's CPI weight in 1997.
Sources: Statistics Sweden and the Riksbank.

Figure 3.
CPI and underlying inflation.
Percentage 12-month change



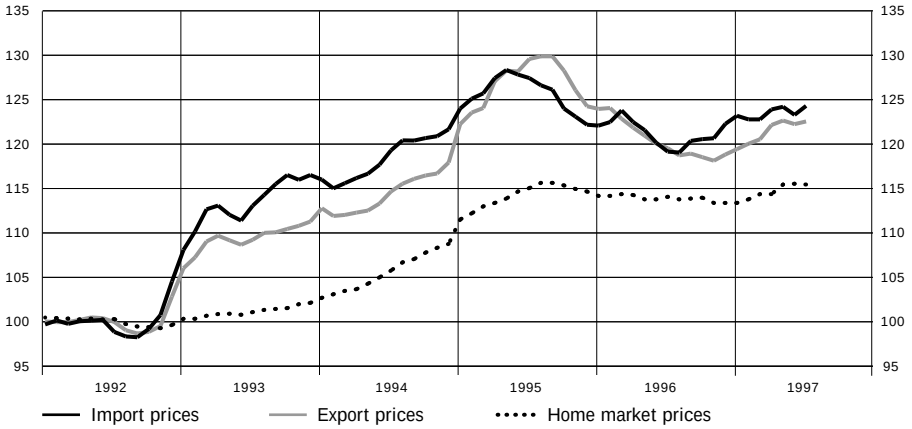
Note. The horizontal lines from 1995 onwards represent the Riksbank's tolerance interval for the annual change in the CPI.
Sources: Statistics Sweden and the Riksbank.

Figure 4.
Industrial capacity utilisation.
Per cent



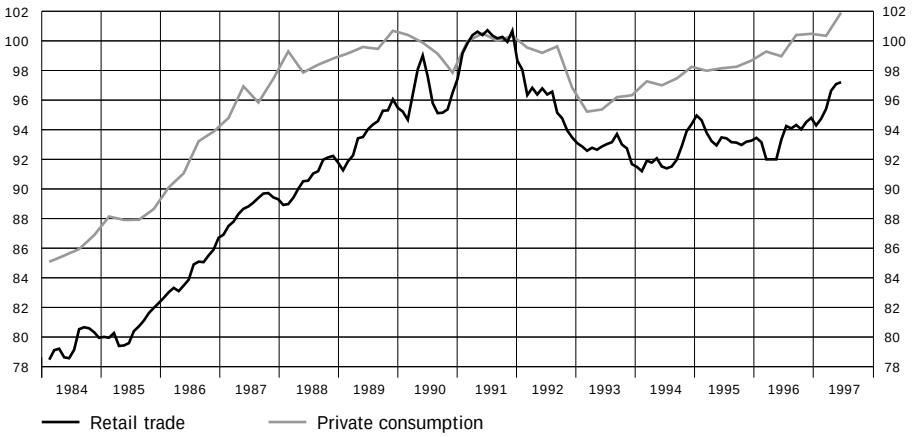
Sources: Statistics Sweden and National Institute of Economic Research.

Figure 5.
Import, export and home market prices.
Index: 1992=100



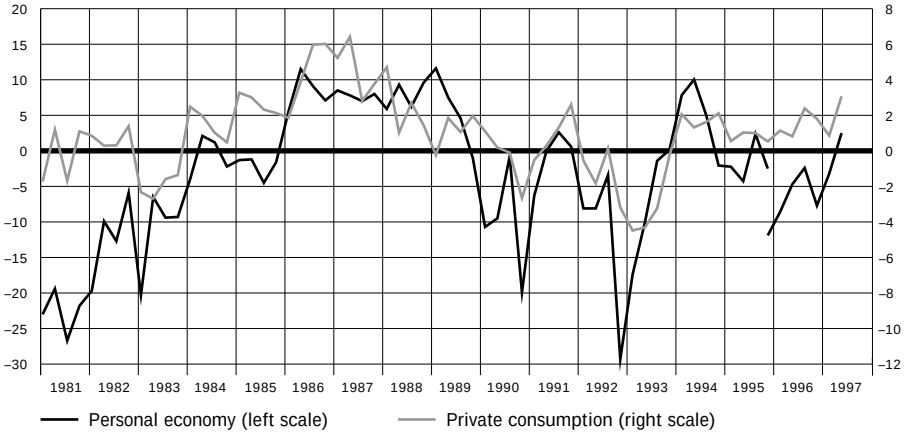
Source: Statistics Sweden.

Figure 6.
Private consumption and retail turnover.
Volume, seasonally adjusted quarterly data and moving 3-month average, respectively;
index: 1991=100



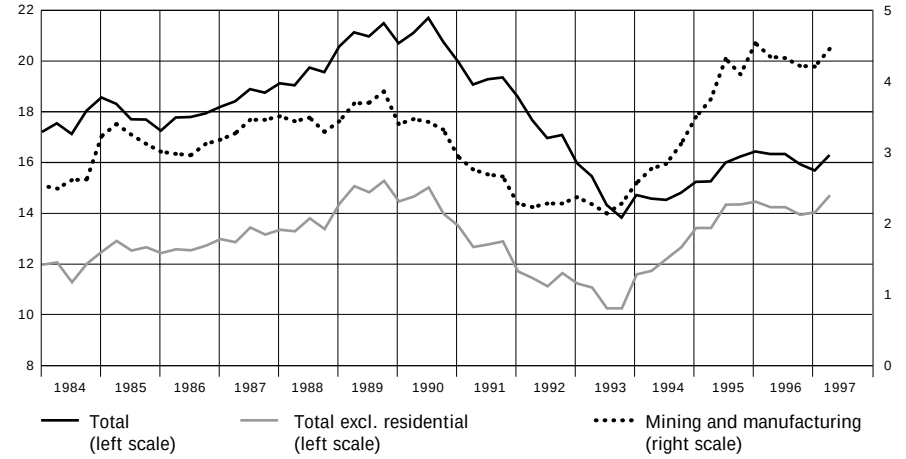
Soruce: Statistics Sweden.

Figure 7.
Households' personal economic expectations* and private consumption. Net figure and annual percentage change



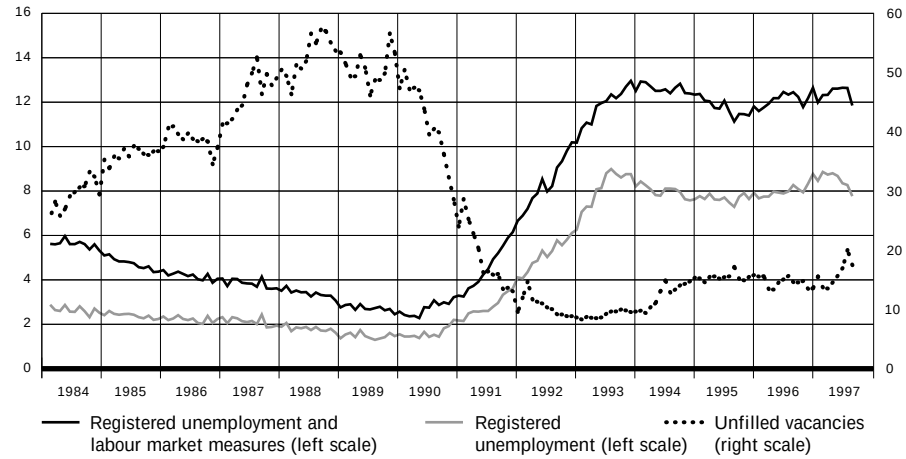
*The HIP statistics were revised in October 1995.
Source: Statistics Sweden.

Figure 8.
Gross fixed capital formation relative to GDP: total, excl. residential and in mining and manufacturing. Seasonally-adjusted volume, per cent



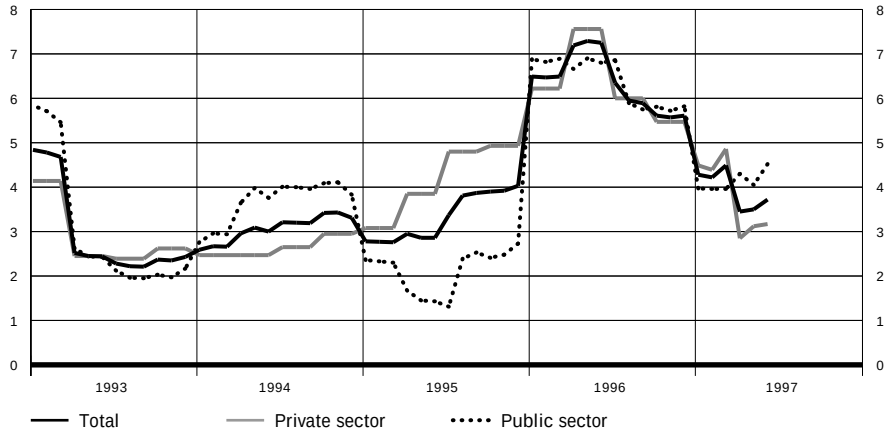
Source: Statistics Sweden (National Accounts).

Figure 9.
Unemployment and job vacancies.
Per cent and thousands, respectively; seasonally-adjusted data



Sources: Statistics Sweden and National Labour Market Board.

Figure 10.
Total and sectoral wage levels.
Annual percentage change



Note. Preliminary statistics for 1997.
Sources: Statistics Sweden, Association of Local Authorities, Federation of County Councils and Riksbank calculations.

Table 1.
Sectorwise wage formation. Percentage change from same quarter a year earlier

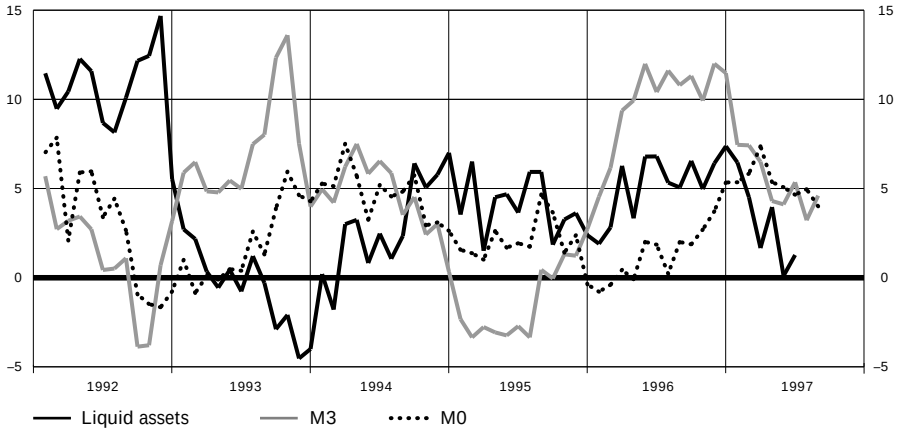
	1993	1994	1995	1996	Jan.–June '97
Private sector	3.0	2.6	4.2	6.3	3.8
manufacturing	3.4	3.7	4.8	7.5	3.9
trade	2.8	1.5	3.9	5,2	3.7
construction	3.8	2.8	4.1	4.0	2.7
Central government*	2.9	4.2	3.9	7.0	3.4
Municipalities	3.2	3.2	1.0	5,4	3.6
County councils*	2.9	4.1	2.7	7.8	6.0
Total economy	**3.0**	**3.1**	**3.3**	**6.3**	**3.9**

*Adjusted for retroactive disbursements but not for intersector rearrangements of activities. Preliminary statistics as of January 1997.
Sources: Statistics Sweden, Association of Local Authorities, Federation of County Councils and Riksbank calculation.

Figure 11.
Unit labour costs (ULC) and labour productivity. Percentage 12-month change, moving four-quarter average

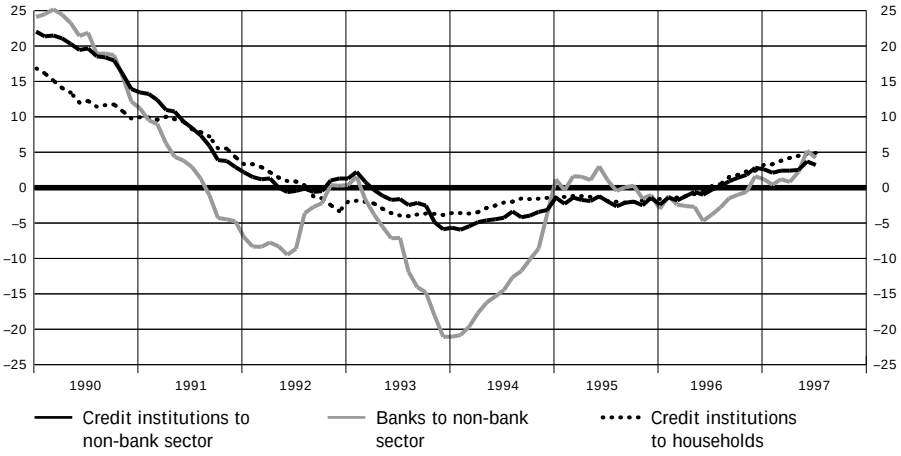
Source: Statistics Sweden (National Accounts).

Figure 12.
Money supply and liquidity. Percentage 12-month change



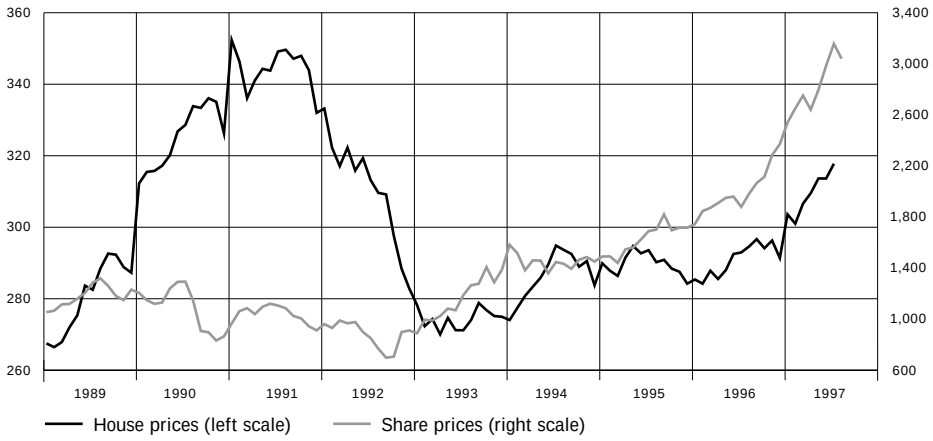
Note. The liquidity aggregate comprises the non-bank public's holdings of M3, certificates, treasury bills, national savings accounts, National Debt Office accounts, premium bonds and private bonds.
Source: The Riksbank.

Figure 13.
Lending by credit institutions to resident non-bank and household sectors; bank lending to resident non-bank sector. Percentage 12-month change



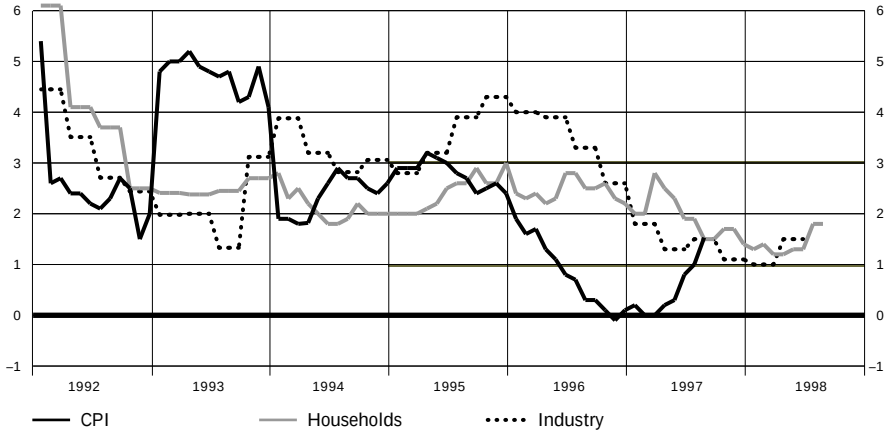
Source: The Riksbank.

Figure 14.
Price index for owner-occupied housing (1981=100) and Stockholm Stock Exchange share price index (end 1979=100)



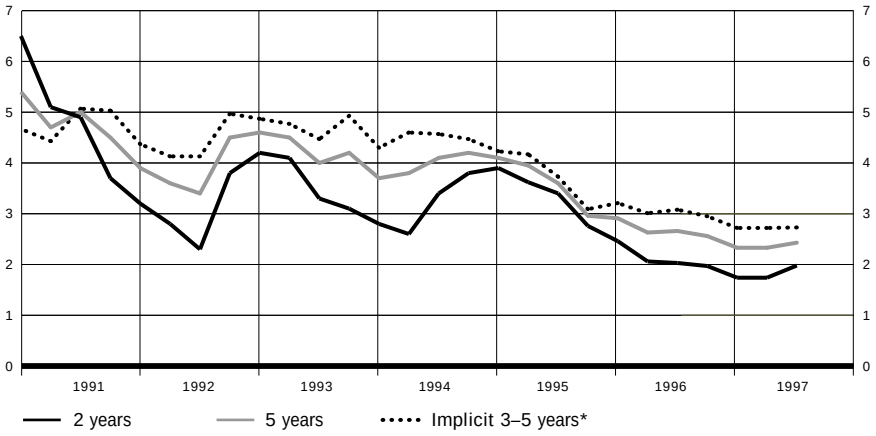
Note. Latest observation: 30 August 1997.
Sources: Statistics Sweden and Stockholm Stock Exchange.

Figure 15.
CPI and inflation expectations of households* and industry. Percentage 12-month change



* The curves for expectations have been shifted twelve months into the future so that they coincide with the period to which the expectations refer.
** As of 1996 the ten most extreme responses at either end are excluded; prior to 1996 the curve shows responses in the range 0–15 per cent.
Note. The horisontal lines from 1995 onwards represent the Riksbank's tolerance interval for the annual change in the CPI.
Sources: Statistics Sweden and National Institute of Economic Research.

Figure 16.
Bond investors' inflation expectations. Average annual percentage rates for the next two and five years



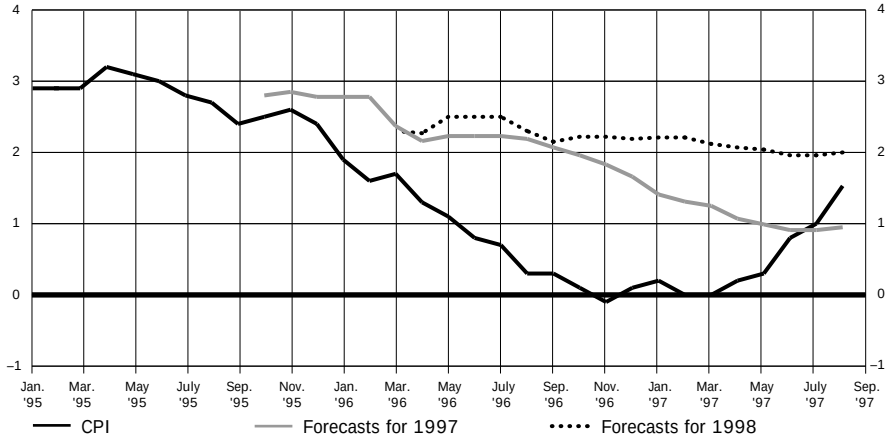
*The implied average expected inflation rate in the period from three to five years ahead, calculated by the Riksbank.
Note. The horisontal lines from 1995 onwards represent the Riksbank's tolerance interval for the annual change in the CPI.
Source: Aragon Fondkommission.

Table 2.
Inflation expectations in September 1997 with the change from May 1997 in parentheses. Average figures, per cent and percentage points

	Annual change in CPI in:					
	1 yr.		2 yrs.		5 yrs.	
Employer organisations	1.7	(0.4)	1.8	(0.3)	2.0	(0.2)
Employee organisations	1.8	(0.4)	2.0	(0.3)	2.2	(0.2)
Purchasing managers, industry	1.9	(0.2)	2.2	(0.3)	2.4	(0.3)
Purchasing managers, trade	1.8	(0.2)	2.0	(0.2)	2.2	(0.1)
Money market agents	1.7	(0.3)	1.9	(0.2)	2.1	(0.0)

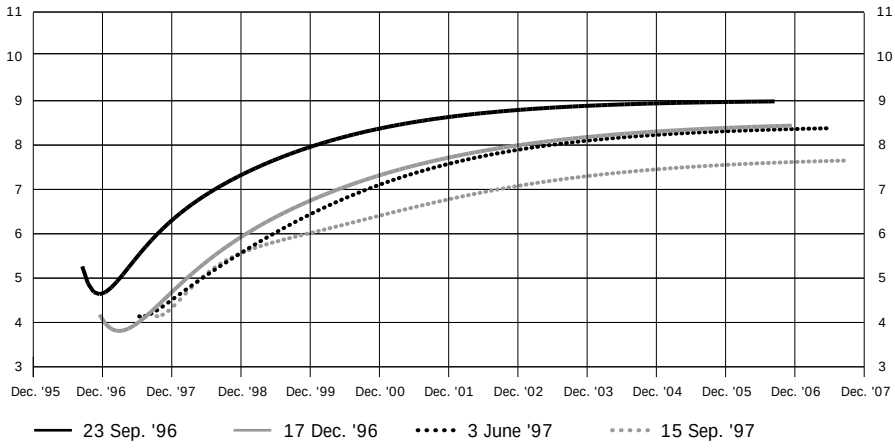
Source: Prospera Research AB.

Figure 17.
Average of inflation forecasts from selected forecasters.
Per cent



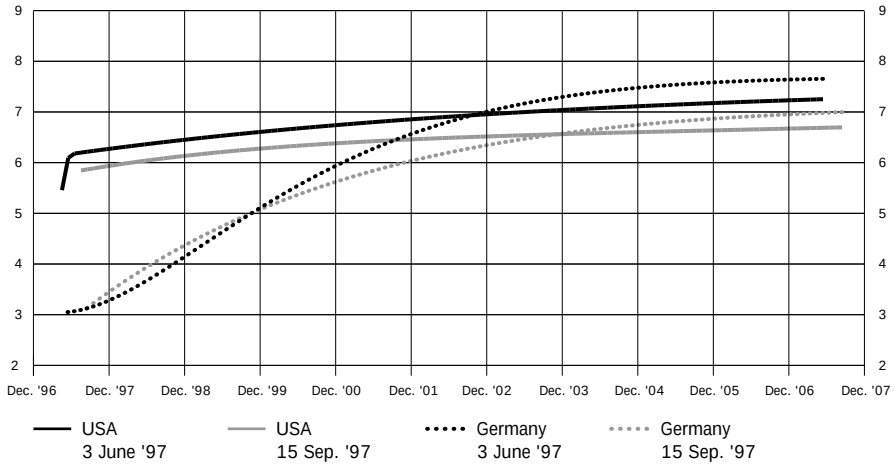
Sources: Forecasters and the Riksbank.

Figure 18.
Implied forward interest rate curves on 23 September 1996, 17 December 1996, 3 June 1997 and 15 September 1997.
Effective annual rate, per cent



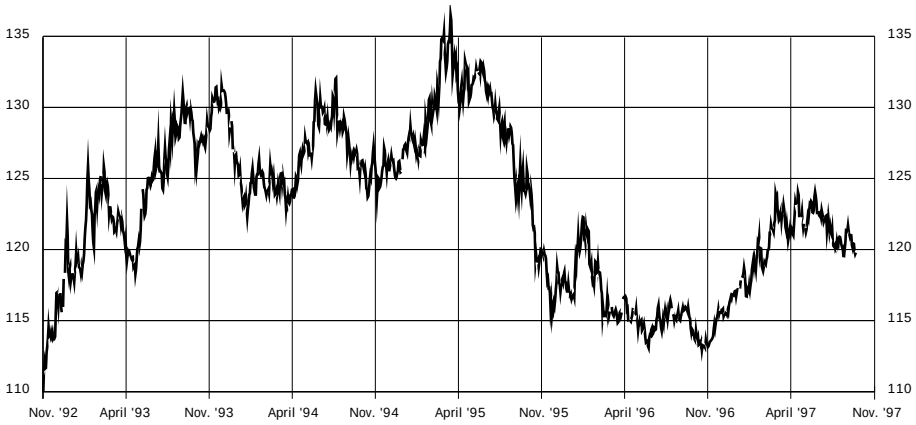
Source: The Riksbank.

Figure 19.
Implied forward interest rates in the United States and Germany on 3 June 1997 and 15 September 1997.
Effective annual rate, per cent



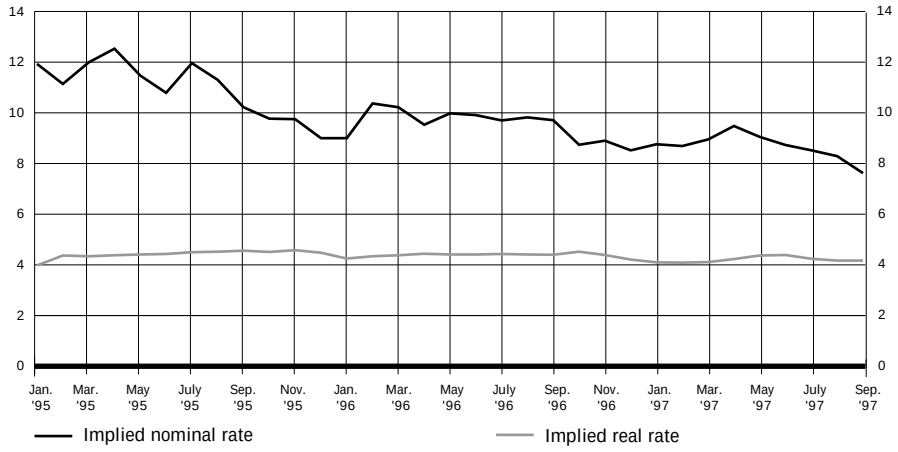
Source: The Riksbank.

Figure 20.
Effective (TCW) nominal exchange rate.
Index: 18 November 1992=100



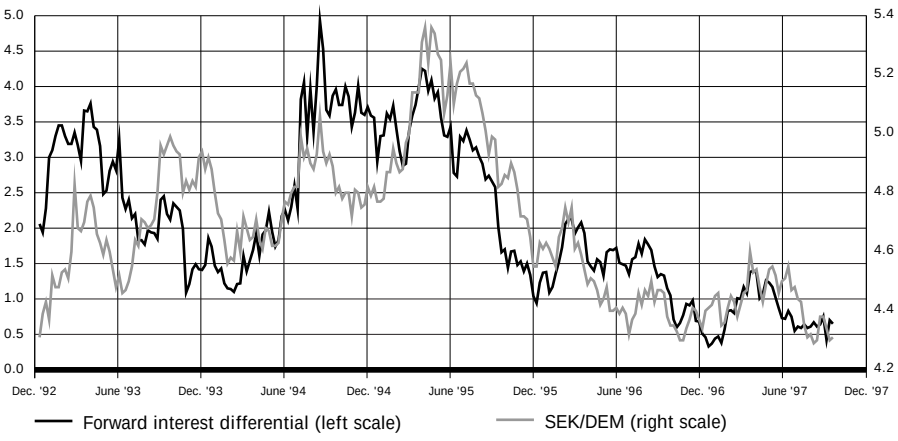
Source: The Riksbank.

Figure 21.
Implied real and nominal forward ten-year bond rates.
Per cent



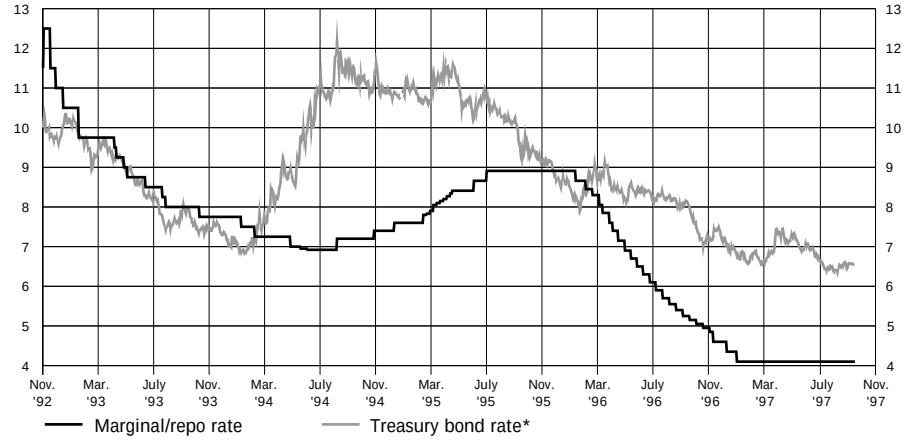
Sources: National Debt Office and the Riksbank.

Figure 22.
Forward ten-year interest rate differential with Germany and SEK/DEM exchange rate.
Percentage points and SEK/DEM



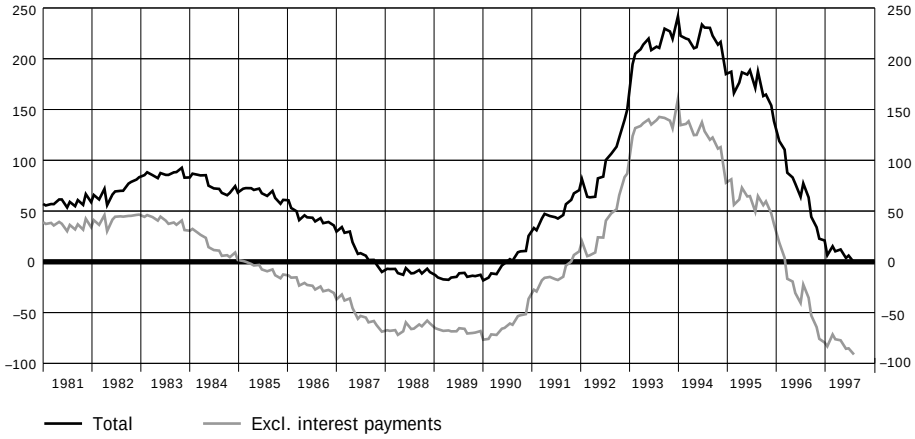
Source: The Riksbank.

Figure 23.
Interest rates.
Daily quotations, per cent



*The ten-year treasury bond rate refers for 1992 to the Swedish issue no. 1030, maturing on 15 June 2001, for 1993 to issue no. 1033, maturing on 5 May 2003, for 1994, 1995 and 1996 to issue no. 1035, maturing on 9 February 2005 (from end October 1996 to end 1996 to issue no. 1038, maturing on 25 October 2006) and for 1997 to issue no. 1037, maturing on 15 August 2007.
Source: The Riksbank.

Figure 24.
Government borrowing requirement: total and excluding interest expenditure.
SEK billion, moving 12-month requirement



Source: National Debt Office.