Inflation and Inflation Expectations in Sweden

ECONOMICS DEPARTMENT
FEBRUARY 1995

SVERIGES RIKSBANK
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Monetary policy has the task of furthering price stability. Price stability is a precondition for a more stable economic development and for providing room for monetary policy to cope with disturbances. Moreover, in that confidence in the feasibility of achieving and maintaining price stability promotes a long-term approach to saving and investment, it serves to create conditions for sustained economic growth and high employment. It is therefore important that economic policy as a whole is constructed so that it is in harmony with the objective of price stability.

In the interval since our previous inflation report, in October 1994, the monetary stance has become more restrictive. The repo rate on 20 February was 60 basis points higher than in mid-October 1994. The increases in this rate should be seen in the light of the economic upswing and high capacity utilization, with the associated upward tendencies in inflationary pressure and inflation expectations. In this situation it is natural that monetary policy is tightened so as to safeguard price stability.

In order to provide a foundation for monetary policy decisions, a picture of inflationary pressure in the economy is assembled by studying a large number of indicators. In this way, information about the inflation process can be gained early enough for monetary measures to have the intended effect on the course of inflation. In the present cyclical phase – an upswing led by exports and investment – inflationary tendencies will show up first in price increases by producers because it is in industry that activity is highest. The pass-through to consumer prices will also depend on the demand situation and the construction of economic policy.

With subdued domestic demand, the immediate risk of consumer price inflation is limited. Meanwhile, price pressure is building up in earlier stages. The effects of this pressure will also be dependent on behaviour, expectations and relationships between profits, wages and prices. The financial markets incorporate these factors in interest and exchange rates. In an analysis of the inflation process and how to achieve price stability it is important to catch the interaction of real economic conditions with expectations. A successful policy with less risk of inflation leads to shifts in interest and exchange rate expectations that ease the tensions in the real economy.

The analysis of the principal inflation indicators has been developed in this inflation report. The structure is somewhat different from earlier reports. For one thing, the real demand and supply factors are now considered in a single chapter. The financial indicators are likewise analyzed separately. The situation in the labour market is of such importance for inflation that it, too, is considered separately, as is central government finance.

Particular attention is paid to the relationship between producer and consumer prices, as well as to the prospects for wage formation. Alternative measures of the output gap are also discussed, as is internation-
al experience of budget consolidation and policies for price stability. The direction of monetary policy during 1994 is also evaluated.

The report has been produced in the Economics Department. Valuable contributions and opinions have been received from colleagues in other departments at the Riksbank.

Stockholm, 28 February 1995
Krister Andersson
Head of the Economics Department
Summary

Since our previous inflation report, in October 1994, the monetary stance has become more restrictive with a view to countering inflationary tendencies and higher inflation expectations. But we still consider that the inflation target for 1995 may be exceeded, though this risk has become somewhat less large. Favourable price effects from increased competition in conjunction with EU membership, together with a relatively limited pass-through to consumer prices, have contributed to this. The less expansionary turn which monetary policy has taken in the autumn and winter also points in this direction.

In a longer perspective, however, the higher inflation expectations and the increase in input prices, in conjunction with a persistently weak exchange rate, represent a threat to continued price stability. However, the monetary policy measures which have been taken in the past six months or so will tend to subdue inflation, not least in 1996. Increased confidence in economic policy - manifested in lower bond rates, a stronger exchange rate and lower inflation expectations - would promote a more balanced development and help subdue the inflationary tendencies. Moreover, holding underlying inflation at a low level after 1995 presupposes that wages in the various parts of the economy are in line with the growth of productivity. Otherwise there is a risk that the inflation target will be exceeded in 1996 with the current direction of policy.

The increases to the instrumental rates since the October report are to be seen in the light of the export-led recovery in the Swedish economy. An improved competitive position, accompanied by an international upswing, has generated rapidly rising production in much of the business sector. The outlook for international economic activity in the coming years is also favourable.

At the same time, the domestic market and private consumption are both slack and unemployment remains high. The economic imbalances are also manifested in the large government borrowing requirement and growing government debt. A rising tendency has been discernible in inflationary pressure and inflation expectations. This is the background against which the outlook for inflation in the coming years has to be assessed.

In January 1995 consumer price inflation moved up to 2.9 from around 2.5 per cent in the closing months of 1994. This was partly a consequence of altered indirect taxes and subsidies but it also included price increases for petrol and medicine, though these were counteracted, for instance, by price cuts for clothing.

The producer price rise in the home market was 6.5 per cent in December 1994. The pass-through to consumer prices to date has been fairly modest. The differences in the economic situation help to account for this. The concurrence of weak domestic demand and a forceful industrial recovery has become increasingly evident in price formation as well as in wage setting. Prices for industrial products have been rising considerably faster than consumer prices for goods.
and services. In the present cyclical phase – with growth led by exports and investment – it is reasonable that inflationary tendencies show up first in rising producer prices. The pass-through to consumer prices may appear at a later stage.

Private consumption picked up towards the end of 1994, though from a low level. Household real disposable income is, however, falling in 1995 and 1996, mainly in connection with the consolidation of central government finance. This means that the outlook for consumption is crucially dependent on the household saving propensity. The degree of confidence in a sustainable economic development, with the process of budget consolidation as a major aspect, will be important for household decisions to save or consume. Although confidence in economic policy shows a positive shift, consumption in the coming years is still likely to be subdued.

Industrial investment was rising rapidly in the closing part of 1994, though not sufficiently to avoid a further increase in capacity utilization. But industrial firms seem to be optimistic about expanding capacity in 1995. The total output gap was still positive in the third quarter of 1994. Production is expected to be close to the potential level throughout 1995.

Growth of the money supply has fallen back in 1994 and the beginning of 1995. This mainly reflects the shift from bank deposits to interest-bearing securities. The persistently high interest rates have helped to keep credit demand weak. This picture of money and credit suggests that demand for domestic consumption will remain slack. Considering the rearrangements which households and firms have been making in their financial portfolios, the development of the money and credit aggregates is compatible with the price stability target and a medium-term real annual growth rate of 2–3 per cent.

Most of the indicators suggest that inflation expectations for the coming years have gone on rising. But the picture is not uniform. Expectations are lowest among

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**Figure 1. Consumer price index and the highest and lowest inflation expectations of labour market organisations, purchasing managers and money market agents**

Percentage 12-months change

*The implicit change in the second year has been calculated by the Riksbank.
households, where they have fallen back to 2.3 per cent, and labour market organizations, where the expected price rise in the coming years is around or just above 3.5 per cent. Industries experiencing strong demand and money market agents both foresee a rate of inflation around 4 per cent in 1995 onwards. The CPI outcome is presented in Fig. 1 together with the highest and lowest inflation expectations for the coming years, according to the survey by Statistics Sweden in February 1995.

The appraisal of the inflation indicators points to imbalances that threaten price stability in the coming years. The primary task for monetary policy is to curb inflationary pressure in the economy and help prevent inflation expectations from having negative effects on price and wage formation.
The development of prices in the course of production and distribution is presented in this chapter with reference to the indexes for producer and consumer prices. Underlying inflation is also analyzed. The chapter ends with a closer look at the relationship between producer and consumer prices.

**Consumer price index and GDP deflator**

From January 1994 to January 1995 the CPI rose 2.9 per cent (Fig. 2). This rate of increase was almost 0.5 percentage points higher than in the last three months of 1994. The GDP deflator rose in the third quarter of 1994 at an annual rate of 2.9 per cent, which was higher than in the previous quarter. Since the second quarter of 1993 the rate of increase in the GDP deflator has varied between 2 and 3 per cent.

An advantage with the GDP deflator is that it covers prices for all goods and services produced in Sweden. However, there is a considerable lag before it is published and it is revised rather frequently. In the most recent statistics, for instance, the rate of increase for the second quarter of 1994 has been adjusted upwards from 1.7 to 2.3 per cent. Part of this adjustment has to do with Statistics Sweden’s change to a new base year but the main component comes from regular statistical revisions.

**Figure 2. CPI and GDP deflator**

Percentage 12-month change

Source: Statistics Sweden.
The CPI increase in January 1995 is partly a result of altered indirect taxes and subsidies. Decreased subsidies for housing repairs entailed increased costs for own homes. Specific taxes went up for alcohol, petrol and tobacco. EU membership involved a higher VAT rate for restaurant services and postage, for instance. To some extent this has been offset by the abolition of some taxes and charges in the food sector. But payroll charges have gone up as of 1995 as a contribution to financing the EU contribution.

With weak consumer demand, the effect on consumer prices of the changes in taxes and subsidies will be limited. But the way the CPI is calculated means that some of the changes show up in full. This applies above all to own-home costs. Passing on other changes to consumers will not be feasible in full during 1995. In January the total pass-through to the CPI from altered indirect taxes and charges is judged to have been about 0.3–0.4 percentage points. In the remaining months of 1995 this component is calculated to contribute an additional 0.1–0.2 percentage points to the CPI.

Besides reflecting altered indirect taxes and subsidies, the higher rate of inflation in January included price increases for petrol och pharmaceuticals. Other factors had a contrary effect. The seasonal price cuts for clothing were larger than in earlier years and both apartment rents and prices for public services were more subdued than in January 1994 (Fig. 3).

The price movements for the CPI components clearly converged in the latter part of 1994. Price increases for goods have been historically lower than for services and housing but in recent years the rates for services and housing have slackened, mainly in connection with the weak domestic demand. At the same time, the price rise for goods has tended to move up in connection with the weak exchange rate and strong industrial activity. Another explanation for the convergence is that certain effects (e.g. altered taxes and subsidies, the move to a flexible exchange rate) have dropped out of
the 12-month change figures.

Food prices in Sweden are likely to be affected by the lower price level and stronger competition in the EU area, as well as by the decreased taxes and charges. A contrary effect will presumably apply to prices for clothes. As a member of the EU, Sweden has to apply a quota system that restricts textile imports from low-price countries. The aggregate effect of EU membership on prices for food and clothing could mean that the rate of inflation in both 1995 and 1996 is 0.2–0.3 percentage points lower than would otherwise have been the case.¹

In 1996 the changed indirect taxes and subsidies will add, for instance, to housing costs, due to increased property taxes and decreased subsidies. But with persistently subdued consumption it will not be possible to pass on the changes in full in consumer prices. The total impact on the CPI in 1996 from altered indirect taxes and subsidies is therefore expected to stop at about 0.6–1.0 percentage points.²

Summing up, consumer price inflation accelerated from about 2.5 per cent in the closing months of 1994 to 2.9 per cent in January 1995. Altered indirect taxes and subsidies contributed to the higher rate but so did price increases for petrol and pharmaceuticals, though this was offset by lower clothes prices, for instance.

Underlying inflation

The price stability target relates to the CPI mainly because the latter is a familiar measure of inflation and mirrors the prices which consumers encounter. In order to analyze underlying inflationary tendencies, it may be necessary to look at particular CPI components. Occasional effects – for instance from altered indirect taxes, supply shocks in markets for primary materials or exchange rate movements – may obscure

¹. The combined weight of food and clothing in the CPI is about 20 per cent.
². Assuming a full impact, the National Institute of Economic Research calculates that the CPI effect in 1996 would be 1.5 percentage points.
the inflation trend. Deriving underlying inflation serves to provide information about future price tendencies and trends. This section presents four approaches, starting from the CPI, to the estimation of underlying inflation.

In the two traditional measures, UNDI and UND2 (Fig. 4), items that are assumed to generate occasional effects on inflation are excluded in advance. For the other two measures, a trimmed mean and a weighted median (Fig. 5), the items for which prices have fluctuated particularly markedly are excluded retroactively.

In January 1995 the traditional measures (UND1, UND2) both showed an underlying rate of inflation of 2.0 per cent. This is somewhat lower than in September 1994, the latest month included in our October report.

When indirect taxes and subsidies are eliminated from price indexes, the traditional procedure is to exclude the effects that correspond to a full pass-through to consumer prices. This is done, for instance, for Statistics Sweden’s net price index as well as for UND1 and UND2. In the context of substantial changes to indirect taxes and subsidies, these measures then tend to underestimate underlying inflation, particularly if consumer demand is weak. In the long run, however, the assumption that altered indirect taxes and subsidies are passed on in full to consumers is reasonable. To the extent that increased indirect taxes mirror a price increase for public services, underlying inflation should be calculated without any deduction at all.

The other two measures—the weighted median and the trimmed mean—put underlying inflation in January 1995 at 2.8 and 2.3 per cent, respectively, which is some-

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3. The items excluded in both these cases are indirect taxes and subsidies, interest costs for owner-occupied housing and effects of the krona’s depreia
tion after the move to a flexible exchange rate; UND2, moreover, excludes prices for heating oil and propellants.

4. The trimmed mean has been calculated here from 85 per cent of the central observations. The weighted median is based on CPI items weighted for their share of private consumption.

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**FIGURE 5. CPI and underlying inflation**
Percentage 12-month change

Source: Statistics Sweden and the Riksbank.
what higher than in September 1994.

All the measures of underlying inflation, which are intended to detect inflationary pressure in the economy, showed a rate of 2 per cent or more (range: 2.0 to 2.8 per cent) in January 1995. The rates are somewhat lower than in September 1994 for the two traditional measures and somewhat higher for the other two measures. Considering that, as discussed above, the traditional measures probably underestimate the tendency, a reasonable assessment is that in January 1995 underlying inflation was still just over 2 per cent.

**Producer prices**

Producer prices have been rising considerably faster than consumer prices. Import prices rose 4.5 per cent in 1994 and home market prices 6.5 per cent (Fig. 6).

The appreciation of the krona in the autumn of 1994 contributed to lower import prices for consumption and investment goods, as well as to a weaker pass-through from the international price rise for input goods. The price rise for inputs came mainly from raw coffee, chemical products, metals, pulp and paper products. The price of crude oil also tended to move up in October and November but fell back again in December 1994, followed by a renewed rise.

Home market price increases went on accelerating throughout 1994. The 12-month rate in December 1994 exceeded the August figure by more than 1 percentage point. Here, too, there were large differences between the demand components; input prices rose 10.5 per cent in 1994 as against 0.2 per cent for investment goods. The price increases for inputs came mainly from the product groups that were involved in the international price rise, together with domestic grain and other food materials.

While prices for imported consumer goods fell in the second half of 1994, the prices of consumer goods produced in Sweden rose so that the 12-month rate in December was 3.6 per cent. The aggregate

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5. Between September and December 1994, the effective exchange rate, weighted by import-shares, appreciated by approximately 2 per cent.

**FIGURE 6. Import, export and home market price indexes**

Index: 1992=100

![Graph showing import, export, and home market prices from 1990 to 1994. Source: Statistics Sweden.](source:statistics-sweden.png)
producer price rise for consumer goods in the domestic market (imported and Swedish products) in 1994 was 2.6 per cent.

The planned price increases reported in the National Institute’s business tendency surveys have a good historical record as indicators of home market prices in the coming quarter (Fig. 7). In the survey in December 1994, home market price increases in the first quarter of 1995 were planned by almost half of the industrial firms, which is about twice the proportion at the same time a year earlier and unmatched since the first quarter of 1989. The survey data accordingly indicate a persistently rapid increase in home market prices in the first quarter of 1995. It is therefore conceivable that the 12-month rate may move up from 6.5 per cent in December 1994 to over 7 per cent in the first quarter of 1995.

Summing up, input prices went on rising strongly in the autumn and winter of 1994. The price increases for raw materials also contributed to the rapid increase in home market prices for inputs as well as consumer goods, primarily food products.

The rate of price increases is thus high in the expansionary parts of the economy. In the current upswing, generated by rapidly rising exports and increased investment, inflationary tendencies can therefore be expected to show up first in the form of rising producer prices.

**A CLOSER LOOK**

*Relationship between producer and consumer prices*

Price formation in one stage of production and distribution affects prices in subsequent stages. Factors behind the pass-through include the demand situation, the competitive pressure in different markets and the development of other costs. However, the degree and the time profile of the producer price pass-through to consumer prices are difficult to demonstrate statistically. Empirical studies indicate that price changes in different stages can deviate over a long period. Besides the varying strength of the pass-through...
from producer to consumer prices, due to the economic factors mentioned above, the demonstration of clear relationships is difficult for other reasons.

For one thing, producer prices refer to industrial products in every stage before retailing, while the CPI covers services as well as goods in the final (retail) stage. For another, the composition of goods differs in that the weights for the producer price system are derived from production and foreign trade, while for the CPI they are based on private consumption. Thirdly, indirect taxes and subsidies are included in the measurement of consumer prices but not in producer prices.'

An attempt to analyze the pass-through with allowance for these factors can be made by comparing the CPI for goods with the domestic supply price index (DSPI) for consumer goods, the latter being a combination of the indexes for home market and import prices. The results show that consumer prices co-vary closely with producer prices, except in occasional periods (Fig. 8). During 1994, for instance, producer prices for consumer goods in the Swedish market rose 2.6 per cent, with most of the increase coming from Swedish producers, while consumer prices for goods rose 2.4 per cent.

The deviations between producer and consumer prices in 1990 and 1992 were mainly due to altered taxes and subsidies. Specific taxes on petrol, alcohol and tobacco were increased substantially in the second half of 1989 and the beginning of 1990. VAT on food was reduced at the turn of 1991. The deviation towards the end of 1993 probably reflected a limited pass-through to consumer prices when import prices rose sharply after the krona’s depreciation. The reduction of payroll charges from 1993 no doubt did much to counteract this pass-through.

In the past year the rise of home market prices has come mainly from input goods, with just a moderate increase for consumer goods. Prices for the latter co-vary in the short run with consumer prices and the pass-through appears to have occurred already. Even if the producer price
rise for Swedish consumer goods does accelerate, the effects on the CPI should be limited because these goods make up no more than about 15–20 per cent of total private consumption.

There is a considerable risk that the producer price rise for input goods will pass through to consumer prices more markedly as domestic consumption picks up. Serious inflationary impulses from producer prices may also be generated if the price rise for input goods, internationally as well as in Sweden, remains strong.
2 Demand and supply

The inflation indicators presented and analyzed in this chapter are mainly aspects of real demand and supply, such as consumption, investment and capacity utilization. The chapter concludes with a closer look at different ways of calculating and assessing the size of the output gap.

Private consumption

Private consumption picked up again in the third quarter of 1994, after falling in connection with the interest unrest in the spring and summer (Fig. 9). This is confirmed by the retail turnover statistics. In the fourth quarter, retail turnover went on rising, accompanied by an increase in new car registrations. In the past, retail turnover has been a forerunner of total private consumption. If this still holds, it points to an upturn in the volume of consumption towards the end of 1994 and early in 1995, albeit from a low level.

In last December’s business tendency survey for services, the National Institute reported that wholesale firms expected turnover to go on rising in the first half of 1995. In retailing, however, firms in the everyday sector were less optimistic and counted on an unchanged volume in the early part of the year, while those in infrequent retailing had also become more pessimistic, though they did still foresee some increase in turnover in the first half of 1995.

In the coming years consumption is like-

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**Figure 9. Private consumption and retail turnover**

Volume, seasonally-adjusted quarterly data and moving 3-month average, respectively; index: 1990=100

Source: Statistics Sweden.
ly to remain subdued. Household real disposable income is falling in both 1995 and 1996, mainly in conjunction with the consolidation of government finance. The expected improvement in the labour market, with less perceived risk of becoming unemployed, should tend to maintain private consumption. There are also indications of a large accumulated need to replace the stock of consumer durables. Household decisions to save or consume will be crucially dependent on confidence in the process of budget consolidation.

**Investment and profitability**

Industrial capacity utilization is so high that investment in additional capacity is needed to avoid inflationary impulses. A start has been made: industrial investment in the first three quarters of 1994 was 18 per cent up on the same part of 1993. Between the third quarters of 1993 and 1994 this raised the GDP share for industrial investment from 2.1 to 2.6 per cent (Fig. 10). The total investment ratio was unchanged from the second to the third quarter of 1994 and still considerably below the average for the 1980s.

Margins were maintained to a large extent by Swedish firms in the recent recession, according to Statistics Sweden’s national accounts. Overall business profitability was already improving strongly in 1993, even though the initial level was not historically low (Fig. 11). The gross margin moved up from 17.6 per cent in 1992 to 20.8 per cent in 1993 and is estimated to have remained at much the same high level in 1994. Somewhat lower profitability is to be expected in 1995 and 1996 on account of increased wage costs and high capacity utilization in parts of the business sector.

This picture conceals large differences between the business sector’s components. Greatly improved profitability in export industries, as well as in much of wholesale trade and business services, has been accompanied by a persistently weak situation in activities, such as retailing, which are

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8. No statistics are yet available for the period after 1993.
heavily dependent on the domestic market.
If development remains favourable, expanding production and a strong improvement in profit margins can bring total profits up to a very high level. This in turn can lead to a very good development of investment but it also requires a great deal of flexibility in wage formation.

*Industrial capacity utilization*
In both the third and the fourth quarter of 1994 industrial capacity utilization went on rising rapidly, though the data from Statistics Sweden and the National Institute do suggest that the rate has tended to slacken (Fig. 12). Still, the continued additions to capacity reported by firms in the Institute’s business tendency survey were not sufficient to match the expansion of production.

Another yardstick of industrial capacity utilization is provided by the Institute’s survey data on the proportion of firms reporting a shortage of machinery and plant capacity. From mid-December 1993 to mid-December 1994 this proportion virtually doubled to 35 per cent, which is the highest figure since the late 1980s, when the economy was overheated.

An extensive expansion of production capacity is planned by industrial firms for the coming quarter. At almost 30 per cent, the proportion of firms intending to enlarge capacity is the highest in the history of these surveys. The positive signals should ultimately help to counteract the inflationary tendencies. The favourable picture of industrial profits implies, moreover, that an appreciable increase in investment in the coming years can be financed internally.

*Output gap*
The output gap – the difference between actual and potential output – is a measure of overall capacity utilization. As potential production is not an observable phenomenon, its calculation has to start from various
assumptions. Thus there are different ways of calculating the output gap (see our closer look at various principles, p. 22).

For monetary policy, a measure of the output gap is needed that can explain the development of inflation. The yardstick presented below shows a close correlation with the course of Swedish inflation in recent decades. According to this measure of potential production, the output gap in the third quarter of 1994 was 2.6 per cent (Fig. 13). From its widest point in the second quarter of 1993, the gap had accordingly narrowed by 2 percentage points.

The output gap for 1994 is larger than we calculated last October. Besides reflecting the weak growth in the third quarter of 1994, this is because the size of the gap as presented in Fig. 13 is calculated with the expected future development of GDP. The gap accordingly refers to a given GDP in coming quarters. With a reasonably accurate forecast, this method is superior to those employed earlier. If the growth assessment is markedly mistaken, however, the estimation of the output gap is liable to be inferior to a result that does not incorporate expected GDP growth. Increased demand and decreased supply are both contributing to the narrowing of the output gap. The stronger competitive position for Swedish industry has contrib-

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10. The output gap is not equivalent to the concept of capacity utilization as measured by the National Institute and Statistics Sweden. It serves as an indicator of inflationary pressure in the economy the potential output represents a level of capacity utilization that does not generate either inflationary or disinflationary pressure. Actual production can thus be higher than the potential level, whereas capacity utilization is measured in relation to a maximum that, by definition, cannot be exceeded.

11. The calculations use filter technique with a Whittaker-Henderson spectral filter, which can be said to resemble a moving average.

12. The calculations presented in earlier reports did not allow for GDP’s expected path.

13. The output gap has been calculated with an annual GDP growth rate of 2.0–2.5 per cent from 1995 to 1996, distributed quarterly up to the end of 1996.
uted to a rapidly rising GDP at the same time as production capacity has shrunk in parts of the economy, e.g. the construction sector. Considering the registered development of GDP and the outlook for the coming years, it now seems likely that the output gap, as calculated here, closed in the fourth quarter of 1994 and that production will be in the vicinity of the long-term potential throughout 1995. In other words, overall capacity utilization is approaching levels which experience associates with increased inflationary impulses.

Note, however, that basing forecasts on historical relationships is bound to involve uncertainty. A situation where unemployment is high and capacity utilization varies widely between sectors may have consequences for inflation, in relation to a given output gap, that differ from those when unemployment was low and the sectors were more balanced.

Summing up, private consumption seems to have stopped falling and some increase was noted towards the end of 1994 but in the coming years the overall development of consumption is likely to be subdued. Industrial investment rose rapidly in the latter part of 1994 but not sufficiently to keep pace with the expansion of production. Industrial capacity utilization moved up in this period, albeit at a slackening rate, and at the year-end an increased proportion of firms reported shortages of machinery and plant capacity. But industrial firms are also optimistic about expanding capacity appreciably during 1995. The total output gap was still positive in the third quarter of 1994, though it had been virtually halved since the low had been reached little more than a year earlier. These developments add up to a risk of rising prices, particularly in manufacturing.

A CLOSER LOOK

Aspects of the output gap

In the discussion on economic policy, output gap and capacity utilization are somewhat ambiguous concepts. Capacity utilization sometimes refers to the technical dimension – the ad-
ditional output that would be feasible if existing facilities and workforces in a particular sector were fully utilized. With this definition, potential output is represented by the technical capacity of the production apparatus. In other contexts, conclusions about the output gap – now in the total economy – are drawn with reference to the degree of unemployment. In the public debate the usual practice is to measure the output gap in terms of unemployment.

An example of the latter category is Okun’s law, which relates the size of the output gap to the deviation of unemployment from its equilibrium level, which is assumed to be constant. In the 1950s and ’60s the relationship between inflation, unemployment and production seemed to be stable. This picture had to be abandoned when, for instance, the first oil price shock in the 1970s was followed by higher (structural) unemployment as well as higher inflation, despite the wider output gap that was indicated by Okun’s law. Today, therefore, the notion of a stable relationship between production, inflation and unemployment has given way to the idea of an equilibrium level of unemployment which is determined structurally and varies over time.

In a third approach, the output gap is perceived as an indicator of inflationary pressure. Potential output represents the level of capacity utilization at which neither inflationary nor deflationary tendencies are generated, which means that it can be exceeded. A method which the Riksbank, for instance, has adopted for calculating potential production in this sense uses filter technique – a stochastic method based on the assumption that the economy’s supply side is subjected to permanent shocks, whereas disturbances in demand are only temporary. An advantage of this method is that GDP data are sufficient, which does away with the need to calculate or determine capital stocks, equilibrium employment and total productivity. A drawback with the filter method is that, in principle, one has to decide to what extent the shocks derive from demand as opposed to supply.

Basing the output gap solely on GDP means that the current dual situation in the Swedish economy is disregarded. While the internationally oriented sector is expanding rapidly, profitability is weak in other sectors, e.g. retail trade. Another limitation is that no direct allowance is made for the high level of unemployment. However, there is reason to suppose that equilibrium unemployment in Sweden has moved up markedly in recent years. From a level around 2–3 per cent up to the beginning of this decade, various studies estimate that it has risen to a current level of about 6 per cent. Thus it is not self-evident that explicit allowance for unemployment would materially alter the picture.

In other contexts potential output is calculated with a production function, making it possible to weight the relative contributions from real capital and labour. The output gap for industrialized countries is computed in this way by the OECD. Potential output is arrived at by inserting the size of the capital stock (assumed given in the short run), the level of equilibrium employment and the long-term level of total productivity. Deviations between potential and actual output are explained by the cyclical variations in equilibrium unemployment and total productivity.

In the OECD’s assessment, the output gap for Sweden will still be large, about 2.5 per cent, in 1995, whereas we consider that the gap probably closed in the fourth quarter of 1994. The difference arises because, with the method used by the OECD, the picture of potential output in recent years is considerably more optimistic. With high potential GDP growth, the output gap remains large in 1995 even though actual GDP growth is substantial.

One implication of the OECD’s method is that changes in potential output are primarily determined by the estimated trend for total factor productivity. For the period 1990–94 the OECD calculations of potential output give an average annual growth rate of more than 1 per cent. The corresponding result with the filter

16. Rising total factor productivity is considered to account for the greater part of growth (about 2/3rds), while increased inputs of capital and labour normally contribute only 1/3rd.
method used by the Riksbank is an annual rate of less than 0.5 per cent. These figures should be compared with the period’s actual growth, which was negative.

A reasonable assumption is that potential GDP has not risen appreciably in recent years. Sweden’s macroeconomic imbalances, manifested in the markedly dual situation, are one indication of this. The dual situation and the attendant structural changes entail low growth because a redistribution of resources presupposes investment in new enterprises and expanding industries. This supports the assessment that the output gap closed in the fourth quarter of 1994 or is closing in the current quarter. From 1996 onwards, the situation for demand and supply in Sweden is calculated to be such that it contributes to increased inflation.
The level of costs in the economy is strongly influenced – via wage formation – by the situation in the labour market. Another important factor in this respect is the growth of productivity. These two aspects of the picture of inflationary pressure are analyzed in this chapter, which concludes with a closer look at the conditions for wage formation in Sweden.

The number in open unemployment fell from the third to fourth quarter of 1994. The reduction in the number was accompanied by a fall in the number in employment, above all in construction and the wood products industry. When unemployment and employment both fall, the labour force contracts. This is mirrored, for instance, in increased participation in labour market programmes as well as in education.

In January 1995 open unemployment turned upwards, to 8.2 per cent of the labour force, but this was largely a seasonal phenomenon (Fig. 14). The total unemployment rate (open unemployment plus participation in labour market programmes) in January 1995 was 12.9 per cent of the labour force (incl. training participants). The number of unfilled vacancies has risen continuously since October but the level is still low.

The weak labour demand in recent years has helped subdue wage increases. In 1993 the total wage level rose 3.3 per cent.\(^7\) Ac-

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**FIGURE 14. Labour market**

Thousands

*Seasonally adjusted figures.
Sources: National Labour Market Board and Statistics Sweden.
cording to the short-run wage statistics, the rate of wage increases was somewhat lower in the first three quarters of 1994 but the tendency pointed upwards (Table 1).

In the private sector the rate of wage increases moved up during 1994 due to rising wages for workers. An upward tendency is also discernible in the public sector. The average wage level has risen most for municipalities and county councils, which largely reflects a combination of negotiated increases above 2 per cent and structural wage drift.

18. The variation in central government wage increases is mainly explained by statistical revisions after the Post Office and Telecommunications Administrations had been converted into limited companies.

19. Changes in the composition of the labour force are calculated to have contributed 0.5–1 percentage point to the rate of wage increases.

### Table 1: Sectorwise wage formation

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Private sector</td>
<td>2.3</td>
<td>2.3</td>
<td>2.5</td>
</tr>
<tr>
<td>workers</td>
<td>2.2</td>
<td>2.8</td>
<td>3.2</td>
</tr>
<tr>
<td>salaried staff</td>
<td>2.4</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>Central government</td>
<td>3.9</td>
<td>1.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Municipalities</td>
<td>3.9</td>
<td>4.0</td>
<td>4.2</td>
</tr>
<tr>
<td>County councils</td>
<td>2.7</td>
<td>3.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Total economy</td>
<td>2.8</td>
<td>2.7</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Sources: Statistics Sweden, Association of Local Authorities, Federation of County Councils and Riksbank calculations.

The average rate of wage increases in 1994 is calculated to have been 3 per cent for the total economy and just over 4 per cent for industrial workers. With the introduction of a general employment support scheme and one qualifying day in health insurance, labour costs are calculated to have risen somewhat less than wages in 1994. As of 1995 payroll charges have gone up 1.5 percentage points, which means that this year labour costs will rise by more than the increase in wages.

**Figure 15. Labour productivity (output per man-hour)**

Annual percentage change, moving 4-quarter average

Source: Statistics Sweden (national accounts).
Total labour productivity improved between the third quarters of 1993 and 1994 by just over 1 per cent. This means that productivity growth slackened after accelerating continuously in the three preceding quarters (Fig. 15). The weaker tendency came mainly from the sector producing goods (e.g. agriculture, manufacturing and construction), where the annual rate of productivity growth in the third quarter of 1994 was just under 5 per cent. Productivity in private services was at the same level as a year earlier.

With rising wage increases and slackening productivity growth, in the first three quarters of 1994 the overall level of unit labour costs tended to move up. It is mainly the service sector which contributed to this. In the sector producing goods, unit labour costs seem to have gone on falling.

A CLOSER LOOK

Wage and price formation

Wage formation is a central factor in price formation. In general, avoiding inflationary impulses presupposes that wages do not rise faster than productivity. Sector differences in productivity growth should therefore be mirrored by differences in the development of wages. The notion of compensation has a strong tradition in the Swedish economy; wage increases in the internationally oriented sector have led to compensatory increases in other sectors. As the latter increases did not follow productivity, this has often resulted in increased inflation.

Another characteristic of wage formation in Sweden is the high degree of real wage flexibility. One explanation is that when high real wages threatened employment, the krona has been devalued and this, together with increased inflation, has contributed to real wage cuts. Today, economic policy is focused on price stability, making real wage flexibility difficult to achieve if nominal wage formation is not sufficiently variable. This implies altered conditions for the wage negotiations in 1995.

New conditions for wage formation

There are also other respects in which the current situation for wage formation in Sweden differs from the 1980s. One important difference is the high level of unemployment, which has contributed to the retardation of wage increases in recent years. International experience shows, however, that wage increases can accelerate even though unemployment is high, particularly in countries where long-term unemployment has risen sharply.

The inflation expectations of the labour market organizations are another factor behind wage and price formation. In February 1995 these organizations envisaged that inflation in the next two years would average about 3.5 per cent. This is higher than their expectations last October and the upward revision is most pronounced for the employee organizations, which may imply increased wage demands in the coming negotiations.

Wage expectations have also moved up since October 1994. In February 1995 purchasing managers in industry and trade, as well as the labour market organizations, expected that in the next two years the rate of wage increases would average 3.5-4 per cent. The employer organizations and the purchasing managers had made substantial upward revisions to their wage expectations for the coming year.

The centralized element of wage setting in Sweden has diminished in recent years. A stronger link to productivity in individual sectors and firms could facilitate relative wage shifts, thereby providing better conditions for avoiding inflationary impulses from the labour market. It is hardly likely, however, that local wage setting will already predominate in 1995. At present it seems more probable that the negotiations will be conducted at sector level.

In the run up to the 1995 wage negotiations a group of economists from various labour market organizations has agreed on a wage norm,
which amounts to holding the rise of labour costs to 3.5 per cent in 1995 as well as 1996.\footnote{The norm starts, among other things, from OECD forecasts for labour costs in 1995 and 1996.} As increased payroll charges are adding about 1 per cent to labour costs in 1995, the group considers that 1995 wage increases, including wage drift, should not exceed 2.5 per cent.

**Outlook for wage formation**

Some factors point to an average wage rise that is clearly restrained compared with the 1980s. The most important of these is the high unemployment. The long-term unemployment rate in Sweden is still considerably lower than in other countries with the same high rate of open unemployment. There also seems to be a greater awareness that high nominal wage increases ultimately obstruct a favourable development of employment and real earnings. In addition, when employment picks up, there may be a tendency for the average wage rise to be held back by structural effects.\footnote{Statistical wage drift occasioned by changes in the composition of the labour force, severance pay, overtime, etc.}

Other factors, however, suggest that the average wage rise may accelerate. The krona’s depreciation and strong international demand have resulted in high industrial profits, which probably weaken the resistance to large wage increases there. The upward movement of inflation expectations and the remaining notions of compensation also indicate a higher rate of wage increases.

A relevant issue is the extent to which higher industrial wage increases will lead, as in the 1980s, to demands for compensation in other sectors. The protected sector was expanding in the 1980s and compensatory wage demands did not meet much resistance. Today, however, the number employed in this sector shows a downward trend. There are also signs of a greater propensity to accept larger wage differences and to concede that wage increases should not exceed the rate in the main competitor countries.

An overall assessment is that high unemployment has reduced the risk of compensatory wage increases. At the same time, high inflation expectations and substantial business profits, together with a limited supply of certain categories of labour, represent risks in the context of wage formation.
In that economic policy has effects on demand, inflation and inflation expectations, monetary policy is conditioned by the actual as well as the expected future direction of fiscal policy. The development of public sector finance is accordingly a central factor for the construction of monetary policy.

Together with the ongoing economic recovery, the measures for budget consolidation that were approved in the past parliamentary term led to an improvement in central government finance during 1994. The primary borrowing requirement (the total requirement less debt interest) decreased, while interest payments went on rising. In the second half-year the total borrowing requirement pointed downwards and the total for 1994 was SEK 184 billion (Fig. 16).

Tax increases and spending cuts proposed in the Fiscal Policy Bill in November 1994 are estimated to give a total reinforcement by 1998 (the end of the present parliamentary term) of more than SEK 57 billion. The effect by 1998 of further spending cuts proposed in the Budget Bill in January 1995 is calculated to be almost SEK 22 billion. Together with the measures from the previous parliamentary term, the Ministry of Finance estimates that the proposed net budget reinforcement will total SEK 96.4

**Figure 16. Government borrowing requirement**
SEK billion, cumulative 12-month figures

Sources: Ministry of Finance and National Debt Office.

billion, which is equivalent to about 6 per cent of GDP in 1995. Almost half of this total is calculated to be in place in 1995.  

Given that Parliament approves the additional consolidation proposals, the borrowing requirement will continue to fall in 1995 and 1996. The development of public finance therefore appears favourable in the short run. However, the gross debt ratio (general government gross debt relative to GDP), besides responding to the degree of budget consolidation, also depends on economic development in general (mainly economic growth and the level of interest rates).

The purpose of the consolidation programme is to stabilize and ultimately reduce the debt ratio. But even if this is achieved, with the underlying assumptions the level of the gross debt ratio throughout the period in question will remain exceptionally high, both historically and internationally. There is a discussion as to whether the budget improvements outlined here are sufficient to subdue inflation expectations, which are partly elicited by the public sector’s financial imbalances. There are also fears that a stabilization of the gross debt ratio may be temporary if an economic slowdown were to lead to a pronounced accumulation of debt.

It is broadly understood that confidence in economic policy can be enhanced by measures for consolidating public finance. A lack of confidence can entail persistently high interest rates, a weak exchange rate and considerable interest and exchange rate variability. That would add to the burden of the public debt and tend to weaken economic growth.

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25. In addition, budget reinforcements for financing the EU contribution have been put forward and further savings (about SEK 3 billion) for this purpose are to be proposed later. Moreover, SEK 9 billion for the Government’s proposed action programme against unemployment remains to be financed.
The stabilization programme which the Danish government presented in 1982 aimed for a reduction of the structural budget deficit by more than 4 per cent of GDP already in the coming year. This was followed by a series of years with a tight fiscal stance. The new direction of economic policy soon led to lower interest rates. In conjunction with an economic upswing and credit market deregulation, this contributed to a marked expansion of private consumption in the mid-1980s. The «potato diet» which followed in 1986 was primarily intended to subdue consumption and avoid an overheated situation. In the period 1982–1986 the reinforcement of the primary budget balance\(^{26}\) relative to GDP totalled about 15 percentage points (Fig. 18).

In Belgium the adoption of emergency powers in 1982 enabled the government to proceed with extensive budget consolidation. In the period 1981–1987 the improvement in the primary balance relative to GDP amounted to more than

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\(^{26}\) Budget balance excl. interest expenditure.

\(^{27}\) These norms entail an increase in tax revenue to at least match GDP growth, no real increase in primary expenditure and an annually balanced social security system.

**Figure 18. Primary budget balance**

Per cent of GDP

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* 1994–96 OECD forecast.

8 percentage points. Various rules for government finance, introduced in the late 1980s, were replaced in 1992 by norms in the framework of the convergence programme.27

In both Belgium and Denmark, the process of budget consolidation is one component of an anti-inflationary policy where another important component is a fixed exchange rate. Since the mid-1980s, with the exception of the period of interest and exchange rate unrest in the autumn of 1993, the currencies of these two countries have been broadly stable in relation to the Deutschemark.

In Sweden, government finances seemed to be improving as rapidly as in Belgium and Denmark in the early 1980s. Instead of achieving this with budget cuts, as in Belgium and Denmark, Sweden opted for devaluation. As a result of the extensive transfer systems and the direction of labour market policy, the government budget in Sweden is sensitive to cyclical changes. Besides leading to decreased public expenditure, the stronger growth in the wake of the devaluations in the early 1980s, together with the tax system's progressive features at that time, generated increased tax revenue. The structural changes in the Swedish economy in recent years have made it clear that a solution to the problems in central government finance was deferred.

In Denmark the government debt ratio had already become more or less stable in 1984 at 65–70 per cent of GDP. The level of interest expenditure has likewise been stabilized, at around 4 per cent of GDP (Fig. 19). In Belgium, on the other hand, government debt has gone on rising and the expected level at which it will stabilize is around 140 per cent GDP. With debt interest expenditure running at between 8 and 10 per cent of GDP, the total budget deficits have remained large despite primary surpluses and low interest rates.

The present situation for government finance in Sweden – in terms of the level of the deficit and debt – is reminiscent of the situation in Belgium and Denmark at the beginning of the 1980s. The GDP share for government debt in Sweden is now almost as high as it was in Belgium in 1982. But as Sweden's economic crisis has been more profound, the primary balance has weakened more markedly and government debt has accumulated more rapidly. The room for manoeuvre in Sweden is therefore greatly curtailed, particularly as the situation also includes a high revenue ratio. This leaves little room for budget reinforcements in the form of revenue enhancements.
Conclusions

Policy in Belgium and Denmark focused in the 1980s on price stability and measures for consolidating government finance. The situation for government finance has become appreciably better in Denmark, while less progress has been achieved in Belgium. But in both countries the rate of inflation is among the lowest in the EU area and the interest differential with German rates is relatively small. The development in these countries demonstrates the importance of perseverance and long-termism in economic policy. In order to promote sustained growth and price stability, it is necessary to overhaul structural factors that entail large deficits when activity is low and to introduce systems which can be maintained in the longer run.

The experience from Belgium and Denmark also shows that the measures for stabilizing government debt have to be very substantial. The example of Belgium, moreover, is a clear illustration that the task of reversing public debt once this has reached a very high level is both difficult and costly. The higher the initial levels of debt and interest expenditure, the larger the primary surpluses that are required for this.

Even with vigorous measures, achieving a good situation for government finance takes a long time. With the increasing internationalization of capital markets, however, effects on interest and exchange rates are liable to be swift, as are changes in confidence. A resolute effort for budget consolidation today can therefore produce effects more quickly than in the 1980s.

The experience from Belgium and Denmark shows that the policy for budget consolidation must be implemented both consistently and over a long period in order to reap the benefits – in the form of lower interest rates and a stable exchange rate – that can accrue from high credibility. The policy has also endowed those countries with low inflation and good economic growth. The conclusion, therefore, is that a policy constructed for sound government finance and price stability is a policy that pays.
5 Financial indicators

The analysis in this chapter concerns financial indicators for various aspects of monetary conditions and inflation pressure – interest rates, exchange rates, the money supply, credit aggregates and asset prices.

*Interest and exchange rate tendencies*

Since our previous report, three repo rate increases, each of 20 basis points, have been announced: on 27 October (with effect from 1 November), on 13 December (from 14 December) and on 9 February (from 14 February). High industrial capacity utilization and a persistently weak exchange rate, combined with rising inflation expectations, indicated a need for these measures to ease the monetary stimulus. Compared with 10 August 1994, the level of the repo rate on 20 February 1995 represented an increase of 88 basis points.

The increase in the repo rate in August 1994 was followed by a brief period of interest unrest but this soon gave way to a relatively calm period with a distinctly positive tendency. Bond rates and the gap with German rates both decreased, while the exchange rate tended to strengthen. This could be interpreted as increased confidence in the overall direction of economic policy. The repo rate increases in October

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**Figure 20. Interest rates since 19 November 1992**

Daily quotations, per cent or percentage points


Source: The Riksbank.
and December 1994 and February 1995 had been expected by investors and savers, which confirmed the economic policy commitment to price stability.

Bond rates show some fall since the middle of October. The 10-year treasury bond rate was 11.1 per cent on 18 October 1994 and 10.8 per cent on 20 February 1995. The difference from German rates in this period narrowed slightly from around 3.8 to 3.4 percentage points (Fig. 20).

After the stronger tendency in the autumn of 1994, the krona weakened again from the end of December. Compared with mid-October, the exchange rate at mid-February had weakened almost 3 per cent against the Deutschmark and about 1 per cent against an index which allows for competitive positions. The rate against the Deutschmark had accordingly returned to the level before the repo rate increase in August 1994, while the effective exchange rate was still about 2 per cent stronger (Fig. 21).

In that the weakening of the krona at the end of 1994 and early in 1995 was accompanied by a stable interest difference with German rates, it seems that the former tendency was primarily due to other factors. The international exchange market unrest in connection with the currency crisis in Mexico, which began at the end of December 1994, and the earthquake in Japan, led to increased demand for Deutschmarks among international investors. The effect of this was greatest in countries such as Sweden, with a history of high inflation and problems with government finance.

Money supply and credit
Changes in the money supply can provide information about the future development of prices. M3 used to be a good leading indicator of inflation but in recent years this relationship seems to have weakened, as suggested by estimations at the Riksbank. A stable relationship in this respect presupposes that money demand is reasonably

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28. The MERM-weighted index.

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**Figure 21. SEK exchange rate with DEM and the effective (MERM-weighted) exchange rate**

![Graph showing SEK exchange rate with DEM and the effective (MERM-weighted) exchange rate from January 1993 to January 1995.](image)

*Index: 18 November 1992=100
Source: The Riksbank.*
constant. In other words, for a given interest rate and GDP growth, the non-bank public's demand for liquid assets should be fairly stable. Considering the width of the band within which growth of the money supply is consistent with price stability and real economic development, figures for the money supply should be interpreted with caution.

For January 1995 the 12-month change in M3 was -2.3 per cent (Fig. 22) and the average of the change figures for the past six months was 1.8 per cent. The comparatively low rate is partly explained by a movement away from M3 components such as bank deposits: households have continued to convert bank balances into somewhat less liquid investments that give a higher return. Households have also reduced their holdings in national savings accounts, accompanied by increases for private bonds and long-term insurance saving, for instance.

The possibility of this indicating that households are not planning for increased consumption in the near future depends on whether or not they intend to hold these assets to maturity. Persistently high interest rates provide a saving incentive that augments the weak tendencies in consumption. Another factor is the considerable interest difference between bank deposits and alternative, longer investment. This attracts long-term saving away from M3 components, which amounts to a structural adjustment.

The slack M3 growth also reflects some redistribution in the business sector. Like households, firms have shifted M3 assets to instruments, mainly treasury bills, that are not included in M3.

Lending is another important financial indicator of inflation. Lending by credit institutions to the non-bank public has been falling continuously since 1992. This process of debt consolidation has been most pronounced among firms. The repayment rate, measured as the 12-month change in the total stock of business sector loans,
peaked in December 1993 at about 8.5 per cent (Fig. 23). However, domestic currency bank borrowing by firms rose continuously in 1994, suggesting that demand for business credit is beginning to recover.

A need for a further reduction of firms’ foreign currency liabilities in order to lower exchange risks does not seem to exist, though loan repayment may be undertaken for other reasons. In view of the high level of industrial profits, however, the future conditions for a favourable development of investment should be good. 30

**Asset prices**

Price movements for shares, real estate and other assets affect wealth positions and accordingly have consequences for private consumption and investment. Asset price changes therefore provide information about future demand and inflation but it is important to bear in mind that they may also mirror relative asset price adjustments.

Price indexes for two important asset categories – shares and owner-occupied housing – are presented in Fig. 24. The share index was still rather variable last autumn but the level in January 1995 was almost 7 per cent up on September 1994. The trend for house prices, on the other hand, was downwards in the second half of 1994, after rising in the spring and summer. The development of house prices reported by Statistics Sweden shows a fall from September 1994 to January 1995 of more than 2 per cent. 31

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30. The high profit level as such may lead to further repayments of foreign-currency loans. But in that case the negative exchange rate effect is counteracted by a need to cover export receipts with forward currency sales.

31. Statistics from estate agents, which indicated that house prices were already falling last summer, were mentioned in our October report. The main reason for the lag in the figures from Statistics Sweden is that these are based on the date when title is registered, which is generally about two months after the purchase date.

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**Figure 23.** Lending* from credit institutions to the resident non-bank public, total and broken down between households and firms

Percentage 12-month change

*The loan stock has been adjusted for exchange rate movements and probable loan losses.

Source: The Riksbank.
The break in the rise of asset prices preceded or coincided with the downturn in private consumption in the third quarter of 1994. The subdued tendencies for house and share prices in the rest of 1994 and the beginning of 1995 points to a weak outlook for private consumption.

Summing up, the appraisal of financial indicators shows that both bond rates and the interest gap with German rates have decreased somewhat since our previous report was published in the middle of October. The high level of interest rates has helped restrain demand for credit, which is still slack. But the fall in advances to the non-bank public has slackened. Households and firms have continued to convert bank deposits into interest-bearing securities, which accounts for the low growth of the money supply. The picture of the money supply and credit demand, as well as the development of asset prices, point to weak domestic demand. At the same time, indications of a recovery in business demand for credit may point to increased investment activity in the future.

Considering the financial rearrangements which have occurred in the household and business sectors, the development of both the money supply and credit demand is compatible with the price stability target and a medium-term real annual growth rate of 2-3 per cent. The significance of the financial factors for inflation is difficult to assess. But they do not gainsay the picture conveyed by other indicators of a relatively subdued development of consumer prices and increased inflationary pressure in the industrial sector.

Figure 24. Price index for owner-occupied housing (current prices; index: 1981=100, left scale) and Stockholm stock exchange index* (index: end 1979=100, right scale)

*Up to 31 January 1995.
Sources: Statistics Sweden and Stockholm Stock Exchange.
6 Inflation forecasts and expectations

Inflation expectations play a part in the formulation of long-term nominal contracts and thus in price and wage formation. Expected inflation is one starting point for price setting by firms. Wage demands are also likely to move up with inflation expectations. In these ways, inflation expectations are liable to be self-fulfilling and accordingly provide important information about the inflation process.

The inflation expectations of households and industrial firms are presented in Fig. 25 in the form of survey data from the National Institute of Economic Research and Statistics Sweden. In February 1995 households expected that in the coming twelve months the average price rise would be 2.3 per cent, which is considerably less than in December 1994, when these expectations pointed to 3 per cent.

Among industrial firms, inflation expectations moved up last autumn and in December 1994 the average for the coming twelve months was 4.2 per cent. It is conceivable that expectations vary within this sector and that the survey replies reflect price assessments in the industry in question.

This possibility is underscored by the pattern of inflation expectations in the Institute’s survey of services in December 1994. In everyday retailing, for instance,
the expected rate was considerably lower than in other services and had also fallen back to 1.6 per cent, from 2.3 per cent in September. In other parts of the service sector, expectations for the coming year had moved up to between 3.6 and 4.2 per cent. It seems that inflation expectations in retail trade had been influenced by effects of EU membership and the slack outlook for consumption. Similarly, the picture of inflation in other services had been influenced by the strong upswing there.

The inflation expectations of firms are in line with the forecasts from various economic observers. In the latter part of 1994 the forecasts for 1995 were revised upwards from around 3 per cent to a level around 3.5 per cent (Fig. 26). For 1996 the forecasts point to a further increase in the expected rate of inflation, to just under 4 per cent.

Inflation expectations for the longer run, surveyed by Statistics Sweden among agents and organizations in markets for money, goods and labour, are presented in Table 2.

\begin{table}
\centering
\begin{tabular}{|l|c|c|c|}
\hline
\textbf{Annual change in CPI, per cent, in:} & 1 yr. & 2 yrs. & 5 yrs. \\
\hline
Employer organizations & 3.3 (0.3) & 3.5 (0.3) & .. (..) \\
Employee & 3.6 (0.7) & 3.7 (0.4) & 3.8 (0.1) \\
Purchasing managers, industry & 3.9 (0.0) & 3.9 (-0.4) & 3.8 (-0.5) \\
Purchasing managers, trade & 3.6 (0.2) & 3.8 (0.0) & 3.7 (-0.1) \\
Money market agents & 3.6 (0.1) & 3.9 (0.1) & 4.1 (-0.1) \\
\hline
\end{tabular}
\caption{Inflation expectations in February 1995, with the change from October 1994 in parentheses}
\end{table}

.. Data not available.

Source: Statistics Sweden.

The labour market organizations have revised their inflation expectations upwards since October 1994. It is noteworthy that among employee organizations the one-year expectations have moved up as

\begin{figure}
\centering
\includegraphics[width=\textwidth]{CPI_forecasts}
\caption{CPI forecasts for 1994, 1995 and 1996}
\begin{description}
\item[December to December, median level, per cent]
\end{description}
\end{figure}

Sources: National Institute of Economic Research, S-E-Banken, Nordbanken, Handelsbanken and Industriförbundet (Federation of Swedish Industries).
much as 0.7 percentage points. But the agreement with the expectations among employer organizations is still good.

Among purchasing managers in trade, inflation expectations are broadly unchanged, while their counterparts in industry have revised their longer-term expectations downwards, bringing them more into line with those of other groups.

In the money market, inflation expectations in Statistics Sweden's survey have not changed much and are well in line with the picture from the Aragon survey (Fig. 27). According to the latter survey, expected two-year inflation in February 1995 was 3.9 per cent, which is somewhat higher than in November 1994. At the same time, expectations of inflation three to five years ahead have been revised downwards from 4.5 to 4.2 per cent.

Financial investors' inflation expectations can also be estimated by using the yield curve to derive the implied forward interest rate curve. This curve can be useful in the assessment of inflation expectations for the longer run (more than five years) because most indicators do not extend that far into the future. With the rise and the variability of interest rates in 1994, however, an interpretation of the forward interest rate curve has become more complicated (Fig. 28).

The upward shift in interest rates is only partly accounted for by the higher interest expectations reproduced in Fig. 27. It is also difficult to attribute the interest rate movements to fluctuations in normal determinants of long-term real rates. But part of the upward movement presumably reflects an international increase in required real returns. This is suggested by the development of the British real bond market in 1994.\(^{32}\)

\(^{32}\)From January to November 1994 the real 10-year rate in the United Kingdom moved up from 2.7 to 3.9 per cent. Similar increases in real rates have been observed in Australia and Canada. For a discussion of this tendency, see OECD Economic Outlook, December 1994.
That the real interest rate has also risen in Sweden seems reasonable. The issue rates quoted on 6 February for 9- and 19-year real bonds averaged 5.58 and 4.91 per cent, respectively. The Swedish market for real bonds is still undeveloped and insufficiently liquid, which complicates the assessment of the real rates and thus of inflation expectations. But as the market develops, these assessments will become more precise.

While higher inflation expectations and real interest rates can account for part of the increase in Swedish bond rates in 1994, they do not explain the substantial interest rate variability.

In an alternative interpretation, however, the interest rate movements can be perceived as a consequence of problems with credibility in the development of government finance. These problems can be broken down into components.

One component stands for a perception among investors of some probability that the development of government finance may lead to the fight against inflation being abandoned, so that the economy develops a state of very high inflation. Even if this probability is very low, its effect on bond rates may be considerable. The bond rate variability in 1994, moreover, may stand for variations in such fears over time. In a formal sense, these fears are incorporated in the investors’ inflation expectations. If the probability of a state of high inflation is comparatively small, it may well be disregarded in surveys and forecasts if these tend to focus on inflation’s most likely outcome.

Seen in this perspective, inflation expectations and forecasts primarily mirror the feasibility of the price stability target and to a lesser extent the probability of this objective being abandoned. This is a credibility


34. Formal in that inflation expectations are given a mathematical guise – an average of alternative inflation outcomes weighted for their probability.

**Figure 28. Implied forward interest rate curves on 27 January and 7 October 1994 and 15 February 1995**

Effective annual rate, per cent

Source: The Riksbank.
problem of a different type, related in the first place to determinants of future inflationary pressure.

A third component of the credibility problem is that weaker government finance can lead to treasury paper becoming less creditworthy. An approximate quantitative measure of such effects is the additional premium on foreign-currency borrowing. In 1994 dollar loans were obtained by the Swedish Treasury at a rate which exceeded that for corresponding US Federal bonds by 0.4–0.5 percentage points. It should be noted, however, that as Swedish bonds denominated in dollars are less liquid, the liquidity premium may be substantial.

The credibility problem, as mentioned above, may entail considerable fluctuations in interest rates, making Swedish bonds more risky to hold if they may have to be sold before maturity. Thus the credibility problem may also find expression in a higher risk premium for holding Swedish bonds with long maturities.

The existence of credibility problems means that the development of forward interest rates must be interpreted with caution. It may be misleading, for instance, to see the downward shift since October 1994 as a sign that inflation expectations have fallen back. A more reasonable assessment is that economic development has become more credible and the risk of a tendency towards high inflation has receded somewhat. The upward movement of bond rates was broken after monetary policy had been given a more restrictive stance in August 1994. The bond rate trend since then has been downwards. The gap with German rates has also been narrowing since August 1994.

Summing up, most of the indicators point to a further increase in inflation expectations for 1995 and beyond. This picture is in broad agreement with the inflation forecasts from economic observers. The expectations, however, are not uniform, being lowest among households, where they have dropped back to 2.3 per cent, and among labour market organizations, where an annual rate around or just above 3.5 per cent is foreseen for the coming years. Industrial agents, facing strong demand, and money market agents both expect that inflation in 1995 and beyond will be around 4 per cent.
Monetary policy is evaluated in this chapter in the light of price developments in 1994 and the outlook for 1995. This is followed by an analysis of the indicators presented in earlier chapters and of the inflation outlook in the coming years.

In retrospect, developments in the spring and summer of 1994 can be seen to have signalled growing inflationary pressure, even disregarding the occasional effects of rising raw material prices. Starting from the information which is now available, there are therefore indications that monetary policy was too expansionary at the beginning of 1994.

The situation was ambiguous. The indicators of inflationary pressure were partly contradictory, which was one reason why the lowering of the instrumental rates continued in the first half of the year. The rising tendency in bond rates during the spring was interpreted initially as mainly due to occasional portfolio adjustments rather than to increased inflation expectations. This was because at that time the indicators of inflation expectations were not pointing clearly upwards. Looking back, however, it seems probable that the tendency did come in part from a combination of higher inflation expectations and greater uncertainty in this respect.

Another, related explanation is that monetary policy in 1993 and the early part of 1994 had been based on greater confidence in fiscal policy, with a tighter budget than proved to be the case. Decreased confidence in overall economic policy, not least as regards central government finance, contributed to the unfavourable development of the bond and exchange rates. The krona weakened appreciably towards the end of 1993 as well as in the summer of 1994.

In the light of the rapidly rising activity in the Swedish economy and the upward tendencies in inflationary pressure, in August 1994 the instrumental rate was increased. Since then, the monetary stance has continued to become less expansionary in that the instrumental rates were raised three more times, in October and December 1994 and in February 1995. A very approximate weighted combination of effects from the movements in interest and exchange rates indicates that at the end of 1994 the expansionary effect corresponded to almost 2 per cent of GDP. Thus, since the beginning of 1994, when the effect was strongest, the thrust of monetary conditions has become less and less expansionary (Fig.29).

Since our October report a number of factors, perceived at that time as most threatening for the price stability target, have developed unfavourably. Industrial capacity utilization has gone on rising and the upswing in investment has not yet resulted in sizeable additions to production capacity. Moreover, producers' home market prices have continued to move up, accompanied by higher inflation expectations. Together with the prospect of a continued economic upswing in Sweden and increased unit labour costs, this represents a risk of rising inflation in the coming years.

To date, however, these conditions have not generated any serious effects in consumer prices. The dual situation in the economy is one explanation for this. The combination of slack consumer demand and a
vigoruous industrial recovery has become increasingly manifest in price formation as well as in wages. Producer prices have been rising considerably faster than consumer prices. The dual situation is also evident in general inflation expectations, which differ greatly between agents and groups, above all in connection with their particular price assessments.

Under these circumstances it still seems that the inflation target for 1995 is liable to be exceeded. The risk of this happening appears to be somewhat smaller than at the time of our October report in that increased competition in conjunction with EU membership is having a favourable effect on prices and the pass-through to consumer prices has been relatively limited.

In a longer perspective the price rise for input goods, together with a persistently weak exchange rate, is a threat to sustained price stability. In the past half-year and more, however, monetary measures have been taken which will tend to curb inflation, not least in 1996. A stronger currency would help counteract the inflationary tendencies. It is also essential that wages in different parts of the economy follow productivity growth so that underlying inflation can be held at a low level after 1995. Otherwise there is a risk of the inflation target being exceeded in 1996 with the current direction of policy.

As regards the altered indirect taxes and subsidies, the actual impact on consumer prices is estimated to raise the CPI in 1996 by not more than 1 percentage point, probably considerably less. This means that price increases from those changes should be accommodated in the tolerance interval of 1 percentage point up or down that surrounds the 2 per cent target for price stability. It is against this background that the future development of monetary policy should be considered.

Increased confidence in overall economic policy is a necessary condition for a stronger exchange rate and lower market interest rates. This in turn would provide greater possibilities of subduing inflation expecta-
tions, counteraacting inflationary tendencies and establishing a balanced economic development. Continued efforts to reduce the structural imbalances in public finance are accordingly essential for enhancing confidence in the Swedish economy.

The appraisal of the inflation indicators demonstrates economic imbalances that constitute a threat to price stability in the years ahead. The paramount task of monetary policy is to subdue inflationary pressure in the economy and help prevent inflation expectations from exerting negative effects on price and wage formation.