



# Contents

■ Foreword	3
■ Chapter 1 Inflation assessment	5
Summary	5
The main scenario	7
The risk spectrum	12
Outlook beyond the forecast horizon	18
■ Chapter 2 Determinants of inflation	19
Financial markets and monetary conditions	19
External economic activity and inflation	28
Demand and supply in the Swedish economy	37
Inflation expectations	55
Deregulations, political decisions and transitory effects	57
■ Boxes	
Recent inflation	10
Economic effects of the uncertain security policy situation	15
Life assurance companies	22
Stock markets in the United States	32
The house market	41
Shortages and matching problems in the labour market?	50
Forecasting inflation with a rising repo rate	59





# Foreword

The Riksbank's monetary policy is targeted at keeping inflation at 2 per cent, with a tolerance for deviations up to  $\pm 1$  percentage point.

This Inflation Report reproduces the main features of the presentations and discussions of inflation at the Executive Board meetings on 3 and 10 October 2002. The assessment of inflation presented here is the Riksbank's overall appraisal of inflation prospects in the current situation. The Report constitutes the background to the Bank's monetary policy decision on 16 October 2002. Executive Board members may differ in their opinions about how inflation's main determinants will develop and the resultant impact on future inflation. Any divergent opinions of inflation prospects are recorded in the separate minutes of the Board meeting on 16 October, to be published on 30 October 2002.

The Riksbank Act (1988:1385, Chapter 6, Article 4) requires the Riksbank to hand over a written monetary policy report to the Parliamentary Finance Committee at least twice a year. The Riksbank has chosen to use two of the year's four Inflation Reports for this purpose. The present report is one of these.

The Inflation Report aims to provide a basis for monetary policy decisions and spread an awareness and knowledge of the Riksbank's assessments to a wider public, so that monetary policy is easier for outsiders to follow, understand and evaluate. The Report is also intended to encourage a discussion of matters relating to monetary policy.

This Report presents the Riksbank's appraisal of inflation prospects up to the end of 2004 Q3. In order to clarify the consequences for monetary policy, the analysis starts from the technical assumption that in this period the repo rate is unchanged.

Chapter 1 presents the Riksbank's overall assessment of inflation prospects in the main scenario and the current spectrum of risks. Chapter 2 contains a discussion of the most probable development of inflation's principal determinants. The report also contains a number of boxed texts, the purpose of which is to provide additional knowledge about matters of importance for inflation assessments and the formation of monetary policy.

Stockholm, October 2002  
Urban Bäckström  
Governor of Sveriges Riksbank



# Inflation assessment

*The general assessment of inflation prospects up to the end of 2004 Q3 is presented in this chapter, given the technical assumption that the repo rate is held unchanged at 4.25 per cent.*

## Summary

Since the time of the June Report inflation has come down somewhat more than was expected. In August the 12-month changes in the CPI and UND1X were 2.0 and 2.3 per cent, respectively. It is mainly domestic consumer price pressure that has been weaker (see the box on pp. 10–11). An increasingly clear picture of lower inflation is also emerging in other areas, partly as a reflection of the globally more subdued development of demand that has followed in the wake of the recent widespread financial turbulence and concern.

The long period of high activity in the United States – underpinned by strong productivity growth, greatly elevated share prices, high investment and low saving – gave way last year to a process of adjustment. Share prices fell markedly. Lower expected earnings and share prices prompted households and firms to adjust their balance sheets. This tendency was reinforced, moreover, by the unrest in financial markets, expressed for instance in rising risk premiums. All this led to a slackening of growth and inflationary pressure throughout the OECD area. At the same time, households and firms have benefited from rising real estate prices, an expansionary economic policy and falling interest rates. To date the financial system and the markets have functioned well and the adjustment has been able to proceed in orderly forms.

To sum up, the lower resource utilisation and inflationary pressure, together with efficient financial systems, imply that the fundamental conditions for a recovery are in place.

Signs of an incipient cyclical upswing in the United States were noted in the June Report and were judged to stimulate a recovery in other parts of the world as well. However, a further stock market fall, growing concern about earnings after a number of accounting scandals, and a slowing increase in producer prices have contributed, along with increased security policy risks, to greater uncertainty about growth prospects abroad. But there are also positive signals such as comparatively high productivity growth in the United States, a continuation of solid growth in household disposable income and a stabilisation of labour markets. Still, the new information as a whole points to the reinforcement of international activity being weaker and more protracted than was foreseen both in the June Report and at the time of the Riksbank's two monetary policy meetings in the summer. Lower global growth entails a continuation of weak price pressure from abroad, which eases the effect on Swedish import

prices in the forecast period. This is countered initially by, for example, higher oil prices than were foreseen in the June Report. All in all, Swedish import prices are now assumed to be lower one year ahead but much the same as in the June assessment after two years.

Economic activity in Sweden has been comparatively stable. According to the national accounts, GDP growth in the first half of this year was somewhat stronger than expected. However, recent statistics point to a slowdown, for example in manufacturing and trade, making the strength of the recovery more uncertain. The stock exchange fall is judged to mean that in the coming two years both investment and consumption will be weaker than was assumed in the June Report as well as at the time of the monetary policy meetings in the summer. This is accompanied by the prospect of fiscal policy needing to be less expansionary in order to comply with the spending ceiling, and the necessity of raising municipal taxes on account of financial deficits there. This implies lower domestic demand at the same time as net exports are now judged to be somewhat more subdued than envisaged earlier. The GDP growth rates in the main scenario are assumed to be 1.7 per cent this year, 2.3 per cent in 2003 and 2.1 per cent in 2004. Even with the slowdown, resource utilisation is judged to be comparatively high at present. Together with the gradual, tentative recovery, this contributes to a relatively stable path for inflation in the coming years. Given an unchanged repo rate, UND1X inflation in the main scenario is judged to be 1.8 per cent one year ahead and 1.9 per cent after two years, while the corresponding assessments for CPI inflation are 2.1 and 2.3 per cent.

The risk spectrum is also relevant for the formation of monetary policy. Financial market developments have added to the uncertainty about the extent to which the stock market fall and the poorer outlook for earnings will subdue consumption and investment in the rest of the world and in Sweden. The adjustment has proceeded in relatively orderly forms to date but it is conceivable that such an extensive decline in share prices will have more sizeable effects that subdue consumption and investment more than the main scenario assumes. If the international stock exchanges were to go on falling or their effect were to be more pronounced, the scenario for the Swedish economy could be considerably less favourable, leading to lower inflation here. This downside risk is only partly offset by an upside domestic risk associated with inflationary pressure in Sweden; the latter risk is now judged to be somewhat smaller than at the time of the June Report, mainly because during the summer inflation and inflation expectations have fallen back to levels more in line with the inflation target. On the other hand, the risks associated with resource utilisation and wage formation still apply. All in all, the balance of risks for inflation one and two years ahead is judged to be on the downside. The overall assessment is that, with the risk spectrum taken into account, inflation twelve to twenty-four months ahead will be approximately in line with the Riksbank's target, albeit somewhat on the low side.

## The main scenario

Briefly, the picture in the June Report of a recovery in the world economy still holds but on account of the prevailing financial concern, its path is now judged to be more subdued. GDP growth in the OECD area is put at 1.5 per cent this year, 2.4 per cent in 2003 and 2.8 per cent in 2004.

---

**The recovery in the world economy will be somewhat more protracted.**

---

For some time now the earlier and ongoing adjustment of share prices around the world has been leaving its mark on global economic development. The adjustment to date has been comparatively orderly. Together with higher credit costs as a result of, for example, increased aversion to risk, the downward adjustment of expected earnings and share prices has entailed a need for households and firms to adapt their balance sheets. This has led to a weaker global trend and lower inflation. At the same time, rising productivity, higher real estate prices, an expansionary economic policy and lower interest rates have helped to prevent a more unfavourable development. Finally there is the good stability of the financial system. All this is judged to provide a foundation for a future recovery.

The continued unrest in, for instance, financial markets during the summer, with steeply falling stock markets, bankruptcies and accounting scandals, has contributed to a renewed loss of consumer and business confidence in a number of countries. In the United States, the falling stock markets' negative impact on consumption is countered to some extent by a continued increase in real estate prices, which are considered to be more important for consumption than the changes in financial wealth. But decreased wealth and more subdued confidence in the household sector do motivate an adjustment of saving and a downward revision of consumption growth. However, a gradual improvement in the labour market and the continuation of an expansionary economic policy suggest that even with this downward revision, consumption growth in the forecast period will be comparatively stable. Even with the observed increase in productivity, the weaker outlook for consumption together with continued uncertainty about the size of future earnings growth is expected to mean that firms will have to make further balance-sheet adjustments and that investment growth will be lower than assumed earlier.

The outcome for last year's GDP growth in the United States has been revised downwards almost 1 percentage point, while developments to date point to a marginal upward revision for 2002. Growth in 2003 has been revised downwards about 0.5 percentage points. The increased uncertainty about the strength of the US economy has led to a general weakening of the dollar. During the forecast period both the euro and the Swedish krona are therefore judged to reach a stronger rate against the dollar.

---

**Despite weaker demand, core inflation in the euro area is still high.**

---

In Europe and Japan, the adjustment to lower expected earnings and share prices has not come as far as in the United States, as is evident, for example, from productivity and earnings not having improved as distinctly.

GDP growth in the euro area has been lower than expected this year. The weak domestic demand is partly a consequence of a further worsening of the labour market, while net exports have been positive. Despite the low growth of demand, core inflation and unit labour costs are high. This raises questions about total resource utilisation and potential growth in the euro area. During the forecast period, the combination of lower international growth and an appreciation of the euro means that net exports will be weaker, which contributes in turn to a somewhat poorer development of investment and consumption. All in all, GDP growth in the euro area has been revised downwards this year and next.

Resource utilisation is lower than expected, particularly in the global production of goods. As a result, moreover, international producer prices for manufactured goods have been weaker than assumed earlier. The surplus capacity that exists in manufacturing is judged to go on holding international export prices down. Oil prices have risen steeply since the time of the June report, due to political concern, lower supply and higher demand, above all in the United States. With higher demand this winter and continued security policy concern, the oil price is expected to go on rising during the rest of this year, followed by a fall as production in non-Opec countries is stepped up.

The extent to which price movements abroad affect inflation in Sweden depends on, among other things, the exchange rate and the size of the pass-through to consumer prices. In keeping with earlier assessments, the Swedish krona is expected to appreciate during the forecast period as a result of fundamental factors such as the sizeable surplus on the current account. Compared with the assessment in the June Report, the TCW exchange rate is now assumed to be marginally weaker at the end of the forecast period. This is partly connected with the development of terms of trade in recent years. But the krona is still assumed to strengthen substantially against both the dollar and the euro. Lower international export prices are countered in the short run by higher oil prices and subsequently by a somewhat slower appreciation of the krona. All in all, this means that imported inflation two years ahead is the same as was foreseen in the June report.

---

**GDP growth in Sweden is now judged to be lower in the forecast period, partly due to a tighter fiscal policy.**

---

Swedish firms and households have also adjusted their balance sheets for falling share prices and the financial market turbulence. Household saving has been increased and firms have made some rationalisations. Even with these adjustments, growth has been remarkably high. Important factors here are rising house prices, temporarily high income growth, lower interest rates, a weak exchange rate and financial stability.



The Q1 and Q2 national accounts have been published since the time of the June Report. They show that between the first halves of last year and this, GDP in Sweden rose 1.7 per cent, which is somewhat more than expected. More recent statistics make the strength of economic activity somewhat more uncertain. The figures on foreign trade indicate that the recovery of exports has been checked and business tendency data suggest that even excluding the telecom industry, manufacturing activity has slackened.

Lower international growth means that, compared with the June assessment, exports in the forecast period will be weaker. Even so, a stock market stabilisation combined with successively rising export demand should contribute to an increased utilisation of manufacturing capacity, which in turn stimulates investment. However, a tighter fiscal policy tends to dampen domestic demand and it is assumed that some municipalities and county councils will raise their taxes. This will have the effect weakening household disposable income and spending on consumption. All in all, the GDP growth rates are assumed to be 1.7 per cent this year, 2.3 per cent in 2003 and 2.1 per cent in 2004.

**Inflation in the main scenario is judged to be in line with the targeted rate.**

Employment has been stronger than expected so far this year but some fall is foreseen at the end of the year on account of further rationalisation and weaker demand. The rate of wage increases has also been somewhat higher than was foreseen in the June Report. Moreover, the disbursement of retroactive wages in the autumn, for instance in the central government sector, may mean that the average rate of wage increases in the total economy becomes even higher. An upward revision has therefore been made to the wage forecast for 2002. In the rest of the forecast period, however, more subdued resource utilisation leads to expectations of a somewhat weaker development of wage costs. As productivity has also been revised upwards to some extent for 2002, the level of average unit labour costs in the corporate sector is now judged to be lower than foreseen in the June Report, despite somewhat higher wage increases this year. This contributes to lower domestic inflation during the greater part of the forecast period. Together with lower imported inflation one year ahead, this means that some downward revision of UND1X has been made in the main scenario compared with the June Report, giving rates of 1.8 per cent one year ahead and 1.9 per cent after two years (Table 1 and Fig. 1).

Table 1. Inflation forecasts in the main scenario.  
Per cent

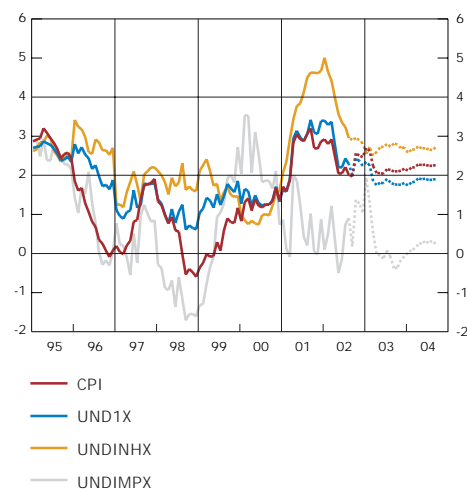
	Annual rate		12-month rate	
	2002	2003	Sept. 2003	Sept. 2004
CPI	2.4 (2.5)	2.2 (2.2)	2.1 (2.0)	2.3
UND1X	2.6 (2.7)	1.9 (2.0)	1.8 (1.8)	1.9
UNDINHX	3.6 (3.8)	2.7 (2.8)	2.8 (2.7)	2.7
UNDIMPX*	0.6 (0.6)	0.2 (0.4)	-0.4 (0.2)	0.2

Note. The figures in parentheses are the corresponding values in the June Report.

\* UNDIMPX shows price changes for goods that are mostly imported, excluding effects of changes in indirect taxes and subsidies.

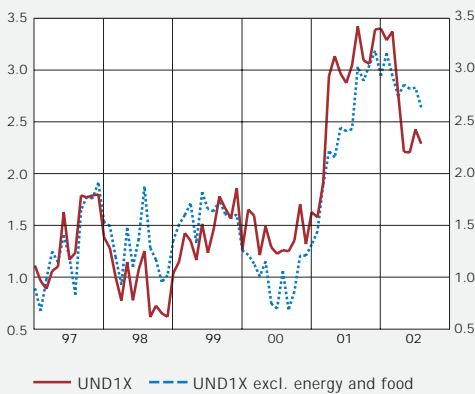
Source: The Riksbank.

Figure 1. Inflation: outcomes and main scenario.  
Percentage 12-month change



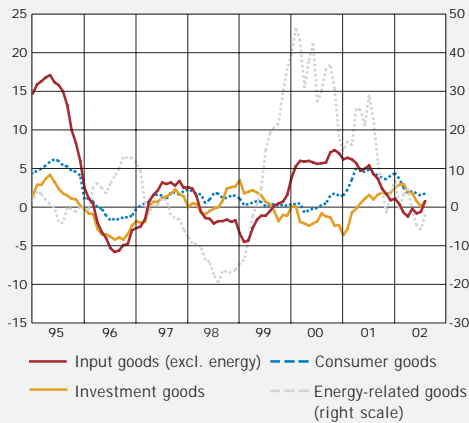
Sources: Statistics Sweden and the Riksbank.

**Figure B1. UND1X with and without energy and food items.**  
Percentage 12-month change



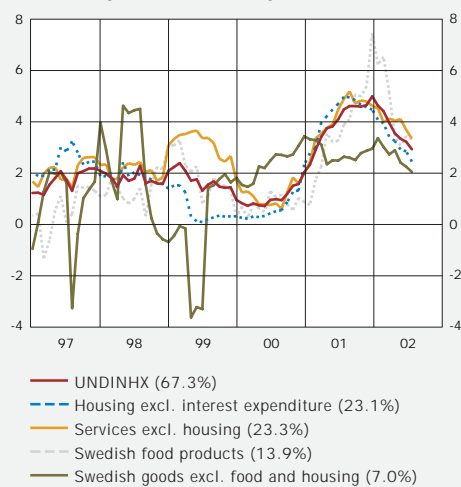
Sources: Statistics Sweden and the Riksbank.

**Figure B2. Price index for domestic supply (ITPI).**  
Percentage 12-month change



Source: Statistics Sweden.

**Figure B3. Underlying domestic inflation (UNDINHX).**  
Percentage 12-month change



Note. UND1X weights in parentheses. The series exclude effects of changes in indirect taxes and subsidies.

Sources: Statistics Sweden and the Riksbank.

## RECENT INFLATION

During the summer inflation has fallen back from the high levels in the spring (Fig. 1 on p. 9). In August, inflation measured as the 12-month changes in the CPI and UND1X were 2.0 and 2.3 per cent, respectively. Since the time of the June Report both domestic and imported inflationary pressure have eased. The rate of price increases in the services sector is decreasing but still high, while for goods it is more subdued.

Compared with the assessment in the June Report, both domestic and imported inflation have been lower, with August figures of 2.9 and 0.9 per cent, respectively. The main explanation for the difference between forecast and outcome is unexpectedly low prices for food and clothing. UND1X excluding energy and food has also been somewhat weaker than foreseen, with an August rate of 2.6 per cent (Fig. B1).

However, the rate of UND1X inflation excluding energy and food followed a rising trend from mid 2000 up to this spring and is still high. The upward tendency in the past two years is due to such factors as a weak exchange rate, price increases for intermediate goods, rising unit labour costs and comparatively high resource utilisation in Sweden. The rate has tended to slacken as expected during the summer, partly due to more subdued consumption growth, a recovery in productivity and lower prices for certain intermediate goods on account of a stronger exchange rate combined with falling international prices (Fig. B2). The net figures in the latest business tendency survey from the National Institute of Economic Research point, moreover, to falling price pressure in many sectors. In recent months the upward movement in underlying inflation has also stabilised in the euro area.

The rate of domestic underlying inflation has risen rapidly in the past year. The price increases have been most marked in the services sector, while price pressure in the goods sector has been somewhat more subdued (Fig. B3). This is partly because it was mainly in the services sector that last year's weak productivity growth tended to push unit labour costs up but another explanation is that higher prices for input goods contributed to price increases for transport services and hotel and restaurant services, for example. Changes in wage costs affect prices for goods less than for services in that the labour input is lower for goods. In recent months, however, the rate of domestic inflation has slowed. This is probably a consequence of the lower

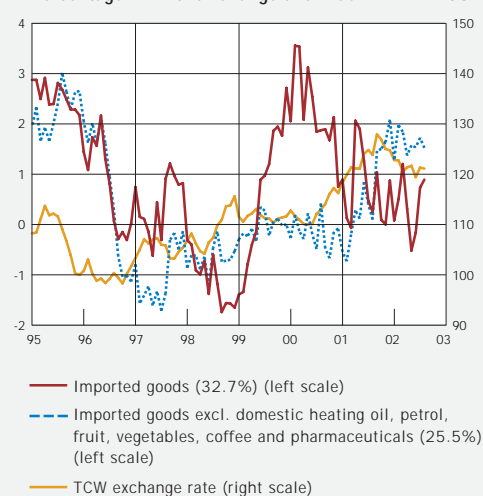
cost situation that results from an improvement in productivity growth and falling input prices. Still, insurance premiums and services prices that are set more administratively, for example municipal tariffs and car inspection, are continuing to rise at an accelerating rate.

The rate of price increases for imported, more manufactured goods has risen successively in the past year (Fig. B4). As price developments abroad have been subdued, this is probably a combined effect of the Swedish krona's earlier weakening and comparatively favourable demand in Sweden. The rate of price increases for imported goods has stabilised recently, which may have to do with the krona's appreciation since the end of last year.

Underlying or core inflation is a concept without a clear-cut definition and is accordingly measured in various ways. One involves adjusting CPI inflation for items that are judged to have an effect on the rate of inflation that is only transitory. Another approach is to exclude or reduce the influence of groups of goods and services where prices fluctuate widely. Measurements of both these types show that while underlying inflation has increased in recent years, it has fallen back since the spring (Fig. B5).

All in all, the combination of better productivity growth, a lower rate of price increases for input goods and lower underlying inflationary pressure implies that since the time of the June Report the short-run prospects for inflation have improved.

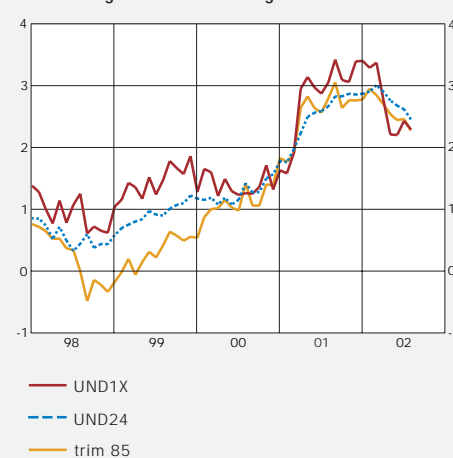
**Figure B4. Imported goods prices and TCW exchange rate.**  
Percentage 12-month change and index: 1997=100



Note. UND1X weights in parentheses. The series exclude effects of changes in indirect taxes and subsidies.

Sources: Statistics Sweden and the Riksbank.

**Figure B5. Alternative indicators of underlying inflation.**  
Percentage 12-month change



Note. The alternative measures are based on a decomposition of the CPI into 70 items: UND 24 is compiled with the item weights adjusted for the item's standard deviation from the total CPI over the most recent 24 months, while TRIM 85 excludes the most extreme price changes (7.5 per cent of each tail).

Sources: Statistics Sweden and the Riksbank.

## The risk spectrum

The inflation forecast in the main scenario represents the development of prices in the coming years that the Riksbank considers is most probable, given the technical assumption of an unchanged repo rate. As the forecast involves uncertainties, some alternative paths for inflation are also presented. These are compiled as a spectrum of risks that are relevant for the formation of monetary policy.

In the June Report the balance of risks for inflation in Sweden was judged to be on the upside, primarily on account of the upside risk from domestic inflationary pressure. The risks associated with international economic developments were balanced for inflation in Sweden. The period since then has been marked by a widespread stock market fall and financial uncertainty, as recorded in the minutes of the monetary policy meetings in July and August. During the summer the spectrum of risks accordingly shifted from a slight upside predominance to a more balanced situation. In this Report it is considered that the balance of risks has continued to shift to the downside, partly in that the upside risks from domestic inflationary pressure have diminished with the fall in inflation and inflation expectations and partly because the downside risks have been accentuated by the stock market fall and the financial uncertainty.

---

### The balance of risks has shifted downwards.

---

The global adjustment process after the period of very inflated share prices and investments has made itself felt but been orderly to date. But it may take time for this process to work itself out. The *financial market* uncertainty stems from a number of factors that taken together constitute a downside risk. For one thing there is the uncertainty about the extent to which the existing stock market fall will dampen investment and consumption among firms and households that are burdened to varying degrees by financial imbalances. The main scenario assumes that the correction of saving imbalances that has started will continue during the forecast period, approximately in line with what can be expected after a normal stock market fall. However, the magnitude of the decline in share prices in recent years has no parallel since the Depression in the 1930s, which underscores the difficulties in assessing its effects. It is therefore conceivable that the fall will affect consumption and investment to a greater extent than the main scenario assumes. Then there is the uncertainty about future stock market developments. For example, will the fall continue; will investors now have to get used to returns that are permanently lower; how soon can confidence be restored in the accounts of American listed companies; how will the security policy situation develop; and will parts of the financial system be exposed to strains. There are also questions about effects on future pensions in the light of the negative return on pension funds. And if stock markets go on falling, for instance as a result of continued financial turbulence, it is conceivable that the value of other assets will also decline. In such a scenario the international economic recovery that is a feature of the main scenario could be appreciably more protracted than assumed there.

---

The financial market developments are a downside risk for inflation in Sweden.

---

If effects of the stock market fall were to be greater or the fall were to continue, Sweden would be hit by decreased foreign trade as well as poorer domestic demand. The economy would then have difficulty in coping as well as in recent years. Fiscal policy would be tested more severely, which would no doubt ultimately lead, for example, to a weaker development of household income.

In addition, the accentuated international security policy concern, for instance about the tension between the United States and Iraq, can have effects whereby risk aversion remains high. This could have repercussions on the global currency and bond markets as well as on oil markets. A generally low appetite for risks could also worsen the propensity to invest in the United States, leading to a more pronounced weakening of the dollar than expected. But it is also conceivable that a brief military conflict in the Middle East would reduce some of the existing unrest and risk aversion and contribute to a quicker recovery.

The main upside risk is still considered to come from *domestic inflationary pressure*. This is partly because, even with the slowdown that has occurred, resource utilisation is judged to be relatively high initially. Since the time of the June Report, the effects of the price increases that were judged to be transitory have ebbed and this has been accompanied by a downward shift in inflation as well as in inflation expectations, which are now closer to the inflation target. But employment has been somewhat stronger and wages have risen more than expected. The price increases in the services sector, where wages make up a large part of costs, have admittedly slackened but remain high. In the main scenario the real economic outlook implies that resource utilisation will continue to be high and the labour market will remain tight in the forecast period. With more appreciable labour shortages, wage increases are judged to be high, above all in the local government sector. This could lead to demands for compensation from other groups in the labour market. Furthermore, the higher income taxes in the main scenario may lead to more general demands for compensation in wages.

---

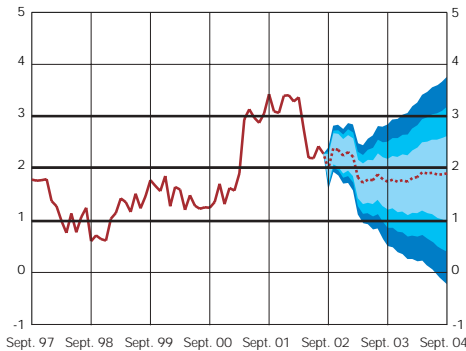
The upside risks associated with domestic inflationary pressure have diminished since the time of the June Report.

---

Growth to date this year has been somewhat stronger than expected. If demand were to go on exceeding expectations without a corresponding improvement in productivity, the result in time, when resource utilisation is relatively high and unemployment low, could be stronger domestic inflationary pressure. Then there are questions about labour supply, connected mainly with increased absenteeism for illness and its effects on average working time but also with the restrictive effects of any shortening of working hours.

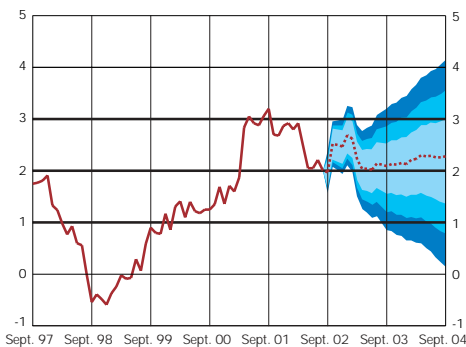
All in all, the upside risk from domestic inflationary pressure is judged to have become somewhat smaller since the time of the

Figure 2. UND1X with uncertainty intervals.  
Percentage 12-month change



Note. The uncertainty intervals show the 50, 75 and 90 per cent chances of UND1X inflation being within the respective range. The broken line represents the main scenario's forecast; the horizontal lines at 1, 2 and 3 per cent are the Riksbank's inflation target and the tolerance interval for the annual change in the CPI.  
Sources: Statistics Sweden and the Riksbank.

Figure 3. CPI with uncertainty intervals.  
Percentage 12-month change



Note. The uncertainty intervals show the 50, 75 and 90 per cent chances of CPI inflation being within the respective range. The broken line represents the main scenario's forecast; the horizontal lines at 1, 2 and 3 per cent are the Riksbank's inflation target and the tolerance interval for the annual change in the CPI.  
Sources: Statistics Sweden and the Riksbank.

June Report, mainly because both inflation and inflation expectations have fallen back.

On the whole, the balance of risks for inflation is judged to be somewhat on the downside both one and two years ahead.

The overall risk assessment is that the balance of risks for inflation in Sweden is somewhat on the downside; the downside financial risks are not fully balanced by the upside risks associated with domestic inflationary pressure. This is evident from Fig. 2, which shows the uncertainty on either side of the forecast for underlying inflation (UND1X). The forecast for CPI inflation also carries some downside risk (Fig. 3).

The uncertainty in the assessment of future inflation is judged to be greater than normal and the same as at the time of the June Report. The unrest in financial markets is admittedly greater but with reference to domestic inflation there is a case for the uncertainty now being somewhat smaller in that the rate of price increases has decreased as expected.

The monetary policy decisions are made in the light of an assessment of price developments above all from twelve to twenty-four months ahead, making the prospects for inflation in this time horizon particularly relevant. The Riksbank's weighted compilation of the various risks for future inflation is such that with the risk spectrum taken into account, UND1X inflation is expected to be 1.7 per cent one year from now and 1.8 per cent after two years (Table 2).

Table 2. Inflation forecasts including the risk spectrum.  
Per cent

	Annual rate		12-month rate	
	2002	2003	Sept. 2003	Sept. 2004
CPI	2.4 (2.6)	2.2 (2.3)	2.0	2.2
UND1X	2.6 (2.8)	1.8 (2.1)	1.7	1.8

Note. The table gives the mean values of the inflation assessment's probability distributions (see Figs. 2 and 3). The figures in parentheses are the corresponding values in the June Report.

Source: The Riksbank.

Table 3. UND1X inflation.  
Percentage probability, 12-month rate

	UND1X<1	1≤UND1X<2	2≤UND1X≤3	UND1X>3	Total
Sept. 2003	17 (8)	49 (45)	31 (39)	3 (8)	100
Sept. 2004	25 (18)	31 (29)	28 (30)	16 (23)	100

Note. The figures show the probability of UND1X inflation being in the column's interval. The figures in parentheses are the corresponding values in the June Report.

Source: The Riksbank.

Table 4. CPI inflation.  
Percentage probability, 12-month rate

	CPI<1	1≤CPI<2	2≤CPI≤3	CPI>3	Total
Sept. 2003	7 (5)	40 (40)	44 (44)	9 (11)	100
Sept. 2004	17 (12)	27 (26)	31 (32)	25 (30)	100

Note. The figures show the probability of CPI inflation being in the column's interval. The figures in parentheses are the corresponding values in the June Report.

Source: The Riksbank.

*The conclusion from the assessments presented here is that, adjusted for changes in indirect taxes, subsidies and house mortgage interest expenditure, inflation will be approximately in line with the 2 per cent target, albeit somewhat on the low side. The uncertainty in the forecast of future inflation is still considered to be greater than normal and the same as at the time of the June Report.*

## ECONOMIC EFFECTS OF THE UNCERTAIN SECURITY POLICY SITUATION

The uncertainty about the international security policy situation has increased and a military conflict in the Middle East cannot be ruled out. In the event of a war in Iraq, the effects could include the following:

- The immediate effect is the high price of oil and its negative impact on the world economy.
- The heightened uncertainty dampens the confidence of households and firms in the future directly as well as indirectly, for instance via asset prices, which in turn tends to restrain consumption and investment.
- A continuation of high aversion to risk and high risk premiums in financial markets also contributes to lower activity.
- Economic policy may be affected, for instance in the form of increased public spending.

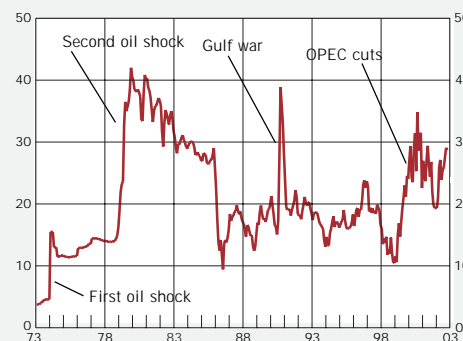
In the event of a military conflict, the question is how long it will last and whether there is a risk of it spreading or of oil production being disrupted. If a military conflict is brief, it has to be asked how long it will take to restore stability to the region and normalise oil production.

### EFFECTS ON THE PRICE OF OIL

The price of crude oil has risen since the late summer but is still a long way from the levels at the time of the Gulf war, when the barrel price briefly reached 40 dollars (Fig B6). The present situation differs in several respects from the state of affairs in 1990. The price rise at that time had to do with the world market being deprived of an essential part of the global output of oil; Iraq's invasion of Kuwait meant a loss of about 4 million barrels a day, equivalent to 5 per cent of world production.

Today Iraq accounts for only a couple of per cent of world output. Provided a conflict were confined to Iraq, supply would probably not become a major problem. In earlier crises, production losses have been made up for by Saudi Arabia. If Saudi Arabia were to be involved in a war and its oil fields were to be attacked

Figure B6. The price of oil.  
USD per barrel



Source: IPE.

or the major transport routes were blocked, the effects on the supply of oil could be marked.

A resolution of the conflict would mean good possibilities of an oil price fall. Iraq has the largest oil resources after Saudi Arabia and has had to restrict its production ever since sanctions were imposed. An end to the restrictions could lead to an oil price fall and a stimulus to the world economy. However, most observers consider that an appreciable increase in Iraq's oil production would take time to achieve on account of the large investments and additions to infrastructure this would require. It also presupposes that other members of Opec do not counter the additional supply by cutting their own output.

A lastingly high oil price would affect both growth and inflation. It would mean increased production costs as well as higher household spending on petrol and heating. In the main scenario the oil price is assumed to rise this year and then fall back. In the event of a longer period of uncertainty or a more protracted conflict, it is conceivable that the oil price remains high, with a greater effect on demand in the world economy.

#### EFFECTS ON CONSUMER AND CORPORATE CONFIDENCE

Confidence in the future has declined somewhat again in the early autumn, first among firms and then among consumers. Worries about a conflict are thus arising at a time when many agents already feel highly uncertain about future economic activity. The cause for concern stems primarily from the uncertainty about whether and when an intervention will occur and, if it does, how extensive it will be. In this respect the events this autumn resemble the situation after Iraq had invaded Kuwait in 1990, when confidence indicators likewise weakened until the outbreak of hostilities in January 1991.

The Gulf war probably contributed to growth being weak in both 1990 and 1991 but the recovery was comparatively rapid. Thus, it is the duration of the uncertainty that is important, as well as how quickly and decisively the conflict is resolved. The experience from 1991 shows that confidence, as well as stock markets and economic activity, can soon recover once the conflict has ended.

But it is also the costs for government finances that give cause for concern. The US Congress Budget Office estimates the direct costs of an attack to around 100 billion dollars a month, equivalent to 0.1 per cent



of GDP. In a situation where the federal budget is again running a deficit, that could tend to push interest rates up and necessitate fiscal restrictions (either higher taxes or lower spending). Together with concern about a protracted war, that could prompt households and firms to postpone consumption and investment, which would tend to dampen economic activity. The outlook for corporate earnings would then worsen, with a negative effect on share prices.

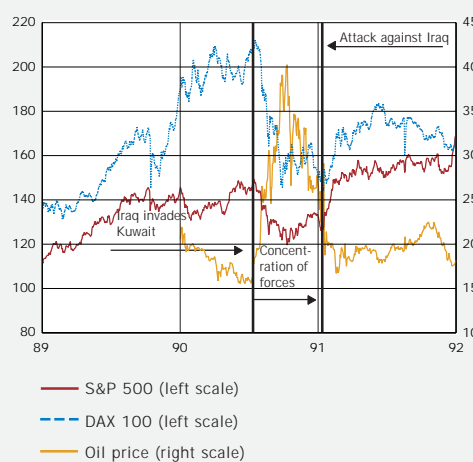
A conceivable scenario is that a possible conflict is quickly resolved, like the Gulf war. That could elicit markedly positive reactions in financial markets and the oil price, providing an economic stimulus. It is also reasonable to suppose that the downward factors during the build-up phase are quickly replaced by the opposite when firms and households resume their earlier plans for investment and consumption.

#### HIGH RISK PREMIUMS

A more protracted security policy concern can contribute to a persistently high aversion to risks and high risk premiums in financial markets. The situation is already strained for certain sectors, such as IT and telecom, and it may become even worse if confidence among investors and consumers continues to decline. In connection with earlier periods of international political concern (Figs. B7 and B8), for example when Iraq invaded Kuwait and the 11 September terrorist attacks, the priced risk was evident in the form of higher stock market volatility and marked share price falls. In connection with the Gulf war, volatility fell back to more normal levels and share prices rose again as the outcome became clear.

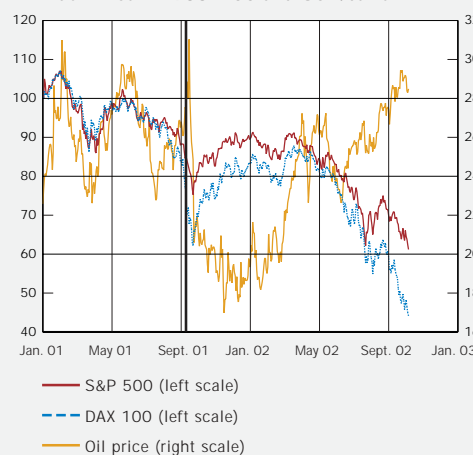
To sum up, a high oil price over a considerable period entails a sizeable risk of world economic activity being weaker than expected. Perhaps the greatest problem would be if a lastingly high oil price were to be combined with a long period of international uncertainty about the security policy situation. That would contribute to risk aversion remaining high and inhibiting a recovery in the world economy. But it is also conceivable that the conflict is resolved relatively quickly, so that oil prices and financial markets return to a state that has more to do with real economic factors such as demand and supply.

Figure B7. Period around the Gulf war: DAX and S&P 500 indexes and the oil price. Index: 1 Jan. 1988=100 and USD/barrel



Sources: IPE and the Riksbank.

Figure B8. After 11 September: DAX and S&P 500 indexes and the oil price. Index: 1 Jan. 1988=100 and USD/barrel



Sources: IPE and the Riksbank.

## Outlook beyond the forecast horizon

Monetary policy is normally directed at fulfilling the inflation target one to two years ahead. However, even developments in both the shorter and the longer run should be allowed to influence monetary policy. But as a rule, the longer the period covered by the forecasts, the greater will be the uncertainty.

The prospects beyond the forecast horizon are, of course, highly dependent on the course of developments in the next few years. This is particularly the case in the prevailing situation. On the one hand there may be a quick stabilisation, leading to a distinct global recovery with rising resource utilisation and a need for a more neutral economic policy. On the other hand it is conceivable that the financial turbulence continues and is accentuated by, for example, appreciable losses of real wealth as well.

If confidence in stock markets were to stabilise sooner than forecast and the conflicts in the Middle East were also quickly resolved, there are good reasons for supposing that economic activity would take off markedly. Economic policy is strongly expansionary, above all in the United States. Productivity growth is also unexpectedly favourable, for example in the United States, and households have a comparatively strong economy. It would then be reasonable to count on an appreciable increase in global resource utilisation, which would contribute to higher demand in Sweden, too. In such a scenario, inflation in Sweden would be crucially dependent on the development of potential output, in that this determines the level of demand that can be combined with price stability. In this respect there are some disquieting signs in the form of decreased average working time due to, for example, increased absenteeism for sickness and shorter working hours. At the same time, the economic upswing is occurring from a position where resource utilisation is already comparatively tight; besides calling for a labour market that is efficient and flexible, this probably means that economic policy needs to become successively less expansionary.

The other possibility – that the financial turbulence continues – would presumably lead to further rationalisation and cost-cutting in the corporate sector, increased unemployment and considerably greater uncertainty about household income. In time there would also be a fall in the real wealth of households, entailing an increased need to save. Lower activity would be liable to exert further pressure on the public finances abroad, which are already weak, as well as on budget margins in Sweden. In order to avoid a self-propelled negative spiral – where a weaker real trend generates increased unrest about asset prices and the sustainability of the government finances, thereby subduing activity even more – the situation would no doubt call for a shift in the overall composition of economic policy.

# Determinants of inflation

*This chapter presents the assessments in the main scenario of inflation's principal determinants in the coming two years. The financial markets and monetary conditions are considered first, followed by a discussion of the international situation and economic developments in Sweden.*

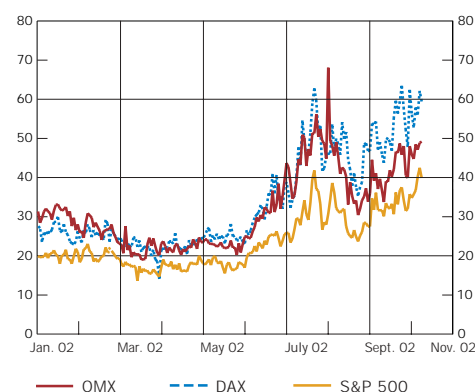
## Financial markets and monetary conditions

Since the time of the June Report the financial markets have been characterised by widespread turbulence and unrest as well as a poor appetite for risks, partly connected with the accounting scandals in the United States and falling share prices. A perception that more and more sectors, in addition to IT and telecom, are over-valued has left its mark on global stock exchanges. This partly has to do with growing uncertainty about future earnings and the strength of the economic recovery that is foreseen in the United States and Europe, even though both earnings and productivity in the United States have been unexpectedly favourable. The uncertainty arising from problems with corporate accounting has decreased to some extent since the summer but the uncertainty connected with the political concern about the Middle East and Iraq is still considerable (Fig. 4).

**Great uncertainty and little appetite for risks have coloured the financial markets since the time of the June Report.**

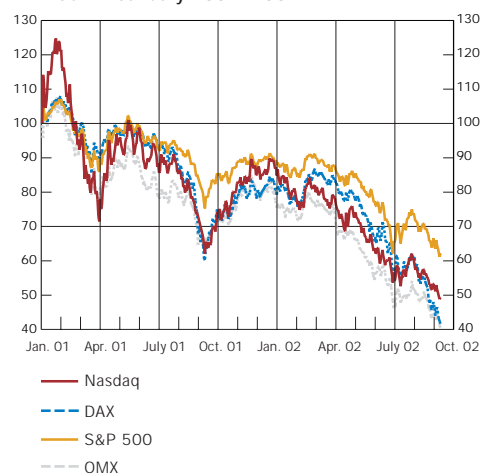
Stock exchanges have been weak. In the United States the S&P 500 index has fallen 26 per cent since the time of the June Report and in Sweden the SAX index has dropped 38 per cent (Fig. 5). Forecasting assumptions about stock market developments have been revised downwards successively during the summer in that the uncertainty about, for example, the quality of corporate earnings is expected to contribute to a higher risk premium for at least some time to come. Moreover, more subdued global growth points to a somewhat lower growth of earnings. The revisions also lead to lower future stock market valuations in terms of P/E ratios. Even so, a gradual increase in share prices is foreseen as confidence improves and the international economic recovery becomes increasingly distinct. It is conceivable, however, that restoring confidence will take longer, so that the stock market improvement is delayed.

Figure 4. Implicit historical volatility of OMX, DAX and S&P 500. Per cent



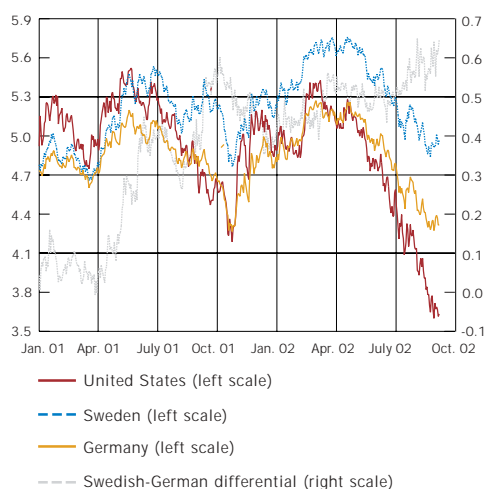
Source: Bloomberg.

Figure 5. Share prices: Nasdaq, DAX, S&P 500 and OMX. Index: 1 January 2001=100



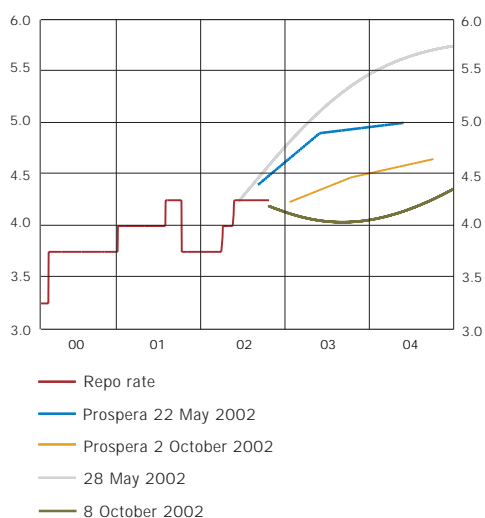
Source: Ecowin.

Figure 6. Ten-year government bond rates in the United State, Sweden and Germany and the Swedish-German differential. Daily quotations, per cent and percentage points



Source: The Riksbank.

Figure 7. Expected repo rate derived from Prospera's surveys and implied forward interest rates. Per cent



Source: Prospera Research AB and the Riksbank.

The uncertainty has been expressed in weak stock exchanges and falling interest rates.

The international stock market fall has contributed to a shift in favour of alternative investments that are safer, with the result that during the summer international bond rates fell appreciably more than had been foreseen (Fig. 6). Since the time of the June Report the American 10-year bond rate, for example, has dropped more than 1 percentage point, to the lowest level since 1958. In the past month, however, Swedish long bond rates have fallen less than their German counterparts and the difference between them has accordingly widened. Looking ahead, bond rates are expected to rise as the global economy recovers and stock markets become more stable. At the end of the forecast period the Swedish 10-year bond rate is expected to be not quite 6 per cent, which is somewhat below the assessment in the June Report.

The decisions to leave the instrumental rate unchanged at both of the summer's monetary policy meetings had been expected by market players. Surveys and market prices indicate that expectations of monetary policy have been adjusted gradually downwards (Fig. 7). Implied forward interest rates point at present to the repo rate being unchanged in principle two years from now, while the latest survey from Prospera indicates an increase to 4.75 per cent.

A general weakening of the US dollar left its mark on the currency market during the summer and had to do with, for example, the security policy concern, uncertainty about the US economy's recovery and the financing of the current-account deficit. The dollar has depreciated in an orderly manner and to the expected extent, though more quickly than had been foreseen. The effect on the euro of weak economic statistics on Europe has led to a recent stabilisation of the EUR/USD rate. During the summer there were periods when the Swedish krona weakened against the euro, partly as a result of financial unrest and less appetite for risks (Fig. 8). All in all, however, the krona is stronger today than at the beginning of June, perhaps partly due to EMU expectations in connection with the outcome of Sweden's general election. In the forecast period the krona is assumed to appreciate against both the dollar and the euro. However, the krona is expected to appreciate marginally less than calculated earlier, which has to do with the development of terms of trade in recent years. The main scenario envisages that the krona's TCW exchange rate strengthens to an average of 134 for this year, about 128 for 2003 and about 125 for 2004.

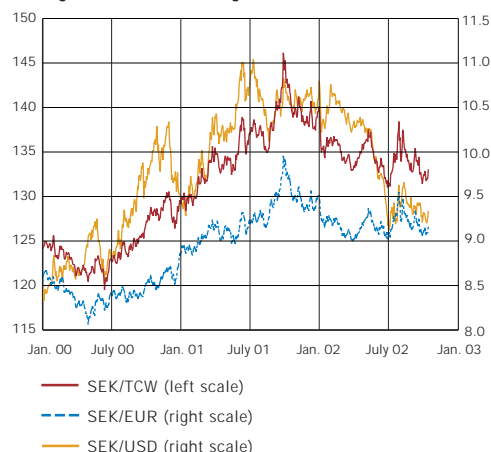
A general weakening of the US dollar left its mark on the currency market during the summer

The paths of money supply aggregates and credit to date this year likewise point to a future slackening of economic activity. The 12-month growth rates for different measures of the money supply slowed during Q2 (Fig. 9), though towards the end of the

summer M3 growth did turn upwards. Corporate borrowing, from banks as well as against bonds in the domestic market, has also followed this pattern of decline. The growth of household demand for credit from both banks and house mortgage institutions has slowed only slightly to date this year, probably because activity in the property market has remained high.

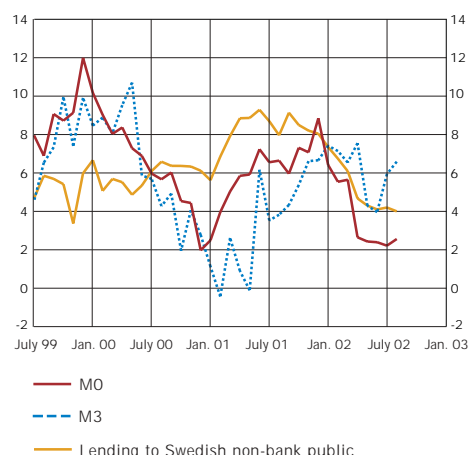
All in all, recent developments mean that the real monetary conditions have become somewhat more expansionary. The real exchange rate has become somewhat weaker and the real 5-year interest rate has fallen, while the real short-term interest rate has been broadly unchanged. In a broader financial perspective the expansionary effect has been countered by lower real share prices. Looking ahead, the monetary conditions are expected to become

Figure 8. SEK exchange rates.



Source: The Riksbank.

Figure 9. Money supply (M0 and M3) and lending by credit institutions to the Swedish non-bank public. Percentage 12-month change



Source: The Riksbank.

## LIFE ASSURANCE COMPANIES

The marked global stock market fall in recent years has drawn attention to life assurance companies and the diminishing value of their portfolios. It has been asked how pensions are affected, whether these companies can become insolvent, and whether this may force life assurance companies to sell shares in order to comply with the solvency rules, so that stock markets are affected. A special matter is whether the Swedish banks that own insurance companies may be hit by the developments. These issues are discussed below. It is concluded that the links with the real economy are limited and consist mainly of the effect on the level of pensions.

The life assurance market in Sweden is dominated by five players: Alecta, the Skandia Group, AMF Pension, the SEB Group and the SHB Group; between them their insurance entities administer more than 80 per cent of the total assets of Swedish life assurance companies. Alecta is a fully mutual company owned by its policy-holders, while the insurance companies owned by AMF, Skandia, SEB and SHB (one company) are run on mutual principles. Mutual companies and those run on mutual principles are non-profit entities. SHB Liv and Nordea Liv II are companies that do generate profits; between them they account for about four per cent of total assets.

In the non-profit companies it is the policy-holders that hold the capital and carry the financial risks. The capital consists of equity and bonus funds.<sup>1</sup> The capital in profit-making SHB Liv is owned by the parent company (SHB) but contingent bonus arrangements mean that the risks are carried to a high degree by the policy-holders; any return on the administered capital above the pledged level is distributed so that 90 per cent accrues to policy-holders and 10 per cent to SHB. In the non-profit companies, the surplus return is included in the core capital for future distribution to policy-holders or to cover any losses. In these companies the shareholders are compensated from sales of the company's products and its administration.

<sup>1</sup> Bonus funds represent an insurance company's accumulated earnings. The term is not applicable to companies that distribute profits to shareholders. Mutual insurance companies do not have equity capital.

Table B1. Life assurance companies at mid 2002.

Group	Company	Field <sup>a</sup>	Collective consolidation <sup>b</sup> (per cent)	Assets (SEK million)	Per cent of sector's assets
	Alecta	OLA	107 <sup>c</sup>	287 777	22
Skandiakoncernen	Skandia Liv	TLA	89	229 236	17
	Skandia Link	ULA		38 529	3
SEB-koncernen	SEB Trygg Liv Gamla	TLA	88	159 174	12
	SEB Trygg Liv Nya	TLA	93	8 927	1
	SEB Trygg Liv Fondförsäkring	ULA		42 709	3
	AMF-pension	TLA,ULA	96	188 981	14
SHB-koncernen	SHB Liv	TLA,ULA	- <sup>d</sup>	34 061	3
	SPP Liv	TLA	86/105 <sup>e</sup>	73 236	6
	SPP Liv Fond	ULA		7 122	1
Länsförsäkringar	Länsförsäkringar Liv	TLA	87	84 395	6
	Länsförsäkringar Fondliv	ULA		15 081	1
Folksam	Folksam Liv	TLA	90	54 501	4
	FolksamFond	ULA		3 812	0
	Folksam LO	ULA		3 528	0
FSB-koncernen	Robur Försäkring	ULA		37 065	3
Nordea-koncernen	Nordea Liv I	TLA	89	14 875	1
	Nordea Liv II	TLA,ULA		360	0
	Others			62 722	5
	<b>Total</b>			<b>1 330 856</b>	<b>100</b>

Note. <sup>a</sup> OLA: occupational life assurance; TLA: traditional life assurance; ULA: unit linked assurance. <sup>b</sup> Collective consolidation is the ratio of the value of investments to the value of the company's undertakings; preliminary data as of end August 2002. <sup>c</sup> Only operations with preferential pensions. <sup>d</sup> Not applicable to profit-making companies. <sup>e</sup> Individual savings-oriented insurance and preferential pensions.

Sources: Swedish Insurance Federation and Financial Supervisory Authority.

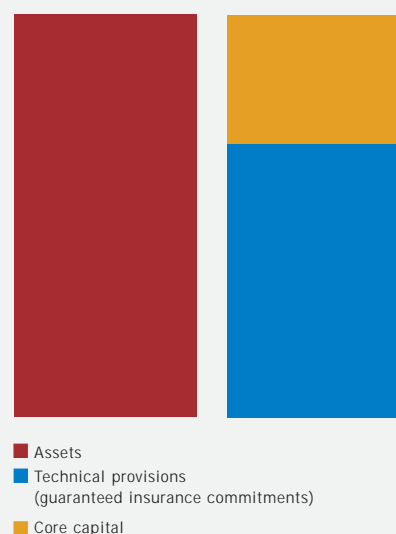
## IS THE SOLVENCY OF LIFE

### ASSURANCE COMPANIES IN DANGER?

The Insurance Companies Act requires life assurance companies to have core capital that at least matches their solvency margin. In addition to own capital, core capital consists of untaxed reserves and subordinated loans<sup>2</sup>; the holding of subordinated loans is limited to 50 per cent of core capital. In simple terms, the solvency margin is four per cent of technical provisions. The relationship between assets and core capital is illustrated in the margin.

Assets are valued at market prices and vary accordingly. Liabilities, which in addition to core capital consist in principle of technical provisions (TP) for future undertakings, are calculated in accordance with actuarial principles and are less volatile than assets. The

### Illustration of the relation assets, core capital and technical provisions



Core capital  $\geq$  (0.04 x technical provisions)

2 Loans that have low priority in the event of bankruptcy.

variables in the calculation of TP include, for instance, expected duration, future operating costs and "maximum discount rate"; the latter is the rate used to calculate the present value of the company's future payment flows and is set by the Financial Supervisory Authority (FSA) with reference to a EU directive which stipulates that the maximum rate is to be 60 per cent of the market rate for long-term government securities.

In general, the older life insurance companies are more solvent than the new operators in that they have had more time in which to accumulate surpluses. In a recent FSA study of the solvency of the thirteen largest insurance companies at mid 2002, all these companies were solvent at the current "maximum discount rate" but six of them reported that they would fall short of the statutory solvency target if this rate were to be lowered half a percentage point (from 3.5 to 3 per cent). The combined assets of these six companies amount to only about ten per cent of aggregate assets of all the life assurance companies. When FSA followed up these six companies at end August, solvency had declined for some of them but they all still met the target. An FSA decision on a new "maximum discount rate" is due on 23 October. Given the path of the long-term interest rate, a reduction of this maximum rate from 3.5 to 3 per cent is not improbable and would entail a lower degree of solvency for all the studied companies.

Even if a life assurance company were to no longer comply with the solvency rule, it does not necessarily follow that it would not be able to meet its commitments. For one thing, the technical provisions are calculated with cautious assumptions that tend to inflate the value of liabilities and, for another, the greater part of the disbursements are due a relatively long way into the future. By then, the investments may well have recovered some of their earlier value. So if a life assurance company did have to be wound up, other companies should be interested in taking over its operations. As a rule, moreover, liquidity is not a problem because the commitments do not have to be met for quite a long time; moreover, it does not pay holders to cancel their policies and in certain cases this is not permitted.



## IS THERE A RISK OF BANKS BEING HIT?

In order to strengthen solvency, during the summer and autumn some banks reinforced the core capital of some of their insurance companies with subordinated loans and capital contributions: SPP Liv issued two subordinated loans with no fixed maturity for a total of SEK 1.6 billion to SHB; Nya SEB Trygg Liv obtained a subordinated loan of SEK 230 million from SEB and increased its share capital by SEK 100 million (the motivation was the company's rapid expansion); and Nordea Livförsäkring I raised a subordinated loan of SEK 500 million from Nordea. The subordinated loans may be amortised and repaid only if there is a risk that the solvency margin will not be maintained.

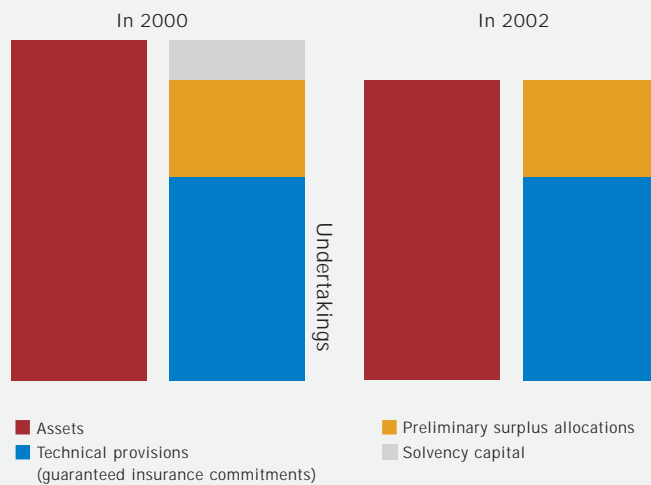
Considering that stock markets have remained weak after these contributions were made and the possibility of the "maximum discount rate" being lowered, the owners may be obliged to contribute additional funds. The future provision of capital and subordinated loans that the bank-owned life assurance companies might require if the "maximum discount rate" is lowered by half a percentage point is in the region of ten billion Swedish kronor. The contributions would be deducted in full from the core capital of the banks. It is considered that the need to contribute capital to the bank-owned life assurance companies is not of a magnitude that would affect the core capital of the banks to such an extent that it influences the level of credit granting.

WHAT IS THE EFFECT ON PENSIONS?

The capacity of life assurance companies to meet their commitments to policy-holders is expressed as the collective consolidation ratio. This ratio, which applies only to companies that implement mutual principles, measures the value of investments relative to the value of the company's commitments and is not directly related to solvency. Thus, a low collective consolidation ratio does not necessarily indicate low solvency. The commitments are the value of the company's guaranteed assurance undertakings plus the surplus funds that have been preliminarily assigned to policy-holders but not yet disbursed (preliminary surplus allocations). When the value of investments exceeds the value of commitments, the collective consolidation ratio is above 100 per cent and vice versa.

A collective consolidation ratio that is clearly below 100 per cent is not necessarily a major problem, except that policy-holders risk receiving lower returns than they had expected. The company can, for example, restore the level of the ratio by lowering its rate of return. It is also permissible to reallocate funds from the preliminary surplus allocations to the solvency capital, or to set a negative rate of return so as to reduce the stock of preliminary surplus allocations. These procedures can be seen as the company's reaction when its preliminary allocations over a considerable period turn out to exceed what a long-term trend allows. Regardless of the method employed, the outcome has been that life assurance companies have lowered their rates of return in the course of this year and may need to lower them still further, which leads to pensions that are lower than the prospects the company previously presented to customers.

Illustration of collective consolidation ratio



Note. Collective consolidation ratio = investments/undertakings.

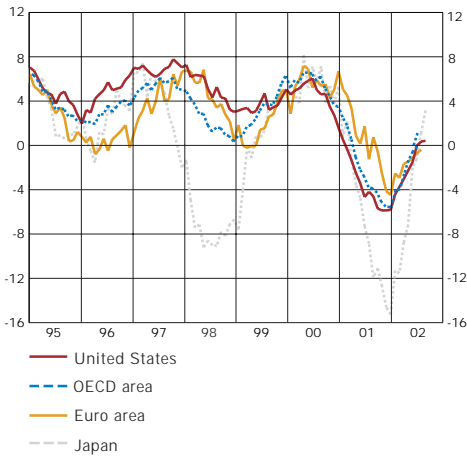
## IS THE STOCK MARKET AFFECTED?

The life assurance companies are major holders of shares and bonds. The unit linked companies invest almost all their capital in shares and in the other companies shares make up more than a third of their total assets. The proportion of shares rose gradually in the 1990s; this partly had to do with a change in the investment regulations but it was also motivated by the rising value of shares and their higher return. In that certain companies are at risk of falling below the statutory level of solvency, they have chosen to lessen the risk by reducing the proportion of shares in their portfolios. Although it has not been sizeable, the disposal of these shares when turnover has been low may have contributed to the stock market fall. This seems to have been more of a problem in Europe. The Insurance Companies Act requires that, in order to cover their liabilities, these companies invest an amount equivalent to TP in accordance with certain rules. One of these rules concerns the composition of this cover; the value of shareholdings, for example, is not to make up more than 25 per cent of the total cover. If the maximum discount rate is lowered, TP rises. Assets other than shares may then make up too small a proportion of the cover, which could make it necessary to sell shares. Today, however, most of the companies have sufficient holdings of other assets to meet the statutory cover.

Considering the global stock market developments, it would not be unreasonable if the companies were to adjust their internal investment rules in order to reduce risks. That may lead to a lower proportion of shares in future investments. The negative development may also weaken the propensity to save in life assurance. The result could be that less capital flows to stock markets than in the 1990s and early 2000s.

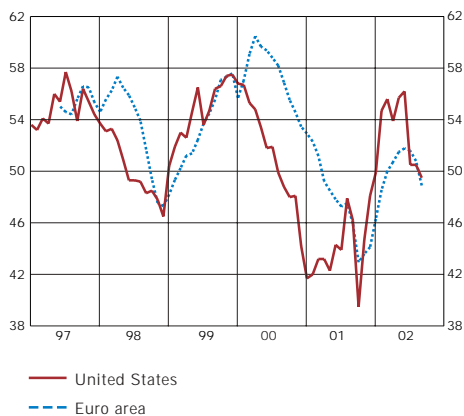
All in all, the solvency of the major life assurance companies is adequate, while some of the smaller companies may need capital contributions. To the extent that the major Swedish banks need to provide capital, this is not considered to constitute a threat to their capital cover or their credit supply. So the links with the real economy and price stability are limited. However, the deterioration of collective consolidation ratios has meant that a number of companies have lowered their rates of return and may need to lower them still further, leading to lower pensions.

Figure 10. OECD area manufacturing output.  
Percentage 12-month change



Sources: OECD, US Federal Reserve, Eurostat and Japanese Ministry of International Trade and Industry.

Figure 11. United States and euro area:  
purchasing managers index.  
Index



Sources: ISM and Reuters.

somewhat tighter on account of a rising real long-term interest rate and an appreciating exchange rate.

## External economic activity and inflation

### International economic activity has weakened.

The international economic situation has worsened, partly as a result of falling share prices and the security policy concern. The developments have dampened the expectations of households as well as firms, besides adding to the uncertainty about future demand. This means that the international recovery is judged to be weaker and more protracted than foreseen in the June Report. Moreover, the international recovery in manufacturing activity has entered a slower phase (Figs. 10 and 11). The falling stock markets and the slacker recovery in manufacturing have been accompanied by cost adjustments among American firms, for example in the form of personnel cuts. Together with high productivity and increased receipts, this has led to higher earnings. This type of adjustment has been less extensive in the euro area and Japan.

### A more subdued recovery in the United States.

The conditions for a favourable economic development in the years ahead vary. In the United States the prospects for gradually rising activity appear to be comparatively good. The combination of the expansionary economic policy and advantageous productivity growth points to a recovery. Moreover, the expected weakening of the dollar could promote a more balanced development of trade. However, the financial market turbulence has added to the uncertainty about future developments, which may tend to dampen consumption and investment propensities during the forecast period.

Although US stock markets have been falling for some time, the early Q3 growth of household consumption was rapid. An important explanation for this is that the major car firms have reintroduced no-interest financing of car purchases. But other components of consumption were surprisingly positive, too; this tendency should be seen in the light of a persistently strong increase in household disposable income, partly in connection with the expansionary fiscal policy. The favourable development has also had to do with the continued increase in house prices and low interest rates. In view of the financial unrest, however, in the near future it is judged that firms will remain focused on cost cutting and balance sheet consolidation. Employment is therefore expected to be weaker than assumed earlier, with some increase in unemployment in the coming quarters. A further gradual increase in household saving is foreseen, partly as a result of the negative wealth trend in recent years and the public sector's growing financial deficit. Moreover, the stimulus from the tax

cuts is expected to diminish by degrees. All this is judged to mean that for the greater part of the forecast period the growth of household consumption will be weaker.

The future development of investment is still highly uncertain. With the stock market fall and widening credit spreads, financing costs for market borrowing have risen for many firms. An increased aversion to risks may contribute to the postponement of investments. Moreover, expectations of earnings in the longer run have been revised successively downwards (see the box on pp. 32–36). On the other hand, the corporate sector investment ratio is below the historical trend, while corporate earnings and cash flows have improved since the end of last year, partly because productivity growth has remained favourable and unit labour costs have fallen (Figs. 12 and 13). Moreover, most firms are still in a position to borrow at persistently low market rates. The low ratio of stocks to sales also points to a continued increase in output (Fig. 14). Against this background, it is foreseen that corporate investment will go on recovering gradually. On account of the financial unrest, however, the tendency is now expected to be weaker than envisaged earlier.

All in all, the financial turbulence makes growth prospects even more uncertain and it is foreseen that the recovery in the United States will be more protracted than was assumed in the June Report.

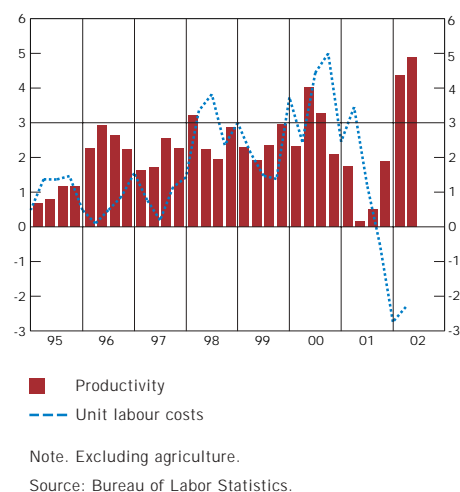
**The euro area: export-led recovery and domestic problems.**

Developments in the euro area in the first half of this year were weaker than foreseen in the June Report. Growth has been dampened by slack investment activity in particular, while stock-building and net exports have been more favourable. Here, too, the financial turbulence is expected to dampen consumption and investment propensities in the forecast period and as the domestic conditions for growth are judged to be worse than in the United States, a recovery in the euro area is expected to come above all from stronger global activity.

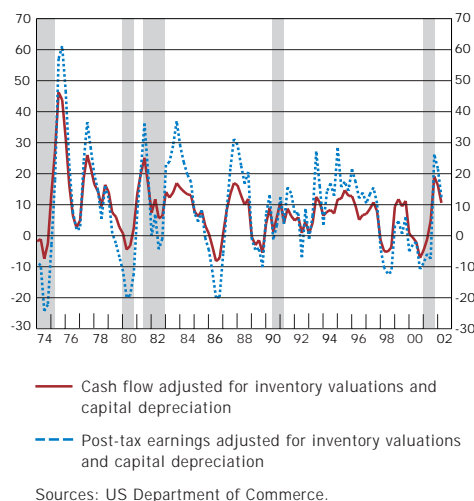
Employment in the euro area has developed relatively favourably during the economic slowdown, while productivity has remained weak. Difficulties in disposing of labour when demand worsens may have led to firms having more personnel than they need when activity is low. Falling productivity and rising unit labour costs point to this. The number employed has gone on rising mainly in the services sector, while employment in manufacturing has slowed. This could also be an indication that resources in the services sector are more strained than in the total economy, a notion that is supported by the fact that price increases for various services have been relatively extensive in recent years.

Budgets in a number of countries in the euro area are strained in that deficits that were already large have been exacerbated by the cyclical slowdown, earlier tax cuts and this summer's disastrous floods, which will burden the German and Austrian budgets in particular. For these countries the future scope for stimulatory

**Figure 12. United States corporate sector: productivity and unit labour costs. Percentage 12-month change**



**Figure 13. United States corporate sector earnings. Percentage 12-month change**



**Figure 14. United States corporate sector stocks ratio. Stocks/sales**

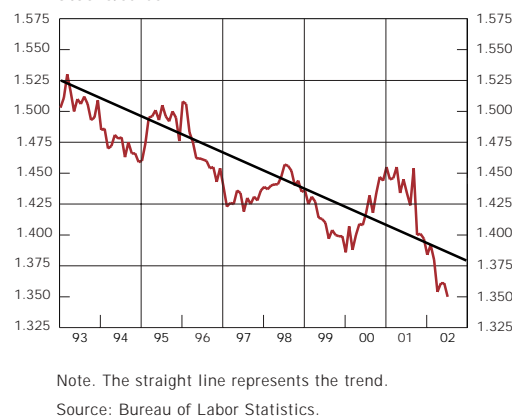
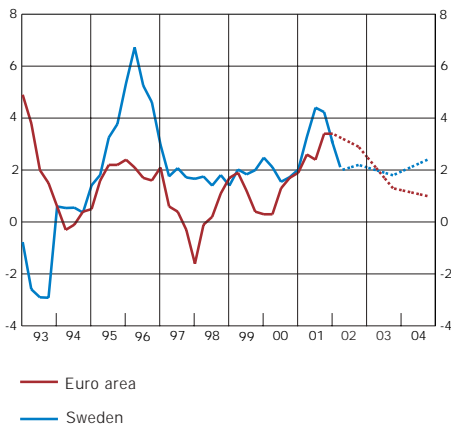
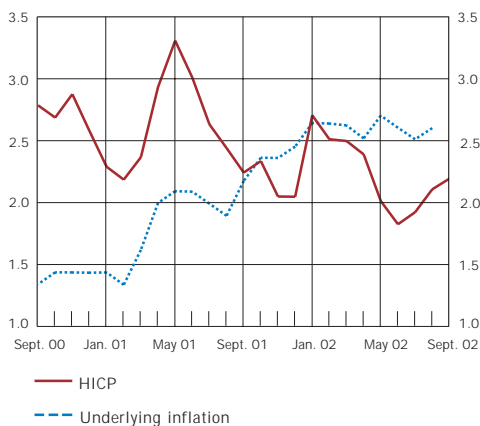


Figure 15. Euro area and Sweden: unit labour costs.  
Percentage 12-month change



Note. The broken lines are forecasts by the Riksbank.  
Sources: ECB and Statistics Sweden.

Figure 16. Euro area inflation.  
Percentage 12-month rate



Source: Eurostat.

fiscal policies is therefore limited by the commitments in the Stability and Growth Pact. Upholding the Pact no doubt requires that fiscal policy is more restrictive in the next few years.

It is considered, as before, that the main contribution to a recovery in the euro area lies in an improvement in global activity. The poorer international economic prospects are therefore expected to result in growth being lower than was foreseen in the June Report. The rate of inflation in the euro area has been broadly as expected in recent months. A more subdued outlook for demand and lower unit labour costs point to somewhat lower future inflation (Figs. 15 and 16). Another indication of this is that effects of earlier transitory price increases will gradually disappear.

### The Nordic area and the United Kingdom: domestic demand is driving.

In connection with the international tendency, manufacturing activity has also become somewhat slacker in the United Kingdom and the Nordic area. Unlike the case in the euro area, however, consumption has remained strong in the United Kingdom, which has to do with an expansionary economic policy, rising house prices and a favourable labour market development. In general, consumption in the Nordic countries has also continued to be stronger than in the euro area. During the forecast period it is judged that domestic demand will go on driving growth in these countries, which for Swedish exports makes up to some extent for the relatively moderate demand in the euro area.

### Japan: stabilisation without domestic driving forces.

To date this year the Japanese economy has shown slight signs of stabilising after four quarters of falling GDP. Last autumn's weakening of the yen helped to strengthen net exports in the first half of 2002. The yen's appreciation this spring and somewhat poorer international economic prospects point, however, to a smaller contribution from the external sector in the near future. But as international activity becomes stronger, net exports and manufacturing activity should improve. Moreover, the marked adjustment of stocks in recent years has created conditions for increased output. However, continued financial unrest, falling prices, the outstanding need for structural changes and the strained public finances suggest that domestic demand will remain weak in the coming years.

Developments elsewhere in Asia in the first half-year were stronger than expected, as a result of increased exports and domestic demand. A growing proportion of foreign trade occurs inside the region. In Southeast Asia the rapid export growth this year now seems to have slowed. However, demand for Asian IT products is judged to go on expanding and domestic demand in a number of countries to remain favourable as a result of an expansionary economic policy. Developments in Brazil are mar-

ked by the continued concern about the government finances. Growth is judged to be weak throughout Latin America, with a negative tendency in certain countries.

---

### Moderate export market growth and weak international price pressure.

---

After falling appreciably last autumn, world trade has been rising this year. A crucial factor behind the upturn is the conditions for increased production and trade that have been created by the rapid swing in stocks, above all in the United States. All in all, however, the poorer international economic prospects are expected to contribute to world market growth in the forecast period being somewhat lower than calculated earlier. International export prices for manufactured products are also judged to rise more slowly than envisaged earlier (Table 5).

With the political unrest and a lower supply than expected, oil prices have risen markedly since the time of the June Report. The lower supply has to do with OPEC's reduced supply early this year and decreased exports from Iraq. At the same time, demand for oil has been maintained, for example through high demand for petrol in the United States. The oil price is expected to go on rising in the rest of this year, followed by a fall as a consequence of increased production in non-OPEC countries. Prices for other commodities have also tended to rise from low levels since the time of the June Report and are assumed to show a continued moderate increase during the forecast period.

**Table 5. International conditions.**  
Percentage annual change or annual level

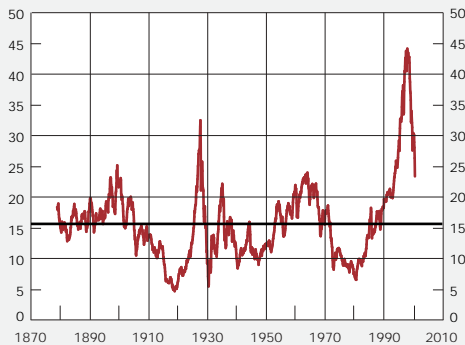
	GDP					CPI				
	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
United States	3.8	0.3 (1.2)	2.5 (2.4)	2.9 (3.4)	3.5 (3.5)	3.4	2.8 (2.8)	1.5 (1.6)	2.0 (2.2)	2.1 (2.3)
Japan	2.2	-0.3 (-0.4)	-0.7 (-1.3)	1.2 (0.8)	1.7 (1.4)	-0.7	-0.7 (-0.7)	-1.0 (-1.0)	-0.5 (-0.5)	0.5 (0.5)
Germany	2.9	0.6 (0.6)	0.5 (0.8)	1.9 (2.2)	2.0 (2.0)	2.1	2.4 (2.4)	1.5 (1.5)	1.4 (1.4)	1.6 (1.6)
France	4.2	1.8 (1.8)	1.4 (1.6)	2.4 (2.5)	2.2 (2.2)	1.8	1.8 (1.8)	1.7 (1.7)	1.6 (1.6)	1.6 (1.6)
United Kingdom	3.1	2.0 (2.2)	1.7 (1.9)	2.5 (2.5)	2.6 (2.6)	2.1	2.1 (2.1)	2.1 (2.3)	2.3 (2.4)	2.4 (2.4)
Italy	2.9	1.8 (1.8)	0.7 (1.3)	2.3 (2.5)	2.6 (2.6)	2.6	2.3 (2.3)	2.4 (2.1)	2.0 (2.0)	2.0 (2.0)
Denmark	3.0	1.0 (0.9)	1.6 (1.6)	2.2 (2.2)	2.2 (2.2)	2.7	2.3 (2.3)	2.3 (2.1)	2.2 (2.1)	2.2 (2.2)
Finland	6.1	0.7 (0.7)	1.6 (1.5)	3.1 (2.8)	3.3 (3.1)	3.0	2.7 (2.7)	2.2 (2.0)	2.0 (2.0)	2.0 (2.1)
Norway	1.9	1.3 (1.0)	1.5 (2.0)	1.7 (2.2)	2.7 (2.0)	3.1	3.0 (3.0)	1.2 (1.6)	2.1 (2.5)	2.5 (2.5)
<b>Euro 12</b>	3.5	1.5 (1.5)	1.0 (1.4)	2.3 (2.6)	2.5 (2.5)	2.3	2.5 (2.5)	2.2 (2.0)	1.8 (1.8)	1.9 (1.9)
<b>Sweden's TCW</b>	3.3	1.2 (1.4)	1.3 (1.5)	2.3 (2.5)	2.6 (2.5)	2.3	2.3 (2.3)	1.8 (1.8)	1.8 (1.9)	2.0 (2.0)
<b>export markets</b>										
<b>OECD 19</b>	3.5	0.8 (1.2)	1.5 (1.4)	2.4 (2.6)	2.8 (2.7)	2.2	2.0 (2.0)	1.4 (1.4)	1.6 (1.7)	1.8 (1.9)
			2000	2001	2002	2003	2004			
Market growth for Swedish exports			10.8	1.0 (1.2)	2.2 (2.5)	7.4 (7.9)	7.2 (7.5)			
OECD area export price in national currency			1.2	0.4 (0.4)	-0.4 (-0.3)	1.1 (1.5)	1.3 (1.4)			
Crude oil price (USD/barrel. Brent Blend)			28.4	24.5 (24.5)	25.5 (23.8)	24.9 (23.5)	22.5 (22.0)			

Note. In the United Kingdom CPI stands for RPIX and in Germany, France, Italy, Denmark and Finland for HICP. In Norway GDP refers to the mainland economy. The figures in parentheses are the assessments in the June Report. Market growth for Swedish exports is measured in terms of imports of goods to all countries that are recipients of Swedish exports, weighted with each country's share of Swedish exports of goods 2000–01.

Source: The Riksbank.

## STOCK MARKETS IN THE UNITED STATES

Figure B9. Actual P/E ratios in real terms for the S&P 500 index.



Source: John Y. Campbell and Robert J. Shiller.<sup>5</sup>

Stock market developments are important for an economic recovery in the United States because they influence households and firms. A historical account of US stock markets is presented below, followed by a discussion of the development of some of the fundamental determinants of share prices.

---

**Stock markets have adjusted to valuations that are historically more reasonable.**

---

The fundamental value of a share or a share index is determined by the expected real earnings discounted by a required return that relates to the risk-free real interest rate and a risk premium. Higher real future earnings or lower required returns motivate higher real share prices. An accepted way of forming an opinion about the value of a share or a share index is to relate the price to the earnings, that is, the price/earnings (P/E) ratio. This form of valuation envisages that in the long run it is reasonable to suppose that share prices rise with the growth of earnings.<sup>3</sup>

P/E ratios for the S&P 500 index ever since 1881 are presented in Fig. B9.<sup>4</sup> On average, the US stock market has been valued at 16 times actual earnings but there have been both short and long periods when it has been valued considerably under or over the historical average. There were, for example, wide fluctuations in connection with the world wars and the Wall Street crash in the 1930s.

Simplifying somewhat, the stock market's path since the 1960s can be divided into three periods. The economic climate in the 1960s was characterised by low inflation and low interest rates. The growth of dividends, which in the longer run is a measure of earnings growth, was then in line with the historical trend, that is, about 2 per cent in real terms (Table B1). From the beginning of the 1970s to the early 1980s there

- 3 See e.g. Fama, E.F. and French, K. (2001), The equity premium. *Working paper 522*, Centre for Research in Security Prices, University of Chicago.
- 4 The P/E ratio is a key figure that relates the market value of a company to its actual or expected earnings. For S&P 500 the P/E ratios since 1881 average about 16. For the sake of comparisons over business cycles, the ratio is calculated using the average earnings over the past decade.
- 5 Campbell, J.Y. and Shiller, R.J. (2001), Valuation Ratios and the Long-Run Stock Market Outlook: An Update, *Working Paper 8221*, National Bureau of Economic Research.



was economic instability with oil price shocks and high inflation. Real earnings rose more than 3 per cent in that period but the stock market was valued at less than its average level, probably on account of the prevailing uncertainty. After 1982 a period began with a focus on increased economic and security policy stability, manifested in the successive reorientation of monetary policy onto price stability and the end of the cold war between the United States and what was then the Soviet Union. This was reflected in rapidly rising stock markets as a result of falling real interest rates, smaller risk premiums and a solid growth of earnings and dividends.

Table B2. Historical averages for inflation, dividend growth and earnings growth.

	Inflation	Return		Dividend growth	Earnings growth
		Real short interest rate			
1872-80	-2.77	9.86		4.62	NA
1881-90	-1.72	7.23		0.69	NA
1891-1900	0.18	5.08		4.49	NA
1901-10	1.95	3.18		3.25	NA
1911-20	6.82	0.82		-3.43	NA
1921-30	-1.70	7.41		9.07	NA
1931-40	-1.23	2.80		0.36	NA
1941-50	6.04	-4.57		3.02	NA
1951-60	1.79	1.05		1.22	0.61
1961-70	2.94	2.27		1.98	2.07
1971-80	8.11	-0.30		-0.86	3.47
1981-90	4.51	5.32		2.32	0.37
1991-200	2.68	2.61		0.58	7.58

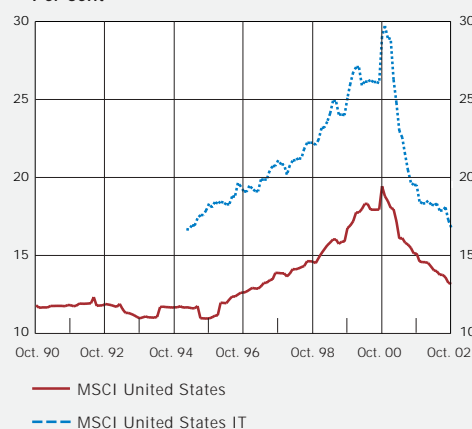
Source: Fama and French (see note 1).

In the late 1990s, however, share prices were driven upwards to historically high P/E ratios, partly due to expectations that the new information technology would lead to rapid rising productivity and earnings (see Fig. B10). Earnings growth three to five years ahead for the IT sector, for example, was predicted to average up to 30 per cent a year.

Since the US stock market high in the spring of 2000, share prices and P/E ratios have undergone a successive downward correction on account of the historically high valuations, last year's economic recession and falling earnings and earnings expectations. The P/E ratio is currently 17.8.

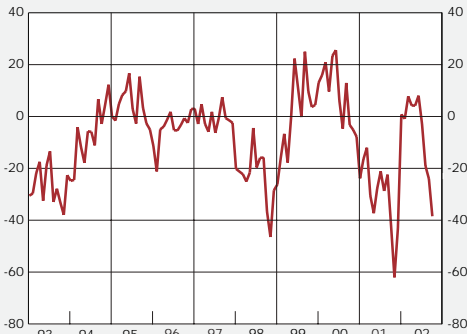
The cyclical upturn and the recovery of US corporate earnings that was noted in the first half of this year have not yet sufficed to stabilise the US stock markets. An important explanation for this is the accounting malpractice, for example by the WorldCom

Figure B10. Expected earnings 3 to 5 years ahead for MSCI and the IT sector. Per cent



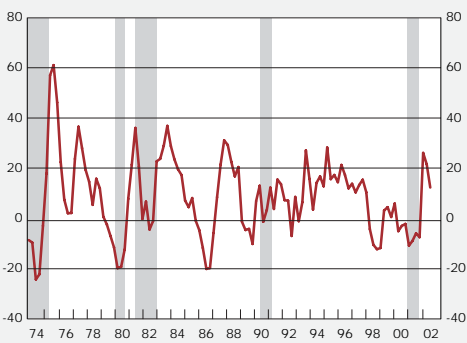
Source: Datastream/Thomson Financial.

Figure B11. Earnings indicator for S&P 500. Per cent up-graded net of down-graded expectations of earnings 12 months ahead; monthly data<sup>6</sup>



Sources: Datastream/Thomson Financial and the Riksbank.

Figure B12. Post-tax earnings in the US corporate sector. Annual percentage change



— Post-tax earnings adjusted for inventory valuations and capital depreciation.

Source: US Department of Commerce.

telecom corporation, that has been disclosed and contributed to rising risk premiums on the stock market this summer.

Since the summer, moreover, stock markets have been affected by increased uncertainty about the timing of the recovery as well as by the risk of an escalating conflict between the United States and Iraq and its presumed real economic consequences. An indication of this is the successive downward revision of analysts' short-run earnings expectations (Fig B11).

Turning now to the present conditions in the stock market, it can be said that a stabilisation is dependent on an improvement in the prospects of increased corporate earnings and some reduction of risk premiums.

### Good productivity paves the way to rising earnings.

Since the end of last year the US corporate sector's productivity and earnings have turned upwards again (Fig. B12). To date, the improvement in earnings has been achieved mainly by cutting costs and rationalising, not through growth. The focus on costs has meant that, for example, real labour costs (which make up about 65 per cent of total corporate sector costs) have risen more slowly than productivity, in keeping with the earlier cyclical pattern.

In the US corporate sector's production of goods, earnings are more depressed, partly due to persistently low capacity utilisation and falling producer prices. However, productivity growth has been favourable even in manufacturing and contributed to a reduction of unit labour costs. Moreover, rapid stock adjustments have created conditions for a further gradual recovery in manufacturing activity. One sign of such a recovery is that capacity utilisation here has begun to move up and producer prices have stopped falling.

All in all, it can be noted that earnings and cash flows relative to corporate sector turnover or gross output have improved since the beginning of last year.

6 Note that on average the analysts have revised their earnings expectations upwards more often than downwards, that is, they seem to have a tendency to overestimate earnings.

---

**Countermeasures against accounting malpractice lead in time to lower risk premiums.**

---

In an attempt to restore confidence in US listed companies, supervision has been tightened and sanctions introduced; as of 14 August, for example, the heads of the largest US corporations are required to testify to the accuracy of their accounts.<sup>7</sup> When no further essential problems with corporate accounts emerged after that date, there was a temporary fall in risk premiums, measured as implicit volatility (Fig. 4 on p. 19). Some earlier losses of confidence in the financial markets were rectified relatively quickly once the appropriate measures had been taken. One example is the financial crisis in 1998, when confidence was restored with a combination of vigorous monetary policy measures and the authorities' stronger internal requirements and recommendations for improved transparency and risk management routines. Together with a gradual economic improvement, this suggests that in time there will be some reduction of risk premiums.

---

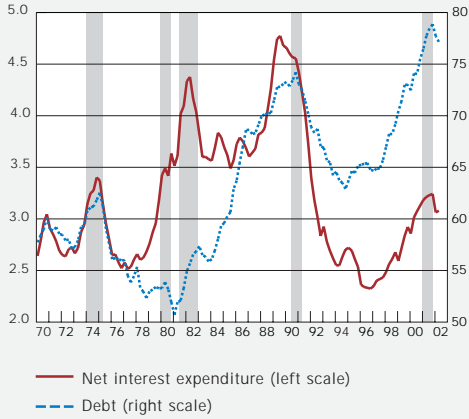
**To sum up, conditions for a stock market stabilisation are considered to exist. Debt burdens and security policy concerns are clear elements of uncertainty.**

---

The conditions for a stock market stabilisation and a return towards an average long-term return are judged to be basically favourable. Strong productivity growth, low interest rates and a cyclical economic improvement provide a foundation for the recovery of earnings to continue. Moreover, the measures that have been taken to restore confidence in US corporate accounting should contribute in time to somewhat lower risk premiums. As economic activity strengthens, a general reduction of risk premiums on corporate credits is also foreseen.

7 SEC, the US financial supervisory authority, examines the accounts of the 950 largest corporations. President Bush has called for stricter rules and requirements for corporate accounting, for example through his support for the 2002 Sarbanes-Oxley Act. Moreover, the credit rating institution S&P has produced a new measure, core earnings, with a view to establishing a distinct measurement of the underlying earning potential of the companies included in the S&P 500 index and permit comparisons over time as well as between companies. This earnings measure differs from others in that, for example, it treats staff options as well as R&D procurements as expenditures and pension programmes as a cost, and includes restructuring costs, besides using new rules for writing off good will. The ten corporations that are affected most negatively when core earnings are calculated instead of traditional earnings indicators include eight IT-telecom companies, among which are Cisco, Motorola and IBM, which may imply that opaque and doctored accounts are confined to this sector.

Figure B13. Net interest expenditure and debt in the US corporate sector. Per cent of corporate sector gross product



Source: US Department of Commerce.

However, there are still clear risks of a weaker stock market trend. One stock market risk is considered to lie in the historically high levels of outstanding corporate debt relative to corporate sector gross output. The borrowing rate has admittedly slowed in the past year and falling interest rates have helped to lessen net interest expenditure since the turn of last year (Fig. B13). For companies with lower credit ratings that have faced rising interest rates, a more protracted economic recovery may mean that credit risk premiums remain for longer. Together with a weaker development of production, that could lead to an increased payments burden and in time to certain financing difficulties.

Besides this, there is the risk that security policy concerns and a conceivable military conflict have consequences for real economic developments and lead to persistently high risk aversion in the financial markets and subdued stock markets for some further time to come. History shows, moreover, that stock markets may have low valuations for longer periods.

## Demand and supply

The weak situation in financial markets has tended to dampen economic activity in Sweden, as is evident from, for example, lower expectations of the economic future and downward movements in business tendency data. This has been countered, however, by what is probably a temporary increase in the growth of public consumption and higher public investment growth. A positive contribution to GDP growth has also come from exports of goods. To date this year household consumption has risen somewhat more than a year earlier, partly as a result of lower interest rates, higher incomes, higher real estate prices and lower unemployment than expected. The combination of all these factors meant that economic growth in the first half of 2002 was higher than expected.

The main scenario assumes that the financial markets stabilise during the forecast period. This is judged to provide a foundation for a cautious recovery of economic activity abroad, which stimulates Swedish exports. At the same time, this stabilisation contributes to increased consumption and investment in Sweden. Fiscal policy, however, is judged to be tighter in the coming years and local tax increases are also expected to have a negative effect on household income and thereby consumption. At the same time, the requirement that local government budget deficits are eliminated is assumed to dampen public consumption. All this means that growth is expected to be lower than was foreseen in the June Report. GDP growth is assumed to be 1.7 per cent this year, followed by 2.3 and 2.1 per cent, respectively, in 2003 and 2004. The assumed slowing of growth towards the end of the forecast period has to do with, for example, a diminishing contribution from net exports as the krona appreciates, as well as from a smaller contribution from stockbuilding.

Besides affecting household consumption, the fiscal tightening and local tax increases that are foreseen in the coming years are judged to have an impact on the economy's supply side. The main scenario assumes that, apart from the impact of lower demand, investment will not be affected by the fiscal measures in central and local government. But these measures are expected to influence the labour market; increased taxes may lead to a lower labour supply, which in turn may affect wage formation.

The labour market will continue to be relatively tight, leading for instance to the prospect of annual wage increases averaging 4 per cent in the coming years. Productivity growth to date this year has been comparatively strong. This implies a lower increase in unit labour costs in the short run, which dampens domestic inflation. When economic activity becomes stronger in the somewhat longer run, productivity growth is assumed to slacken.

Figure 17. Volume exports and imports of goods.



Sources: Statistics Sweden and the Riksbank.

Table 6. Demand and supply.  
Percentage annual volume change

	2001	2002	2003	2004
Household consumption	0.2	1.5 (2.3)	2.0 (2.4)	2.0 (2.4)
Public authorities consumption	1.4	1.6 (0.9)	0.4 (0.7)	0.7 (1.0)
Gross fixed capital formation	1.5	-1.9 (0.7)	3.7 (4.3)	5.0 (6.0)
Stockbuilding	-0.5	-0.5 (-0.1)	0.3 (0.2)	0.1 (0.0)
Exports	-1.4	1.2 (2.2)	5.0 (5.6)	4.8 (5.3)
Imports	-3.9	-1.8 (2.0)	5.1 (5.5)	5.6 (5.8)
GDP at market values	1.2	1.7 (1.6)	2.3 (2.7)	2.1 (2.5)

Note. The figures in parentheses are the assessments in the June Report.

Source: The Riksbank.

### The recovery in manufacturing ceased during the summer.

After rising last spring, manufacturing activity seems to have slowed during the summer, though the picture differs between industries. Demand has improved for the forest and steel industries, as well as for vehicles and machinery, but the situation for telecom products has continued to worsen. Construction activity is low. In the services sector, the upswing for the car trade and retailing has continued but in other segments of this sector the picture is more varied and in certain cases gloomy.

### Higher growth next year for foreign trade.

Exports of goods and services rose 1.4 per cent in the first half of this year, while imports fell 2.7 per cent. The outcomes suggest that the annual GDP contribution from foreign trade will be larger than foreseen in the June Report. The unexpectedly large import drop may be partly due to the composition of imports: production has fallen for industries, for example telecom, that have a large import requirement for intermediate goods, while industries that mainly rely on domestic supplies of input goods, for example pulp and wood production, have expanded. It may also have been possible to substitute domestic products for imported goods to a greater extent than expected.

The foreign trade statistics show that export growth for goods slackened during the summer (Fig. 17). The signs of a recovery for exports are therefore less clear than they were in the spring. Business tendency data also show that export demand for Swedish products was weak on the whole in the summer.

World market growth is judged to be somewhat weaker than forecast in the June Report. Together with ongoing problems in the telecom industry, this is judged to result in lower growth for exports of goods.

Apart from an adjustment for the outcome for imports of services in the first half of this year, the present assessment of volume imports differs relatively little from the June Report (Table 6). All in all, the GDP contribution from foreign trade

is judged to fall successively, from about 1 percentage point this year to a neutral effect in 2004. However, a substantial current-account surplus is foreseen throughout the forecast period.

#### Lower increase in household disposable income.

This year's public sector financial surplus is expected to be smaller than in 2001. The explanation lies in tax cuts as well as increased spending.

The deterioration in the public finances makes it more difficult to meet the target for the public sector's financial surplus and also means that central government spending is liable to exceed the ceiling. The present assessment assumes that the spending ceiling will be met. While there is a possibility of shifting expenditures between years, it does look as though additional economies are unavoidable. Here it is assumed that the cuts mainly affect the household sector, so that real disposable income rises more slowly in 2003 and 2004 than was assumed in the June Report. The assumption of higher local government taxes also contributes to the lower growth of household disposable income. The "green" tax shift that has been announced in the Budget Bill (see the section Deregulations, political decisions and transitory effects on p. 57) is assumed to result in lower income tax for households because the basic deduction is to be increased but the effect of this on real disposable income is countered by the increases in various energy taxes.

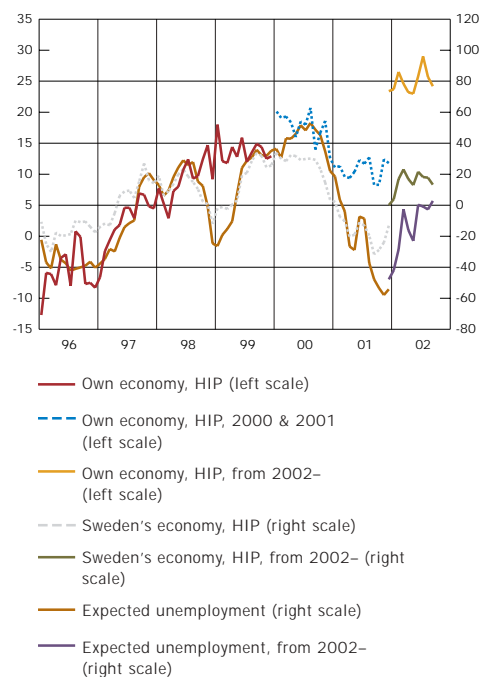
#### Consumption rises more slowly throughout the forecast period.

Households' spending on consumption is determined mainly by disposable income, net wealth (real estate and financial wealth) and their expectations not only of their own economy but also of macroeconomic developments in general (Fig. 18).

The June Report's forecast growth of real disposable income this year has been revised upwards by about half a percentage point. For 2003 and 2004 the annual forecasts have been revised downwards by just over 1 percentage point, mainly on account of the tightening of fiscal policy. Moreover, total real and financial net wealth has decreased since the time of the June Report. Share prices have fallen and this has not been fully offset by the unexpectedly rapid increase in real estate prices. All in all, a development of income and wealth that is weaker than was foreseen in the June Report is judged to result in a lower growth of consumption throughout the forecast period.

The income and consumption forecasts imply that household saving rises during the forecast period. The saving ratio rose sharply in the early 1990s, to a substantial extent as an adjustment after a series of years of negative saving, a marked accumulation

Figure 18. Households' expectations of their own economy, Sweden's economy and unemployment.  
Net balance



Note. The levels of households' purchasing plans (HIP) are difficult to interpret because the survey's procedures were changed as of January 2000 and again as of January 2002.

Sources: National Institute of Economic Research and Statistics Sweden.

Figure 19. Household saving and post-tax interest expenditure.  
Per cent of disposable income



Note. The saving ratio shown here is based on an earlier definition. Riksbank forecast 2002-2004.

Sources: Statistics Sweden and the Riksbank.

of debt and a sharp increase in financing costs. Other factors that stimulated saving were falling prices for shares and real estate, the bank crisis, high real interest rates and poor future prospects. The situation of households and their expectations are generally much more stable today. Households' liabilities have admittedly grown comparatively rapidly in recent years but lower market rates of interest have kept the interest burden down (Fig. 19).



## THE HOUSE MARKET

With the weak stock markets in the past two years, the value of Swedish households' financial wealth has fallen relatively markedly. However, the largest item in households' total wealth consists of owner-occupied houses and while stock-markets have fallen, house prices have gone on rising in both real and nominal terms.

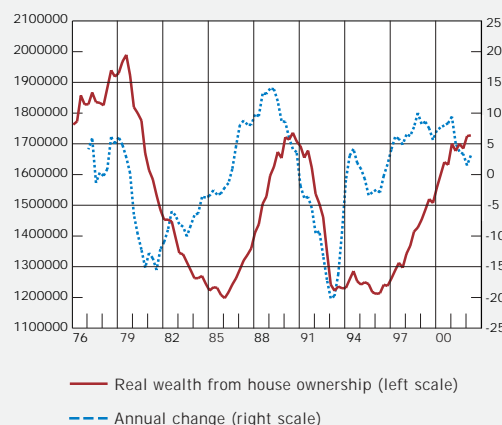
If house prices were to fall, private consumption might be affected. It is therefore important to judge whether house prices mirror fundamental factors in supply and demand or whether, as was the case in the early 1990s, they contain sizeable expectations of future price increases. Research has frequently shown that for various reasons real estate prices tend to display a cyclical pattern where an increase over several years is often followed by a longer period of falling prices.<sup>8</sup> A scrutiny of underlying supply and demand factors suggests, however, that the valuation of Swedish houses is comparatively reasonable.

### HOUSE PRICES SINCE 1950

In the period 1950–70 Swedish house prices rose at an annual rate of around 2 per cent in real terms. After that there seems to have been a structural break. The pattern since the mid 1970s has been more volatile, with a lower rate of increase than in the two previous decades (Fig. B14). In the period since 1976, the real level of house prices has hardly changed. In the period since the low in 1996, however, the real price has risen at an average annual rate of 7 per cent. The development of house prices in Sweden differs from that in, for example, the United States and the United Kingdom, where the trend for real house prices in recent decades has been upward. In these two countries the increase has also been particularly rapid in recent years and in the United Kingdom there is a debate as to whether the house market there is overvalued. It should be noted, however, that the house markets in these three countries differ in many respects, particularly as regards the rules for taxes and subsidies, and this complicates direct comparisons.

The real housing wealth of households is still a fairly long way below the record levels in the 1970s but is

Figure B14. Real wealth from house ownership and its annual change.  
SEK million and per cent

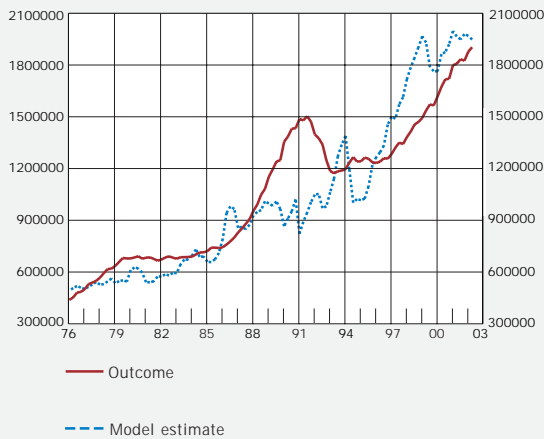


Note. Wealth from house ownership calculated by the Riksbank using data from Statistics Sweden.

Sources: Lantmäteriet, Statistics Sweden and the Riksbank.

8 See, for example, Hort, K. (2000), *Prisbildningen på hem i Sverige* (House price formation in Sweden), in Lindh, T. (ed.), *Prisbildning och värdering av fastigheter. Var står svensk forskning inför 2000-talet? En antologi om svensk bostadsekonomisk forskning* (Price formation and valuation of real estate. An anthology of Swedish research on housing economics), IBUF, Uppsala University, and Björklund, K. and Söderberg, B. (2000), *Cyklar och bubblor på fastighetsmarknaden* (Real estate market cycles and bubbles), *ibid.*

Figure B15. Wealth from house ownership: outcome from Statistics Sweden's data and estimated trend.



Note. Wealth from house ownership calculated by the Riksbank using data from Statistics Sweden.

Sources: Statistics Sweden and the Riksbank.

currently more or less on a par with the early 1990s (Fig. B14). It should, however, be mentioned that the regional differences are relatively large.

#### AN ANALYSIS OF HOUSE PRICES

Short-run deviations from what fundamental factors indicate is the market's *long-term* equilibrium can occur as a result of cyclical elements in price formation and other rigidities in both demand and supply. Compared with other markets for goods, the supply of houses takes a relatively long time to adapt to changes in demand because in the short run it is limited to the existing stock of houses. The time it takes to plan and complete houses means that shifts in demand lead initially to price movements that are greater than would have been the case with a more flexible supply. In the longer run, however, such factors as increased production when housing demand has risen lead to an adjustment of the stock of houses that counters the initial price movement.

One way of arriving at a rough assessment of how reasonable house valuations are is to use a statistical regression analysis. A simple relationship for the long-term trend has been estimated where the house price index is a function of the general price level, household incomes, interest rates, the marginal tax rate for interest expenditure deductions and the change in the share price index.

Fig. B15 shows the calculated trend for house-ownership wealth and the actual path according to Statistics Sweden's price index. The results of the estimation indicate that the rapid price rise around 1990 represented a marked deviation from the price that was motivated by the explanatory variables; also that at present house prices are relatively close to the long-term trend (Fig. B15).

#### THE HOUSE MARKET TODAY

Today's house market differs in substantial respects from the situation from the late 1980s up to the crisis in 1992. Important factors in such a comparison are, first, the development of income and employment. House prices could be subdued, for example, by decreased disposable income and widespread unemployment. In 1992–93, for instance, GDP in Sweden fell around 3.6 per cent. Today, the Swedish economy is judged to be at the beginning of an upswing. Moreover, according to the HIP survey of household purchasing plans from the National Institute of Economic Research, households'

assessments of their own economy one year ahead indicate expectations of a positive development of disposable income in this period and that, all else equal, should help to keep house prices up (Fig. B18).

Turning to the supply side, the years immediately before the real estate crisis in the early 1990s were characterised by an extensive production of housing that generated a surplus supply. Since then, neither house starts nor completions have returned to the levels in the early 1990s even though prices have risen and demand is strong, for instance in the Stockholm region. This probably has to do with the fact that unit production costs for new houses (as well as for apartment buildings) have also risen continuously in recent years, accompanied by a shortage of available land.

Debt ratios should also be taken into account in this context, particularly with reference to how well households would be able to cope with a property price fall if that were to occur. Household debt has admittedly grown in recent years but the increase in the borrowing rate has slackened recently (Fig. B16). The ratio of debt to gross wealth is considerably below the highs at the time of the financial deregulation in 1985 and the crisis years in the 1990s (Fig. B17).

Real interest rates also need to be considered when assessing the development of house prices. In the early 1990s these rates rose sharply and this, together with structural changes, contributed to the steep drop in house prices during the years of the crisis. Today, inflation is low and stable, real interest rates are considerably lower and the level of households' post-tax interest expenditure is also low, particularly compared with the crisis years (Fig. 17). It should be noted, however, that for many borrowers, a large proportion of the interest on their loans is variable, particularly when combined with large liabilities, this increases the sensitivity to changes in interest rates. However, households can counter this to some extent by tying their loans at today's relatively low rates, which a somewhat increased proportion of households recently appear to have done (Fig. B18). In the longer run, however, a higher level of interest rates would have an effect, though it is considered that households are in a position to cope with higher interest expenditure than at present (cf. *Financial Stability Report 2002:1*, Sveriges Riksbank).

Finally, it should be mentioned that the development of house prices differs considerably between regions. In recent years house prices have increased most in the metropolitan regions and particularly in the Stockholm

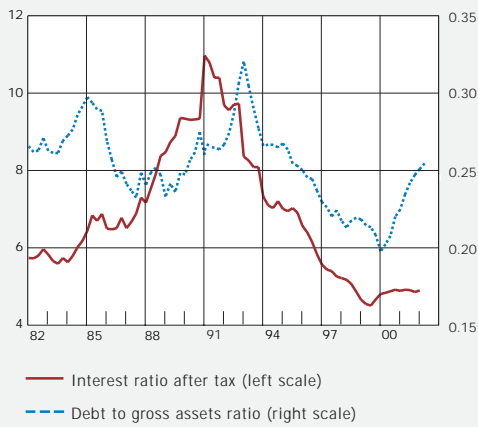
Figure B16. Lending to households.  
Percentage 12-month change



Note. Total lending before 2002, then lending by banks and house mortgage institutes.

Source: The Riksbank.

Figure B17. Household debt ratio and post-tax interest expenditure ratio.



Note. Riksbank calculations for the value of real estate in gross assets, using data from Statistics Sweden.  
Sources: Statistics Sweden and the Riksbank.

Figure B18. Households' loan stock broken down by interest terms and expectations of their own economy. Per cent



Note. Expectations are represented by the percentage expecting an improvement in their own economy in the year ahead less the percentage expecting the opposite, based on the survey of household purchasing plans (HIP).  
Sources: National Institute of Economic Research, Statistics Sweden and the Riksbank.

region. Prices have admittedly risen in most other regions, too, but the picture is very different from the early 1990s, when house prices rose very strongly almost everywhere in Sweden.

SUMMARY AND CONCLUSIONS

In real terms, the average level of house prices has hardly changed since the mid 1970s. In the early 1990s the strong price rise that had begun in the 1980s was followed by a real estate crisis and a dramatic price fall. Since 1996 the national level of house prices has risen at a real annual rate of about 7 per cent. The price increases in recent years have helped to counter the impact of falling share prices on household consumption. All else equal, a house price fall would thereby tend to subdue consumption. However, simple estimations, based on, for example, interest rates, disposable income and share prices, suggest that today's house valuations are more reasonable than was the case in the early 1990s. Such factors as the size of the existing stock of houses, new construction and the real economic prospects in the main scenario also point to the real estate market being relatively stable in the future. However, the possibility of house prices being negatively affected by the financial unrest cannot be ruled out.

### A weaker future tendency for public consumption.

Public consumption rose as much as 2.1 per cent in the first half of this year, which calls for an upward revision of the annual increase. In the years ahead it is assumed that the increase in public consumption will be only gradual. The weakening of the central government finances in the coming years means, among other things, that spending on consumption in this sector will be under pressure.

The municipalities are under pressure from increased demand for their services at the same time as a growing number of municipal employees are reaching retirement, which may lead to future difficulties with recruitment. Labour shortages are judged to lead to wage increases in the local government sector that are above the national average throughout the forecast period. The increased wage costs point in turn to a need to cut spending or raise taxes if local governments are to meet the statutory requirement that budget deficits are eliminated. Local government consumption in 2004 has therefore been revised downwards. An increase of 1.9 per cent is foreseen this year, followed by a rate of 0.9 per cent in both 2003 and 2004.

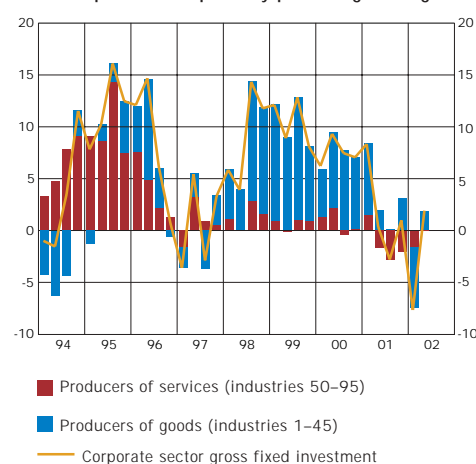
### Decreased investment this year but a recovery is foreseen in 2003 and 2004.

With the lower economic activity that has resulted in part from the recent financial market turbulence, demand for manufactured products has been weak and capacity utilisation has fallen. This has dampened investment activity and the growth of corporate capital stocks. Moreover, falling share prices may have affected the situation for corporate financing by limiting the supply of capital. In 2003 and 2004, however, the prospect of improved earnings and rising demand is judged to raise the investment propensity.

Investment in manufacturing tended to recover in the first half of this year. Services industries had accounted for a large proportion of the increased investment in the period 1998–2000 but investment there slackened during 2001 and the first half of 2002 (Fig. 20). It is mainly in such sectors as trade, transportation, postal services, telecommunications and rental, computer and business services that the volume of investment has fallen. Residential investment has risen fairly strongly in the past four years but the increase in the first half of 2002 was moderate.

Total stocks in manufacturing fell from Q1 to Q2 this year (Fig. 21). The reduction came mainly from input stocks, above all in the telecom industry. Telecom input stocks have been falling for some time, probably as an adjustment to lower demand for telecom products. Business tendency data indicate some increase in recent months in firms' dissatisfaction with unduly large stocks, which points to further reductions this year (Fig. 22). In keeping with the June report, the contribution to GDP growth from stock-building is judged to be negative for 2002. With rising demand

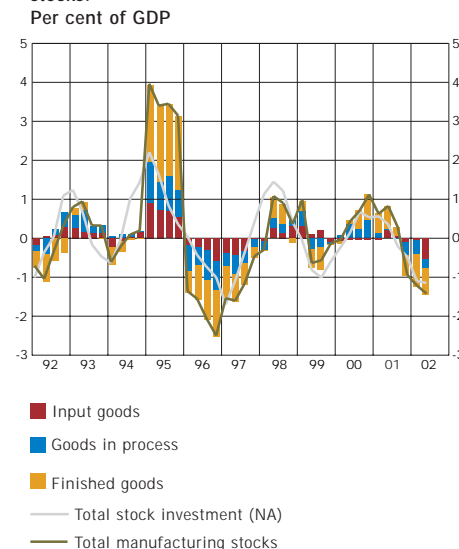
Figure 20. Corporate sector investment: decomposition of quarterly percentage changes.



Note. Investment weighted with each industry's share of total corporate sector investment, which makes the sum of all the percentage changes for goods and services equal to the percentage change in total corporate investment.

Sources: Statistics Sweden and the Riksbank.

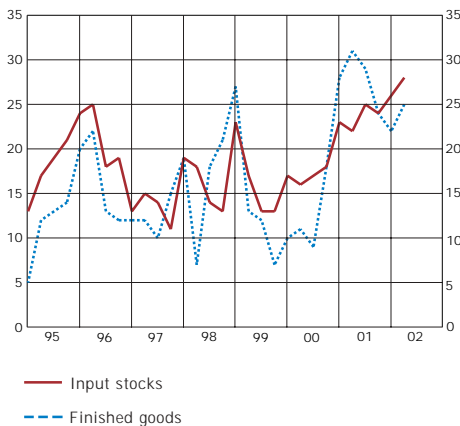
Figure 21. Total investment in stocks (national accounts data) and changes in manufacturing stocks. Per cent of GDP



Note. On account of changes in the production system, the manufacturing stocks in 1995 and 1996 have been revised, which means that the contributions from this item from Q1 1995 onwards cannot be compared with earlier quarters. The GDP share for stocks is expressed as a moving average of annual rates calculated as: (change in stocks in year  $t$  less change in stocks in year  $t-1$ )/GDP in year  $t-1$ .

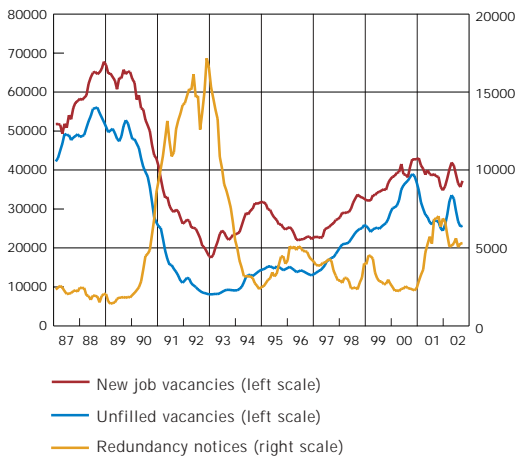
Sources: Statistics Sweden and the Riksbank.

Figure 22. Manufacturing stocks of input and finished goods.  
As-of-now judgements, net balance



Source: National Institute of Economic Research.

Figure 23. New and unfilled vacant jobs with a duration of more than 10 days and discharge notices.



Note. Seasonally-adjusted series expressed as moving three-month mean.

Source: National Labour Market Board.

and manufacturing output in 2003, stock reductions are expected to be less marked, so that stock investment makes a positive contribution to GDP growth.

### Subdued development of employment.

The labour market has been somewhat stronger than expected. Employment in the first eight months of 2002 was the same as a year earlier and open unemployment was broadly unchanged. Employment in manufacturing went on falling while the number employed in construction rose more than expected. In services industries, last year's strong increase in employment has come to an end.

It is not until mid 2003 that the rising economic activity is judged to make a positive contribution to employment. This assessment is supported by a stabilisation or a fall in the numbers of new and unfilled job vacancies, which serve to indicate the development of employment in the shorter run (Fig. 23).

However, it does look as though the number of persons affected by redundancy notices has fallen to some extent recently. The total affected to date this year is just under 45,000 or somewhat more than in the same part of 2001. More than 40 per cent of the notices come from manufacturing and about 24 per cent from banking, insurance and business services. The latest business tendency survey from the National Institute of Economic Research indicates that the labour market will remain weak in these industries as well as in construction.

All in all, some fall in corporate sector employment is foreseen this year, followed by moderate increases in 2003 and 2004 as demand picks up. In the public sector, the comparatively strong increase in local government employment early this year is expected to be followed by a fall in 2003 and a renewed increase in 2004. The main explanatory factors here are major problems with recruitment and a worsening of the local government finances on account of high wage increases (see the box on pp. 50–54).

Hours of absenteeism for personal illness, holidays, care of children and other reasons have gone on rising this year, albeit at a diminishing rate. The increase has come from absence for illness and care of children, for example. In the forecast period absenteeism is judged to fall, partly because persons who have been chronically sick are expected to leave the labour force and thereby more permanently reduce the supply of labour.

The registered level of mean working time<sup>9</sup> went on falling in the first half of this year, partly due to the increased absenteeism but also because the demand situation has entailed reduced overtime and a fall in regular working time. Although certain wage agreements include provisions for a further shortening of working time in 2003, mean working time is expected to stop falling during 2003 and 2004, mainly because overtime is expected to rise as

9 Measured as the total annual number of hours worked (from the national accounts) divided by the average number in employment (from the labour force surveys).

the economy recovers and demand grows more strongly than productivity.

Productivity was very weak last year; it was considered that the decline might be due in part to more structural factors. In the first half of 2002 production rose while hours worked fell compared with the first half of 2001. This is a clear change and productivity growth is now relatively strong, with many indications that the last year's decline was mainly cyclical. The future growth of productivity is expected to be somewhat slower as rising demand leads to increased resource utilisation.

A moderate increase is foreseen in the number of persons in the labour force. The latest forecast from Statistics Sweden points to relatively favourable demographic developments in the forecast period but labour supply is expected to be dampened by a continued increase in long-term sick leave and early retirement. Some increase in the number of persons in labour market programmes is assumed this year, followed by a fall as labour market prospects improve in 2003 and 2004. Labour supply is expected to be broadly unchanged next year and then rise some tenths of one per cent 2004.

To sum up, the overall growth of demand this year is judged to be insufficient to prevent the number in employment and the number of hours worked from falling. A recovery in the labour market, with rising employment and falling unemployment, is not expected until mid 2003 (Fig. 24 and Table 7). The development of employment in 2004 is expected to be somewhat weaker than was assumed in the June Report.

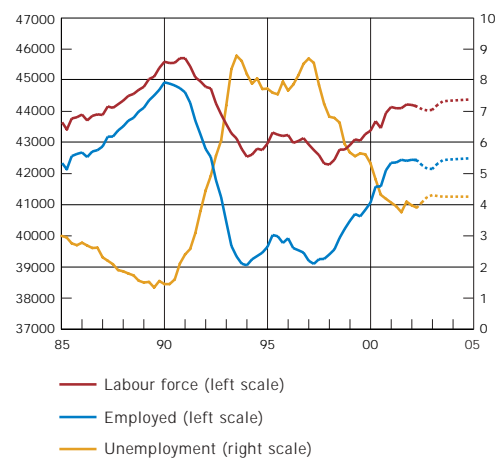
#### Resource utilisation is still high.

The output gap is one of a variety of indicators of total resource utilisation. The combined picture from the three different estimations of the gap points to some increase in resource utilisation in Q2 this year (Fig. 25).

Another indicator of resource utilisation is labour market shortages. According to business tendency data from the National Institute there are no sizeable labour shortages at present in the corporate sector (Fig. 27). In parts of the public sector, on the other hand, there are clear shortages of certain categories. Although relatively high wage increases for certain groups of public sector employees are expected to dampen the growth of production, resource utilisation in this sector is still judged to remain high. During 2003 total resource utilisation may rise as economic growth picks up.

In manufacturing, output has fallen and there are no sizeable labour shortages. However, capacity utilisation here, which is comparatively low according to Statistics Sweden's survey, did tend to rise from Q1 to Q2 this year. In the rest of this year there is judged to be little change in the utilisation of manufacturing capacity. The composition of growth from 2002 to 2003, with rising exports, a recovery of gross fixed investment and a positive swing in stockbuilding, implies a relatively large increase in

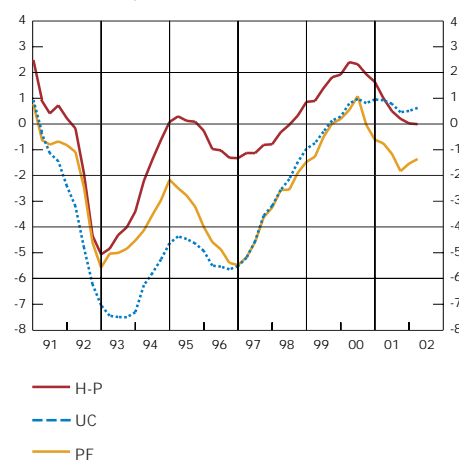
Figure 24. Labour force, employment and open unemployment.  
100s of persons and per cent



Note. Seasonally-adjusted series. Riksbank forecast 2002 Q3–2004 Q4.

Sources: Statistics Sweden and the Riksbank.

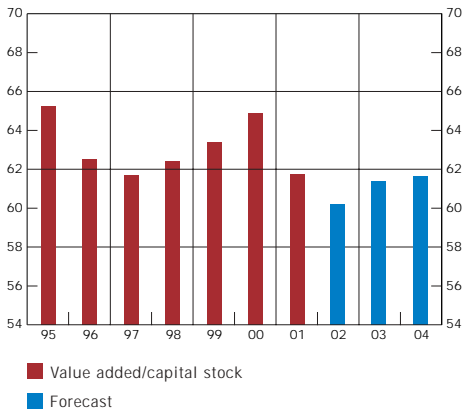
Figure 25. Econometric estimates of the output gap.  
Per cent of potential GDP



Note. Data presented as moving four-quarter means. H-P stands for the Hodrick-Prescott (or Whittaker-Henderson) filter, UC is the unobserved components method and PF is the production function approach.

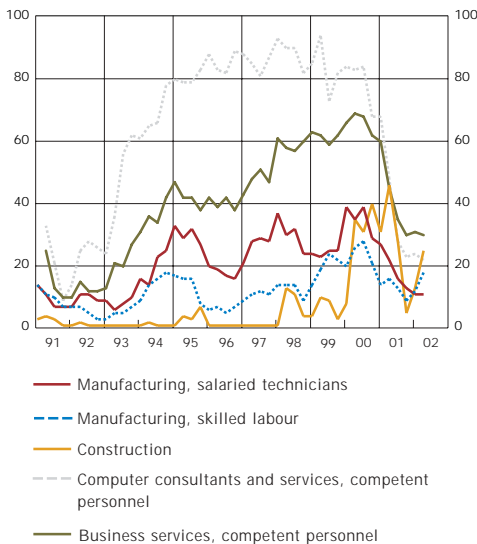
Sources: Statistics Sweden and the Riksbank.

Figure 26. Manufacturing value added/capital stock. Per cent



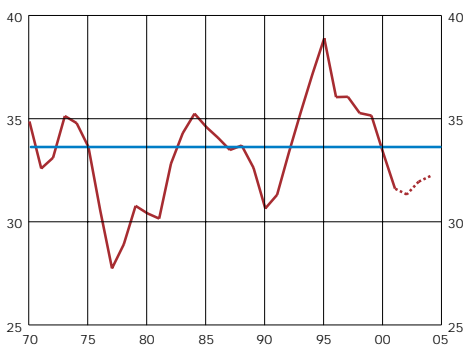
Sources: National Institute of Economic Research and the Riksbank.

Figure 27. Labour shortages according to business tendency surveys. Per cent



Source: National Institute of Economic Research.

Figure 28. Profit share. Per cent of GDP at factor values



Note. The horizontal line represents the mean for the period 1970-2001; 2002-04 forecast.

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

manufacturing output relative to the capital stock. One effect of this is increased profitability, which also means an improved outlook for earnings in this sector (Fig. 26).

Construction has been falling, according to the business tendency surveys, ever since the beginning of last year. Labour shortages have grown to date this year, which may be due to rising resource utilisation or less efficient matching in this segment of the labour market. During the forecast period the increased investment in residential and other construction is expected to lead to rising capacity utilisation in the construction sector.

In the services sector, the shortage of competent labour in computer consultancy and other business services has fallen markedly in recent months and is now almost as low as during the crisis in the early 1990s. Labour shortages in retailing have also decreased recently. When overall economic growth picks up, however, resource utilisation in the private services sector may rise.

**Wages rise less than 4 per cent next year.**

At about 3.7 per cent, wage increases in the first seven months of this year have been somewhat higher than expected. The available wage statistics are preliminary and will no doubt also be revised upwards, partly to include retroactive disbursements. In Q2, for example, the rate of wage increases fell appreciably, above all in the public sector, the reason being that agreements had not been completed for disbursements under a number of settlements in this sector. This means that the Q2 rate of about 1 per cent for the central government sector mostly consists of wage drift and possible structural effects. The expected disbursement of this year's negotiated increases in the autumn will lead to a higher average rate of wage increases for the total economy. As relatively fewer agreements have been re-negotiated this year, the retroactive disbursements are expected to be lower than in 2001. All in all, the wage forecast for 2002 has been revised upwards to an increase of 4.1 per cent.

In 2003 it is judged that wages will rise 3.8 per cent. The slight slowing of the rate of wage increases this year and next is partly a consequence of the profile of the three-year settlements that are current for large groups in the labour market. New agreements are due in 2004 for more than two million employees, which of course makes the wage forecast for that year more uncertain. Given rising resource utilisation and the expected situation in the labour market, the rate of wage increases in 2004 is judged to be 4.2 per cent. It is conceivable, moreover, that the negotiations will include demands for compensation for relative wage movements. Local tax increases and fiscal tightening may also affect the outcome of negotiations.



**Table 7. Labour market forecast in the main scenario.  
Percentage annual change and per cent of labour force**

	2001	2002	2003	2004
Nominal wage	4.3	4.1 (4.0)	3.8 (4.1)	4.2 (4.3)
Other wage costs	0.6	0.3 (0.1)	0.0 (0.0)	0.0 (0.0)
Labour productivity	0.7	2.1 (1.9)	2.0 (2.2)	1.8 (1.8)
Unit labour costs	4.2	2.2 (2.1)	1.8 (1.9)	2.4 (2.4)
Number employed	1.9	-0.2 (-0.4)	0.0 (0.2)	0.3 (0.7)
Hours worked	0.5	-0.5 (-0.4)	0.3 (0.5)	0.3 (0.7)
Mean working time	-1.4	-0.3 (0.0)	0.3 (0.3)	0.0 (0.0)
Open unemployment (level)	4.0	4.1 (4.4)	4.3 (4.4)	4.3 (4.3)
Labour market programmes (per cent of adjusted labour force)	2.5	2.5 (2.5)	2.4 (2.3)	2.2 (2.1)

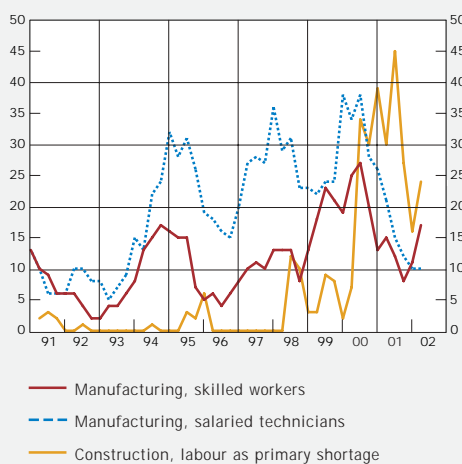
Note. The figures in parentheses are the assessments in the June Report. The item Other wage costs is calculated as the annual change in the labour costs index less the annual rate of wage increases in the corporate sector and is used here as an approximation for the total economy. Besides statutory and negotiated employer contributions, the item includes, for example, the specific wage tax, sick wages, weekend wages, holiday wages, changes in working time for salaried employees, cash compensation and benefits in kind.

Source: The Riksbank.

The assessed development of wages and productivity implies that the rate of increase in unit wage costs, which is crucial for domestic inflationary pressure, will be somewhat lower next year than was foreseen in the June Report. At the same time, the paths of prices and unit labour costs point to a further fall in the profit share this year, followed by some increase. In a historical perspective, however, the profit share will continue to be relatively low in the forecast period (Figs. 26 and 28).

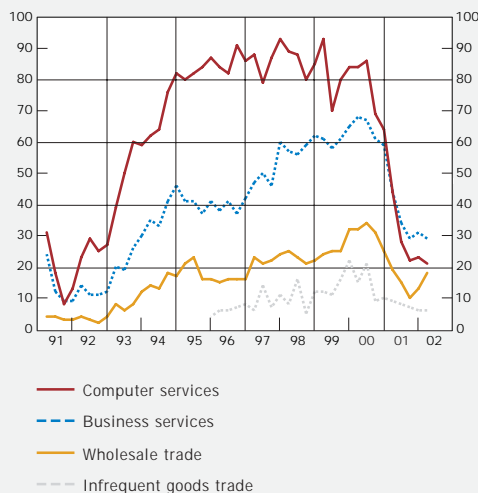
## SHORTAGES AND MATCHING PROBLEMS IN THE LABOUR MARKET?

Figure B19. Labour shortages in manufacturing and construction.



Source: National Institute of Economic Research.

Figure B20. Labour shortages in private services.



Source: National Institute of Economic Research.

Notwithstanding the cyclical slowdown, the labour market is relatively tight. The rate of open unemployment in August was 4.1 per cent. This raises questions about the available amount of unutilised resources and how well the matching of job-seekers and job vacancies works. These issues are relevant for monetary policy, partly because difficulties with recruitment can lead to inflationary rates of wage increases when economic activity improves.

### LABOUR SHORTAGES TODAY AND IN THE FUTURE

According to the quarterly business tendency surveys from the National Institute of Economic Research (NI), the level of labour shortages in *manufacturing* is currently comparatively low. Recently, however, certain shortage figures have shown a slight upward tendency (Fig. B19).

In construction, the NI figures indicate that labour shortages decreased substantially during 2001 and the early part of this year. In this year's spring interview study by the National Labour Market Board, however, difficulties with recruitment were reported by one construction firm in four.<sup>10</sup>

The NI surveys also show that during 2001 labour shortages fell in most service industries (Fig. B20). According to Statistics Sweden's labour force barometer for 2001, however, there are shortages of experienced labour with a technological and scientific education.<sup>11</sup> These shortages may grow in the future.<sup>12</sup>

The latest NI survey of the public sector indicates staff shortages in schools, child care, old-age care and medical care. According to the Federation of County Councils, the prevailing lack of doctors, nurses and care

10 Israelsson, T., Strannefors, T. and Tydén, H. (2002), *Arbetsmarknadsutsikterna för 2002 och 2003* (Labour market prospects for 2002 and 2003), Ura 2002:4, AMS (National Labour Market Board).

11 Statistics Sweden's labour force barometer is an annual questionnaire survey of a sample of employers, who are asked for their assessments of the supply of applicants with specific skills and how they expect the number of employees will change one and three years ahead.

12 See Statistics Sweden (2002), *Trender och prognoser 2002 – Befolkningen, utbildningen, arbetsmarknaden med sikte på år 2020* (Trends and forecasts 2002 – Population, education, labour market, with the sights on the year 2020).

personnel is liable to grow up to 2010.<sup>13</sup> The shortage of teachers is also expected to grow in time.<sup>14</sup>

Demographic developments combined with a numerous recruitment of replacements (mainly for retirees) will face parts of the public sector with a need to obtain a large number of new employees in the future.<sup>15</sup> Such factors as the future development of sick leave will also be important.

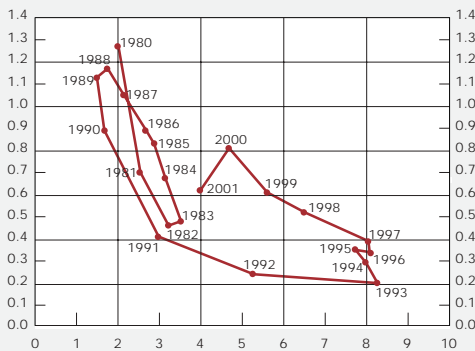
#### IMPAIRED MATCHING IN THE 1990S?

The large future need to recruit personnel, above all in the public sector, can perhaps be facilitated by an efficient process for matching job vacancies and the unemployed. Frictions in the matching process are one reason why labour shortages can co-exist with a relatively large proportion of jobless persons in the labour force. The efficiency of this process is commonly illustrated graphically as the relationship, usually referred to as the Beveridge curve, between unemployment and job vacancies.

The basic notion is that an increased number of vacancies leads to more people being employed and fewer being unemployed. The position on the Beveridge curve can also be used to interpret the efficiency of the matching process. The more efficiently a given number of vacancies is matched with those unemployed, the quicker will be the outflow from unemployment and the closer the curve will be to its origin.<sup>16</sup> The Beveridge curve can also be used to interpret changes in unemployment and vacancies. A situation where unemployment rises

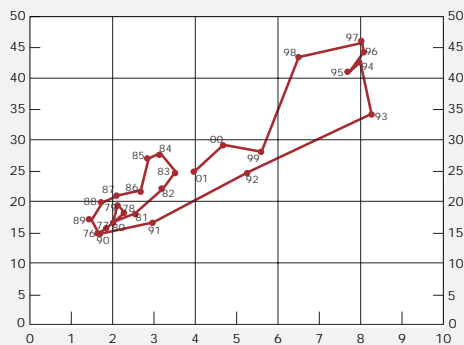
- 13 The total labour market's annual need for personnel trained in care, for example, is calculated to be about 18,000 persons, which exceeds the educational quotas for upper secondary school care programmes and adult education (totalling 7,000 persons a year). See Landstingsförbundet (2001), *Det finns alltid behov av en till, men ... Prognos 2001–2010. Rekryteringsbehov och tillgång* (There's always a need for one more, but ... Forecasts 2001–10. Recruitment need and supply).
- 14 The aggregate recruitment requirement for child care, pre-schools and schools in the period 2000–10 is calculated to be over 225,000 persons, with the recruitment of teachers as the greatest need. See Svenska Kommunförbundet (2001), *Personalen i fokus 2000* (Focus on personnel 2000).
- 15 Large numbers of participants in the Swedish labour market will be pensioned off in the period up to and including 2015. In public services it is foreseen that 47 per cent of those employed in 2001 will leave the labour market up to 2015; this is accompanied by figures of 37 per cent in manufacturing, 44 per cent in construction and 35 per cent in private services. See Johnredén, A.-C. and Wallin, C. (2002), *Den framtida personalförsörjningen. Tre scenarier fram till 2015* (The future supply of personnel. Three scenarios up to 2015). Document presented at the National Labour Market Board's seminar at Almedal on 11 July 2002: Labour supply – will Swedish industry cope with the major generational change?
- 16 For a detailed description of the Beveridge curve and the matching process, see for example Björklund, A. et al (2002), *Arbetsmarknaden* (The labour market), SNS Förlag.

Figure B21. Job vacancies (y axis) plotted against open unemployment (x axis).  
Per cent of labour force



Sources: National Labour Market Board (unfilled job vacancies) and Statistics Sweden (unemployment and labour force).

Figure B22. Long-term unemployment (y axis) plotted against total unemployment (x axis).  
Per cent of labour force



Source: Statistics Sweden.

while vacancies fall gives a movement *along* the curve and can be interpreted as a cyclical fall in labour demand. Structural changes in the labour market, on the other hand, can *shift* the entire curve; an increase in both unemployment and vacancies, for example, indicates that the matching process has become less efficient.

A Beveridge curve for Sweden in the period 1980–2001 is presented in Fig. B21. A simple graphic analysis shows that in the 1980s the long-term relationship between vacancies and open unemployment was remarkably stable.<sup>17</sup> The cyclical fluctuations show up as movements along the curve, downwards as vacancies fall and unemployment rises in a slowdown and vice versa during an upswing. In connection with the crisis in the early 1990s the picture became more dramatic. From 1991 to 1995 an increase in the unemployment rate of almost five percentage points was accompanied by little change in the vacancy rate. This can be interpreted as a loss of efficiency in the matching of jobless persons and vacancies. Some support for that interpretation is proved by the course of events since then. Since the mid 1990s there has been an upward movement along the curve towards the long-term relationship that prevailed in the 1980s, though the unemployment rate now tends to be higher for a given vacancy rate. From 2000 to 2001, however, the curve appears to have shifted inwards.<sup>18</sup>

A factor that can cause a shift in the Beveridge curve is changes in long-term unemployment.<sup>19</sup> Long periods of unemployment can weaken the drive to look for a job and lead to the job-seeker being stigmatised. The relationship between the total unemployment rate and the proportion in long-term unemployment is presented in Fig. B22.<sup>20</sup> The cyclical dynamics in the 1970s and 1980s are clearly visible as upward and downward movements. The major increase in unemployment in the early 1990s is likewise evident in the rising proportion in long-term unemployment, which from 1990 to

17 National Labour Market Board figures for unfilled vacancies; note that according to the Board's estimates, the registered vacancies represent approximately 30 per cent of all vacancies.

18 This interpretation tallies with estimations of structural unemployment in, for example, Lindblad, H. and Sellin, P. (forthcoming in 2002), "Equilibrium rate of unemployment and real exchange rate, an unobserved components system approach," *Sveriges Riksbank Working Paper Series*.

19 Other factors that may affect the matching process include changes in geographical and occupational mobility, the demographic composition of job-seekers and rule systems connected with unemployment compensation, for example.

20 Long-term unemployment is defined here as being out of work for a period of at least six months.

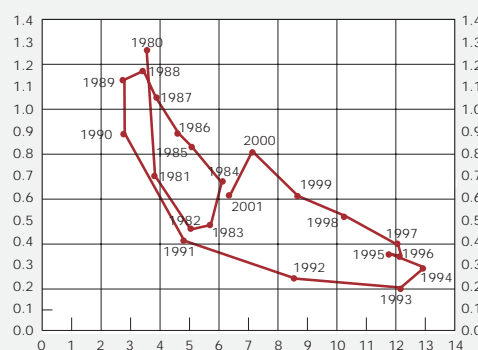
1994 moved up from approximately 15 per cent to 43 per cent. This trend was reversed after 1997, since when the proportion in long-term unemployment has fallen back towards the level in the 1980s.

The proportion in long-term unemployment is affected, like the general unemployment rate, by the scale of labour market programmes.<sup>21</sup> This can be taken into account by modifying the analysis so that participants in these programmes are also included in the number of job-seekers. For the revised Beveridge curve in Fig. B23 the vacancy rate is related to the open unemployment rate augmented with participants in labour market programmes. The curve resembles the picture in Fig. B21 but differs when it comes to what happened in the early 2000s. For a given vacancy rate, the revised Beveridge curve shows an unemployment rate that in principle is currently on the same level as in the 1980s, making it difficult to talk of this curve undergoing a clear outward shift.<sup>22</sup> An interesting point in this context is whether the picture of the matching process would have been worse if sick leave had not risen so dramatically in recent years. The statistics on job-seekers do not include unemployed persons who are registered as sick and there are also some indications that tighter rule systems in labour market policy have resulted in a cross-flow from the unemployment insurance system to the system for sickness insurance.<sup>23</sup>

The analysis so far refers to the matching process for the total economy. This aggregated Beveridge curve is affected by developments in different segments of the labour market. Earlier studies of the matching process at a disaggregated level have mostly focused on regional differences but it is also relevant to examine developments in different occupations, partly to supplement the picture presented above of labour shortages in different sectors.

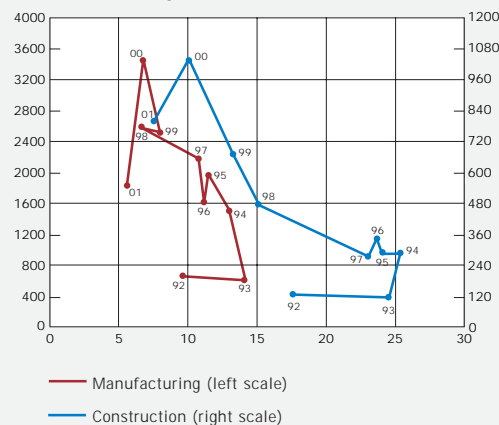
Beveridge curves for four occupational areas – health and social care, education, manufacturing and construction – are presented in Figs. B24 and B25. In all these cases the picture resembles that for the total economy. There is the

Figure B23. Job vacancies (y axis) plotted against total unemployment plus labour market programmes (x axis). Per cent of labour force



Sources: National Labour Market Board (unfilled job vacancies and labour market programmes) and Statistics Sweden (open unemployment and labour force).

Figure B24. Beveridge curves for manufacturing and construction.



Note. Unemployed percentage of members of benefit societies for manufacturing and for construction and painting, respectively.

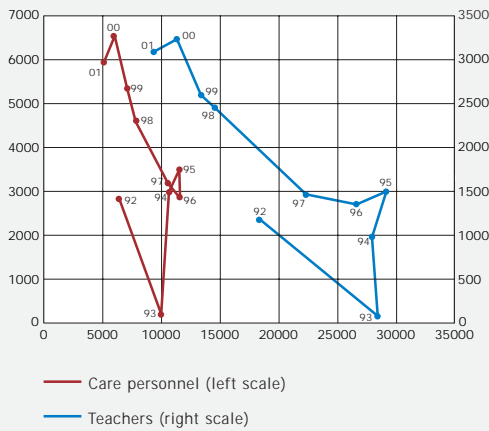
Source: National Labour Market Board.

21 See e.g. Edin, P-A. and Holmlund, B. (1991), Unemployment, vacancies and labour market programmes: Swedish evidence, in Padoa-Schioppa, F. (ed.), *Mismatch and Labour Mobility*, Cambridge University Press.

22 For a closer look at the relationship between labour market policy and the matching process see, for example, Calmfors, L., Forslund, A. and Hemström, M. (2002), Vad vet vi om den svenska arbetsmarknadspolitikens sysselsättnings-effekter? (What do we know about Swedish labour market policy's impact on employment?), *IFAU Report 8*, Uppsala University.

23 See Larson L. (2002), Sick of being unemployed? Interactions between unemployment and sickness insurance in Sweden, *IFAU Working Paper 6*, Uppsala University.

Figure B25. Beveridge curves for teachers and care personnel.



Note. For the care sector, unemployment is defined as the number of unemployed persons stating they are looking for work as a care attendant/carer, personal assistant, assistant nurse/nursing aid, nurse or doctor, and the number of unfilled vacancies refers to these categories. For teachers, unemployment is defined as the number of unemployed persons who have looked for employment as a pre-school, compulsory school, upper secondary school or university teacher, and the number of unfilled vacancies refers to these categories.

Source: National Labour Market Board.

same dramatic development in the early 1990s and the same upward movement along the curves from the mid 1990s onwards. For all these occupational areas, there is also a tendency for matching to improve from 2000 to 2001, which is the period when these sectors (apart from segments of the public sector) reported decreased labour shortages.<sup>24</sup>

#### SUMMARY

To sum up, labour shortages have decreased recently but the shortages in schools, child care, old-age care and health care are still extensive and will probably grow in the future. Labour shortages may also arise in technological and scientific occupations. This raises questions about, for example, the dimensions of the educational system and the possibility of non-inflationary changes in relative wages. The main scenario envisages that wage increases in, above all, municipalities and county councils will be relatively high in the forecast period, with a risk of this leading to demands for compensation from other groups in the labour market. Another topical issue is the extent to which difficulties with recruitment will be aggravated by a general statutory shortening of working time. It may be inappropriate to implement such a shortening at a time when the labour market is characterised by labour shortages in certain sectors. Another future challenge for the labour market is demographic developments, in that forecasts from Statistics Sweden point to a reduction of the economically active age groups around the next decade.

Matching in the labour market seems to have deteriorated in the 1990s but there appears to have been some improvement in the early 2000s. An illustration of matching at a disaggregated level shows much the same pattern as for the total economy. A high proportion of long-term unemployment may have worsened the matching process. The proportion in long-term unemployment did rise sharply in connection with the crisis in the early 1990s but it has now fallen back to much the same level as in the 1980s.

<sup>24</sup> Note that one should be cautious about comparing matching in different areas. There is, for example, no given measure of the total labour force in a particular industry or occupational category, which makes it difficult to normalise the numbers of unemployed and vacancies in Fig. B25. The same problem applies to Fig. B24, where vacancy statistics are compared with unemployment benefit statistics.

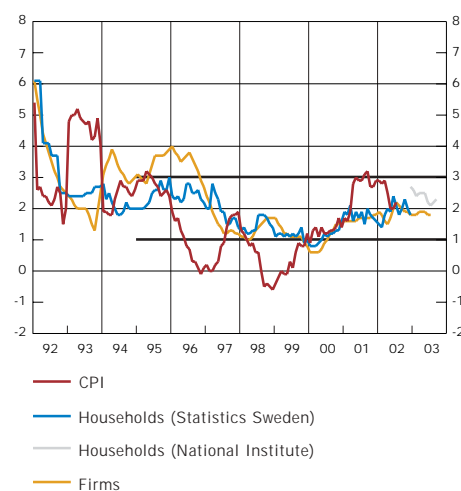
## Inflation expectations

Inflation expectations among households and firms are an important factor in the Riksbank's monetary policy analysis because they influence price and wage formation. Wage negotiations involve demands for real wage increases and although wage drift is usually governed mainly by the labour market situation, it too may be affected by inflation expectations in that wage increases on top of existing agreements may be demanded as compensation for inflation being higher than expected. An earlier study found that inflation expectations are of significant importance for industrial workers' wage drift.<sup>25</sup>

**Inflation expectations are lower than at the time of the June Report.**

Since the time of the June Report, households have adjusted their expectations of inflation downwards, from 2.5 per cent in May to 2.3 per cent in September. Firms have also made a downward adjustment, albeit more marginal, from 1.9 per cent in April to 1.8 per cent in July (Fig. 29). In terms of implied forward interest rates, market prices indicate a pronounced fall in expected inflation two years ahead.<sup>26</sup> There has been some increase in the five-year expectations since the time of the June Report and these, like the two-year expectations, are now just above 2 per cent (Fig. 30). The latest survey from Prospera points to inflation expectations that, compared with the previous survey in May, are lower among all the surveyed groups, mainly for one and two years ahead but also for five years (Table 8). According to the survey, expectations have fallen most among money market players and employee organisations.

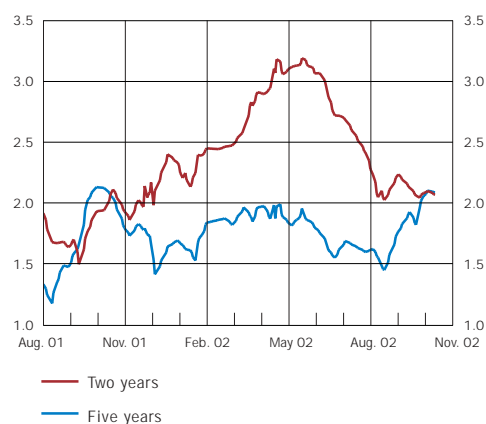
Figure 29. CPI and inflation expectations of households and firms.  
Per cent



Note. The expectations are displaced 12 months into the future to coincide with the CPI outcomes to which they refer.

Sources: National Institute of Economic Research and Statistics Sweden.

Figure 30. Expectations of inflation two and five years ahead derived from implied forward interest rates.  
Per cent



Source: The Riksbank.

25 Friberg, K. and Uddén Sonnegård, E. (2001), "Changed wage formation in a changing world," *Sveriges Riksbank Economic Review 1*.

26 Implied inflation expectations are derived from the yield curves that are implicit in nominal and real bond rates. Part of the explanation for the sharp increase in the implied two-year expectations in the spring was that real bond rates fell appreciably, probably to some extent a result of pricing at low liquidity, while the nominal interest rate was unchanged. Since then, the real bond rate has remained around the lower level and the nominal rate has fallen.

**Table 8. Expected 12-month rate of CPI inflation.**  
Per cent

<b>1 year ahead</b>		
Money market agents	2.2	(-0.2)
Employer organisations	2.4	(-0.3)
Employee organisations	2.3	(-0.4)
Purchasing managers, trade	2.4	(-0.2)
Purchasing managers, manufacturing	2.5	(-0.3)
Households (HIP) in September (August)	2.3	(0.1)
Firms (business tendency survey) in July (April)	1.8	(-0.1)
<b>2 years ahead</b>		
Money market agents	2.1	(-0.3)
Employer organisations	2.4	(-0.1)
Employee organisations	2.3	(-0.3)
Purchasing managers, trade	2.4	(-0.2)
Purchasing managers, manufacturing	2.6	(-0.2)
<b>5 years ahead</b>		
Money market agents	2.1	(-0.1)
Employer organisations	2.2	(-0.1)
Employee organisations	2.4	(-0.1)
Purchasing managers, trade	2.4	(0.0)
Purchasing managers, manufacturing	2.6	(-0.1)

Note. Unless indicated otherwise, the data are based on Prospera's survey in September 2002. The figures in parentheses are the change in percentage points from the previous survey.

Sources: National Institute of Economic Research and Prospera Research AB.

To sum up, since the time of the June Report inflation expectations have fallen among all economic agents but are still somewhat above the Riksbank's inflation target.



## Deregulations, political decisions and transitory effects

In the Budget Bill for 2003 the Government proposals include, for example, increased energy and carbon dioxide taxes from the turn of this year as an item in the green tax shift that resulted from the negotiations between the Social Democrats and the Green Party. This will affect both CPI inflation and, to some extent, UND1X inflation. In addition, there is the regular indexed uprating of specific taxes. A minimum tax on cheap cigarettes is also proposed as of March next year.

All in all, the contribution to inflation from indirect taxes, subsidies and interest expenditure is calculated to be larger throughout the forecast period than was foreseen in the June Report (Table 9).

Table 9. Contributions to inflation from indirect taxes, subsidies and interest expenditure.  
Percentage points

	Sept. 2002	Sept. 2003	Sept. 2004
Indirect taxes and subsidies	0.1 (0.1)	0.3 (0.1)	0.3
<i>of which: indirect effects</i>	<i>0.2 (0.2)</i>	<i>0.1 (0.0)</i>	<i>0.1</i>
House mortgage interest expenditure	0.1 (0.1)	0.2 (0.3)	0.3
Total CPI contribution	0.2 (0.2)	0.5 (0.3)	0.6

Note. The forecasts in the June Report are shown in parentheses for comparison. The indirect effects also show up in UND1X inflation.

Source: The Riksbank.

The CPI and UND1X contributions from the new support for dental care for the elderly as of July this year have been in line with the assessment in the June Report.

New rules for the car trade were approved this summer by the European Union for when the block exemption expired at the end of September. The exemption is to be removed entirely in 2010. The rules are to be tightened successively in order to strengthen competition in sales as well as repairs. They include measures to make it easier for car dealers to undertake marketing outside their local area and open branches elsewhere, including in other EU countries. It is also to be easier for car dealers to sell a variety of makes in the same premises. There is a considerable price spread at present between different EU countries; for some models the gap between the most expensive and the cheapest country can be up to 40 per cent.<sup>27</sup> The result in time should be somewhat lower consumer prices. A fall of, for example, 5 per cent in the price of a car (new and second-hand) and in prices for repairs and maintenance would affect CPI and UND1X inflation by -0.2 percentage points.

The general price level in Sweden in 2000 was 29 per cent higher than the EU average. The price differences vary between products. Prices that are appreciably higher in Sweden than in the rest of the European Union are mainly those for goods and services that do not feature in cross-border trade, for example transport services and restaurant and hotel services. Swedish

<sup>27</sup> See the EU Commission's press notice IP/02/1109.

prices for example electricity was below the EU average (Table 10). Clothing used to be relatively inexpensive in Sweden but in 2000 this item was about 18 per cent above the EU average. A downward adjustment of the Swedish price level towards the EU average would tend to subdue inflation while it was in progress. As an example, a complete adjustment of Swedish food prices over a period of ten years would have an annual effect on CPI and UND1X inflation of  $-0.2$  percentage points.

Table 10. Swedish price levels for goods and services in 2000.  
Index: EU15=100

Food	121
Clothing and footwear	118
Furniture and household articles	111
Health	166
Transportation	113
Communications	140
Recreation and culture	127
Hotels and restaurants	194
Domestic rents	134
Electricity, gas and other fuels	86

Source: Eurostat.

## FORECASTING INFLATION WITH A RISING REPO RATE

Market pricing and survey data of analysts' opinions both currently show expectations of some increase in the repo rate during the forecast period. External observers foresee a repo rate two years ahead that is somewhat higher than indicated by market prices. In the Riksbank's main scenario, however, inflation is forecast as usual on the technical assumption that the repo rate remains at the current level of 4.25 per cent; this serves to bring out the consequences for the formation of monetary policy. An illustrative calculation is therefore presented here that incorporates a path for the repo rate that is in line with market expectations as reported in the survey that Prospera undertook on behalf of the Riksbank in October 2002.

The survey data show expectations that the repo rate will be raised to 4.50 per cent in the coming twelve months, followed by an increase to 4.75 per cent after twenty-four months.<sup>28</sup> Here it is assumed that the short-term market interest rates will broadly follow the repo rate, while the pass-through to the longer rates is smaller. Compared with the assessment in the main scenario, the short rates are judged to be about 0.2 percentage points higher one year ahead and about 0.4 percentage points higher after two years, while the average effect on long rates stops at less than 0.1 percentage point. The higher level of interest rates also points to some strengthening of the exchange rate; during the forecast period the TCW index is judged to be an average of not quite 0.5 per cent stronger than in the main scenario.

All in all, it is considered that higher interest rates and a stronger exchange rate would lead to somewhat lower GDP growth in the forecast period. Moreover, the somewhat stronger exchange rate dampens import prices.

28 These are the median values of the expectations.

**Table B3. Modified inflation forecast, incorporating the interest rates expected by the money market.**

Percentage change and percentage points

	Annual rate 2002	Annual rate 2003	12-month rate September 2003	12-month rate September 2004
CPI	2.4 (0.0)	2.3 (0.1)	2.2 (0.1)	2.4 (0.1)
UND1X	2.6 (0.0)	1.8 (-0.1)	1.7 (-0.1)	1.8 (-0.1)

Note. The figures in parentheses are the difference from the main scenario's rate of inflation with an unchanged repo rate.

Source: The Riksbank.

Lower resource utilisation and a stronger exchange rate both tend to subdue UND1X inflation (Table B3). CPI inflation would, however, be somewhat higher than in the main scenario because here the downward effects on inflation are countered by the impact of higher house mortgage interest expenditure. The effects are all very slight.