Wage Formation

Economic Conditions in Sweden 2002

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Preface

The Swedish government has directed the National Institute of Economic Research to each year prepare a report on the economic conditions for wage formation (prop. 1999/2000:32, ”Lönebildning för full sysselsättning” [Wage Formation for Full Employment]).

The purpose of the report is to provide solid factual data to assist the parties on the labour market and the National Mediation Office in reaching a consensus on the economic conditions for wage formation in general and wage negotiations in particular. This means, for instance, that the emphasis in the report is more on reviewing various structural issues and less on presenting short-term forecasts.

In *Chapter 1* the report analyzes the long-term conditions for wage formation with Sweden outside the Economic and Monetary Union (EMU). The chapter provides, among other things, an estimate of the long-term sustainable rate of increase in labour costs in the Swedish economy in the current framework for monetary policy, with an inflation target and a floating exchange rate. *Chapter 2* provides a review of last year's outcome for wages and labour costs. *Chapter 3* examines the conditions for wage determination in the next two years. The analysis in this chapter is based on the NIER's current assessment of the trends in the Swedish and international economy for 2002 and 2003. *Chapter 4* contains a discussion and description of Swedish wage formation and its development in an international perspective. The primary focus is on the tendency in the euro zone and its impact on the development of wage and labour costs in the Swedish business sector. *Chapter 5* presents two scenarios of the Swedish economy for the period 2004–2010. In both scenarios, it is assumed that Sweden will join the EMU in 2005 after linking the exchange rate of the Swedish krona to the ERM2 monetary collaboration in 2004. The scenarios differ, however: only in one of them does wage formation function in an economically sound manner. In the scenario where wage determination does not function so well, wage costs increase too rapidly, in relation both to economic conditions in Sweden and to the tendency in the EMU countries. Finally, *Chapter 6* discusses ways to increase flexibility in nominal wages in order to dampen the effects of various macroeconomic disturbances when monetary policy can no longer be based on the specific situation in Sweden.

The work of preparing this year's report was led by Hans Lindberg, Director of Forecasting.

Stockholm, October 2002
Ingemar Hansson
Director General

Summary

In at least three respects, the parties on the labour market and their mediators can contribute to an economically sound wage formation:

- Provided that labour supply so allows, the target employment ratio of 80 percent set by Parliament and the Government can be achieved by limiting increases in labour costs to a relatively modest rate for a transitory period.
- Large variations in employment and extended periods of high unemployment can be prevented by promptly reducing nominal wage increases if the unemployment rate goes up.
- In order to avoid higher unemployment, wage formation should not result in wage increases above a rate that is economically sustainable.

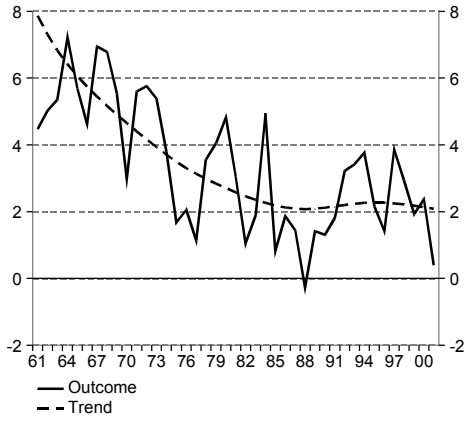
The latter two items are especially important if Sweden becomes a member of the Economic and Monetary Union. In that case Sweden will no longer have its own monetary policy that can be adapted to specific Swedish conditions. Wage formation must then play an expanded role in stabilizing employment and preventing extended periods of higher unemployment. The parties on the labour market and their mediators, both at central and local levels, will thus have a greater responsibility if Sweden joins the monetary union.

Parliament and the Government can contribute to economically well-functioning wage formation in the following ways:

- By designing labour-market, education, social-welfare, and health-care policies so that an employment rate of 80 percent will be possible without inflationary wage increases and so that the nominal rate of increase in wages will be quickly lowered if unemployment rises.
- By not adding to labour costs through higher social security contributions.
- By not increasing the cost to business of such items as sickness absence, rehabilitation, and disability pensions without compensating decreases in social security contributions.
- By not legislating a reduction in work hours.

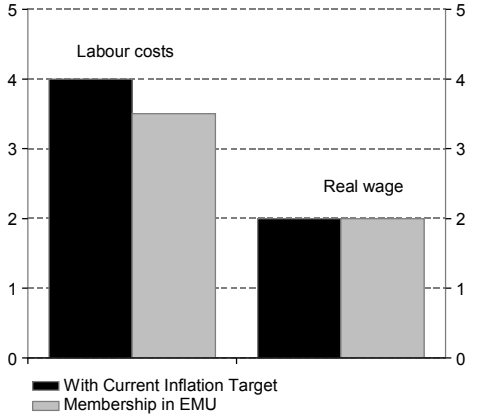
Viewed over a longer period, increases in labour costs are determined in the Swedish economy by long-term pro-

Diagram 1 Labour Productivity: Business Sector
Annual percentage change



Note: HP filter (λ=400) used in calculating trend
Sources: Statistics Sweden and NIER.

Diagram 2 Long Term Nominal Cost of Labour and Real Wage
Annual percentage change



Note: Real wage refers to consumer real wage.
Source: NIER.

ductivity growth in the business sector, in other words by the rate of increase in output per labour hour, together with the rate of increase in the prices charged by firms.

The long-term rate of increase in productivity in the business sector is estimated to be 2.3 percent. This rate exceeds the productivity growth in much of the 1980s but is less than the productivity growth in much of the 1990s (see Diagram 1). The rapid increase in productivity in the 1990s was related to exceptional circumstances, such as the elimination of low-productivity firms and jobs early in the decade and the rapid expansion in the Information and Communication Technology (ICT) area during the latter years of the same period.

The inflation target of the Riksbank (the Central Bank of Sweden) is a 2-percent annual rate of increase in consumer prices. The design of monetary policy is based on an assessment of the underlying rate of inflation as measured by UND1X for the next one to two years. In the long run, product prices in the business sector are expected to rise by 0.3 percentage points less than UND1X, depending on deviations in the composition of output and consumption and on differences in the methods of measurement for the two price indices. Thus, if UND1X inflation is 2 percent, product prices in the business sector will increase by 1.7 percent annually. This development of prices, together with productivity growth of 2.3 percent, means that labour costs will increase at a long-term rate of 4 percent per year. It is important to emphasize that in addition to negotiated wage increases and wage drift, this rise in labour costs includes components like the effects of changes in legislated and negotiated collective contributions, reductions in work hours, and changes in the costs of sick-listing and rehabilitation borne by employers.

If Sweden joins the EMU, the conditions for wage formation will change. The price-stability target of the European Central Bank is to limit the rate of increase in consumer prices – that is, HICP inflation – to a maximum of 2 percent in a medium-range perspective. While the inflation target is not formulated as an exact figure, in the present report it is interpreted as an annual increase of 1.5 percent in the HICP. Therefore, if Sweden joins the monetary union, the long-term rate of increase in labour costs will be 0.5 percentage points less – in other words, 3.5 percent instead of 4.0 percent per year (see Diagram 2). The difference will entirely be due to the lower inflation target of the ECB. Thus, real wages will increase by 2.0 per year with or without Swedish membership in the monetary union.

In the report's main scenario for the development of the economy from 2004 to 2010, it is assumed that Sweden is a member of the EMU. Sweden joins the ERM2 exchange-rate

collaboration early in 2004 and the monetary union on January 1, 2005.

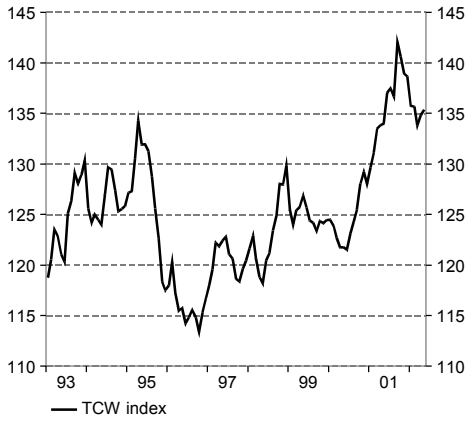
The Swedish krona has weakened substantially over the past ten years (see Diagram 3), and Swedish prices and costs are now relatively low compared to those in the euro zone (see Diagram 4). Reflecting this favourable competitive position, there have been sizable surpluses in the current account (see Diagram 5). For this reason, among others, it is assumed that the krona will be linked to the euro at a somewhat stronger rate than the present one. The central rate for the krona in the ERM2, and the conversion rate on joining the monetary union, will be set in negotiations between Sweden and the other EU countries. The calculations are based on the assumption that the central rate and the conversion rate will be SEK 8.80 to the euro.

In the main scenario, the Swedish economy adjusts successively toward long-term macroeconomic balance provided wage formation functions so that the long-term unemployment rate is 4 percent. It is thus assumed that an unemployment rate below 4 percent will entail accelerated wage increases and therefore be untenable in the long run. If wage formation follows this course, the employment ratio will be less than the targeted level in the long run.

Even with the krona linked at a nominal exchange rate stronger than the current one, and even assuming that the euro will strengthen against the dollar in the long term, further increases in prices of exports in relation to prices of imports will be possible without the surplus in the current account becoming to small (see Diagram 4). Thus, there will also be some margin for increasing labour costs in relation to the euro zone without bringing profits down to an unsustainably low level. Consequently, for a transitional period Swedish labour costs can rise somewhat more rapidly than those in the euro zone. Rising prices of Swedish exports will help prevent an unsustainable reduction in business profits. For a temporary period of relatively rapid increases in labour costs, both product prices and consumer prices will be increasing somewhat more than in the euro zone. This process will involve gradual adjustment toward long-term balance in the cost and competitive situation. In the long run, Swedish labour costs must increase at the same rate as those in the euro zone, 3.5 percent, which corresponds to the so-called Edin norm.

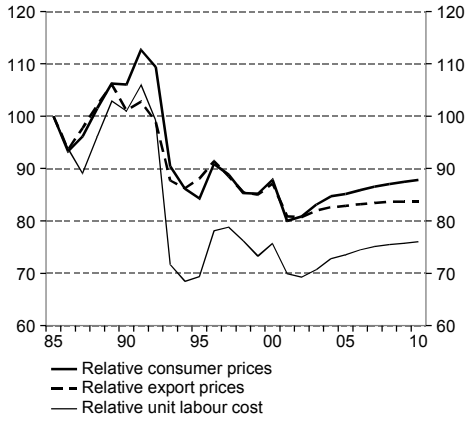
If Swedish wages and prices in relation to those in the euro zone increase to this extent through 2010, there will be some recovery from the declining trend of the past 15 years. This assessment is based on the assumption that prices of exports will increase more rapidly than those of imports – in other words, that the terms of trade will improve. Thus, the rate of increase in consumer prices in relation to product prices will be slowed, thereby creating a margin for a

Diagram 3 Exchange Rate, Swedish Krona
Index



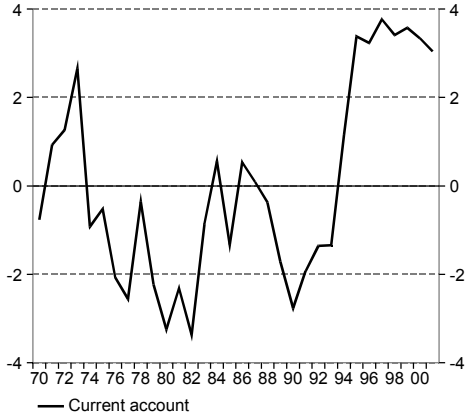
Sources: Riksbank (Central Bank of Sweden) and NIER.

Diagram 4 Prices and Costs in Relation to Euro Zone
Index 1985=100



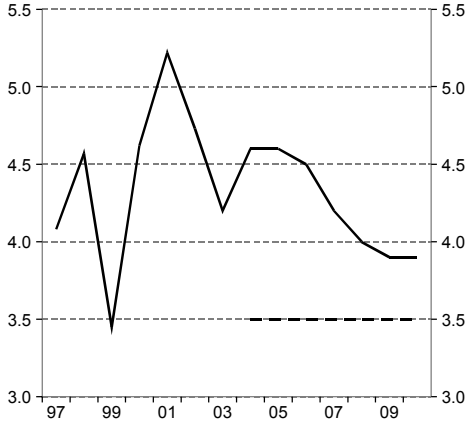
Note: Here the euro zone refers to Belgium, France, Germany, Italy, and the Netherlands. The development 2002-2010 is the NIER's forecast. Prices of exports are for goods and services. Unit labour costs are for the manufacturing sector.
Sources: Bundesbank (central bank of the German Federal Republic), OECD, Bureau of Labor Statistics, Riksbank, and NIER.

Diagram 5 Current Account
Percent of GDP



Sources: Riksbank and NIER.

Diagram 6 Nominal Hourly Cost of Labour
Annual percentage change



Sources: Statistics Sweden and NIER.

relatively large increase in real wages without reducing profits to an unsustainable level.

In the main scenario, labour costs rise during the period 2004–2010 at an average annual rate of 4.2 percent in Sweden (see Diagram 6) and 3.5 percent in the euro zone. Since productivity growth is assumed to be about the same, there is a corresponding increase in labour cost per unit of output relative to the euro zone, thus weakening Sweden's competitive position. Even after this deterioration, however, it is estimated that the country's competitive position will still be sufficiently strong to maintain a current account surplus that reduces Swedish foreign debt – a desirable outcome in view of the future demographic development.

However, there is considerable uncertainty about the long-term sustainability of the cost situation. For example, if Swedish productivity increases at a relatively slow rate, or the euro strengthens more than expected against the dollar, the cost level at an accession rate of SEK 8.80 per euro may subsequently prove too high. Moreover, Sweden has a relatively large telecommunication sector with a declining price trend as well as weak demand. Therefore, the currently low unit labour costs may to some extent constitute a necessary adjustment to declining prices of telecommunication products. If this is the case, unit labour costs cannot rise substantially without leading to unsustainably low profits. In fact, if the rapid downslide in prices persists, there may be a need for a continued decrease in relative unit labour costs. Moreover, the economic outlook has deteriorated since the summer, and uncertainty has increased. Currently, GDP growth is forecast at 1.6 percent for this year. For continued recovery to be possible, foreign demand must begin to pick up; as yet, however, there are no sure signs of such a tendency. Given these various sources of uncertainty, a slower rise in labour costs, compared to the main scenario, would be preferable for the next few years.

If the krona is linked to the euro at a stronger rate than 8.80, or if labour costs increase by more than has been assumed for 2002 and 2003, the margin for increases in labour costs during the period 2004-2010 will be correspondingly lower.

The alternative scenario describes the development of the economy when wage competition in 2004–2005 is intensive. The focus is on obtaining compensation for gains achieved by other groups, and little consideration is given to the effects of wage increases on employment and the unemployment rate. With high wage increases compared to the main scenario, the labour costs of firms will be rising faster, leading – with a certain time lag – to higher inflation. Since it will no longer be possible to adjust the nominal exchange rate, raising the prices of Swedish exports will result in lost market shares and gradually rising unemployment.

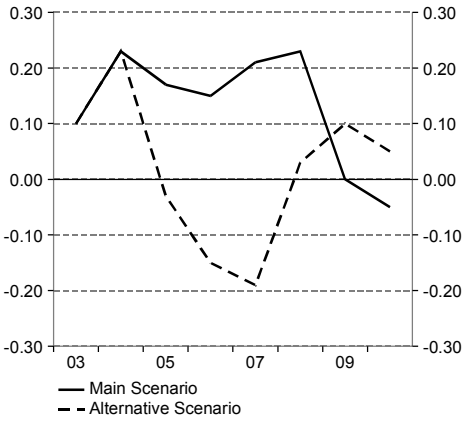
The pattern is thus the same as under previous systems of fixed exchange rates when wages rose too rapidly. One important difference, however, is that excessive costs in Sweden can no longer be corrected as before by downward adjustment of the exchange rate. With Sweden being a member of the monetary union, the adjustment will instead take place through lower nominal wage increases than in the euro zone. Since the rate of wage increases will slacken rather gradually, there will be a prolonged period of adjustment during which the economy will sustain substantial costs in the form of lower employment and lost output (see Diagram 7).

In conclusion, it is important for the economy that wage formation does not in itself lead to excessive labour costs. If labour costs are nevertheless too high – for example because of increases in social security contributions or a legislated reduction in work hours – the rate of wage increases should be slowed as quickly as possible in order to shorten the period of higher unemployment. Thus, maintaining and restoring macroeconomic balance will be highly dependent on wage formation, and the parties on the labour market will bear a heavy responsibility in this regard.

In neither the main nor the alternative scenario is the 80-percent target employment ratio achieved (see Diagram 8). To meet this goal, the labour supply would have to be sufficiently high. This requirement poses a difficult challenge to labour-market, education, social-welfare, and health-care policies. Also, labour costs in the next few years would have to increase more slowly than in the main scenario.

Given the above-mentioned risks as well as various elements of uncertainty, the assessment of the National Institute of Economic Research is that an economically appropriate rate of increase in labour costs would be 3.5 percent for the next few years.

Diagram 7 Employment
Annual percentage change, hours worked



Note: In the alternative scenario, wages increase by 1 percentage point more in 2004-2005 than in the main scenario.
Source: NIER.

Diagram 8 Regular Employment Ratio, Main Scenario
Percent of population aged 20–64

Sources: Statistics Sweden and NIER.

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1 Long Term Conditions for Wage Formation Outside the EMU

In a small, open economy like Sweden's, the rate of return on capital, regardless of the exchange-rate system, can be assumed to determined by the outside world. Therefore, the profit share of value added is determined by international conditions as well as by the current production technology. In the short run, the labour-market conditions and bargaining power can affect the relative profit and wage shares in the economy. In the long run, ambitions of raising the rate of wage increases will only lead to lower employment and lower output, with no effect on real wages and the profit share. Conversely, greater restraint in wage demands for a transitory period, together with other types of measures that stimulate the labour supply, will lead to higher employment without lowering real wages in the long run.

One criterion of well-functioning wage formation is that it is not an obstacle to a sustainably low unemployment rate or to a high employment ratio. Nor does well-functioning wage formation lead to cost shocks and in equilibrium in the real economy. In addition, wages must be as flexible as possible and subject to adjustment in order to dampen the effects of various kinds of economic disturbances.

In the long run, wage increases are determined by the growth trend in productivity and the rate of increase in product prices[1]. For an individual firm, increasing wages need not be a problem as long as it can raise the prices of its products to the same extent. From the standpoint of the economy, however, a consequence of excessive wage increases can be that prices rise too rapidly. In a system of fixed exchange rates, the product prices of competitor countries provide the anchor for the system. If domestic wages go up too much, product prices in the traded-goods sector will increase more rapidly than in other countries, and the country will risk losing market shares. With a system of floating exchange rates and an inflation target as in Sweden, the short-term risk is that domestic consumer prices may increase too much.

The inflation target of the Riksbank is a 2-percent annual rate of increase in consumer prices. In practice, the design of monetary policy is based on an assessment of the underlying rate of inflation, as measured by the UND1X, for the next one to two years. To simplify somewhat, the repo rate will

[1] In this report, the term product price is used synonymously with the more correct designation of value-added deflator. This concept, however, is not synonymous with producer price (as measured in by the producer-price index). The producer price measures the price of a good, whereas the product price only measures the value added in this good, i.e., the value with input goods excluded.

be raised (lowered) if UND1X inflation in this time frame is expected to exceed (be less than) 2 percent. If wages increase more rapidly than permitted by the inflation target, the Riksbank will have to tighten monetary policy in order to curb wage increases and thus restore consumer-price inflation to the target level. This response will entail higher unemployment and a loss of output during the process of adjustment.

The Relationship Between the Development of Productivity and the Development of Prices

It is not obvious which sector should be in focus when Swedish wage formation is analyzed. Often, though, the analysis is limited to wages in the business sector or some portion thereof. There are several reasons not to consider the general-government sector. One is that there are substantial problems involved in measuring the development of productivity and with it the rate of price increases in this sector. In the National Accounts, productivity growth in the general-government sector is set at zero. Thus, the entire increase in nominal value added per hour worked is treated as a price increase. Another difficulty is that the payroll capacity of the general-government sector is determined by the development of tax revenue. As long as wages in the general-government sector increase at the same rate as in the business sector, and the proportion of employment in the general-government sector is unchanged, wages in general-government can be financed by a constant proportional tax on earned income. This is true regardless of the productivity tendency in the general-government sector. Welfare in the economy is of course affected by the actual development of productivity in the general-government sector, but there is no effect on GDP as measured or on the long-term rate of wage increases in the economy as a whole.

The deflator for general-government output, which measures the development of prices in the general-government sector, increases more rapidly in accounting terms than do product prices in the business sector. To the extent that productivity actually improves in the general-government sector, the rate of price increases will of course be overestimated, but this has no effect on the development of consumer prices, since these only reflect the subsidized charges actually paid by the consumer for government-provided services. Consequently, excluding the general-government sector from the discussion has no real significance for the calculation of the rate of wage increases sustainable in the long run.

However, there may be reasons to exclude other sectors as well. For example, the development of productivity can

also be hard to measure in the private services sector, particularly in the case of finance and real estate. There, moreover, labour costs constitute only a small proportion of value added. Household ownership of single-family homes accounts for some 8 percent of value added in the business sector, with no input of labour at all. This fact is a reason to limit to the analysis to some subsector of business, such as the business sector excluding finance and real estate, or manufacturing.

However, the difference between basing the analysis on the development of the business sector as a whole, rather than a subsector, should normally be small. Table 1 shows the relationship between the average development of productivity and of product prices in various areas of the economy. The rate of increase in nominal value added per hour worked – that is, the sum of the change in productivity and the change in product prices – is much the same regardless of the sector in focus. While productivity growth has been lower in the economy as a whole than in the manufacturing sector, product prices have increased more rapidly. The rate of increase in nominal value added may be regarded as a measure of nominal payroll capacity in the sector concerned (see Diagram 9). The similar rates of increase in different sectors suggest that the nominal rates of wage increases sustainable in the long run have also been about the same.

Table 1 Development of Productivity and Prices 1981–2001

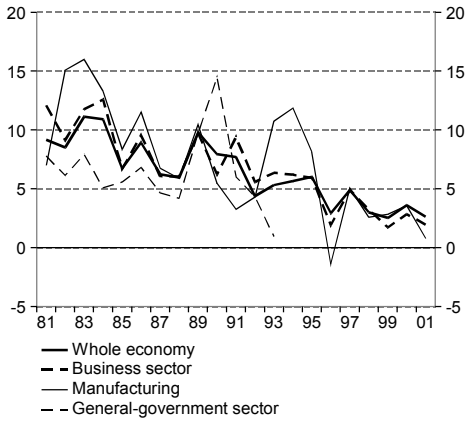
Annual percentage change

		1981–1990	1991–2001
Economy as a whole	Productivity	1.2	1.9
	Product prices	7.6	2.2
	Total	8.9	4.2
Business sector	Productivity	1.7	2.6
	Product prices	7.1	1.9
	Total	9.0	4.6
Business sector excl. finance and real estate	Productivity	2.2	3.0
	Product prices	6.5	1.7
	Total	8.9	4.7
Manufacturing	Productivity	2.6	4.9
	Product prices	7.2	–0.2
	Total	10.0	4.7

Sources: Statistics Sweden and NIER.

Diagram 9 Value Added per Hour Worked

Annual percentage change



Source: Statistics Sweden.

The conclusion is that the choice of subsector appears to be of minor importance in the analysis of the long-term rate of increase in the nominal cost of labour. In the discussion to follow, the analysis will focus primarily on the development

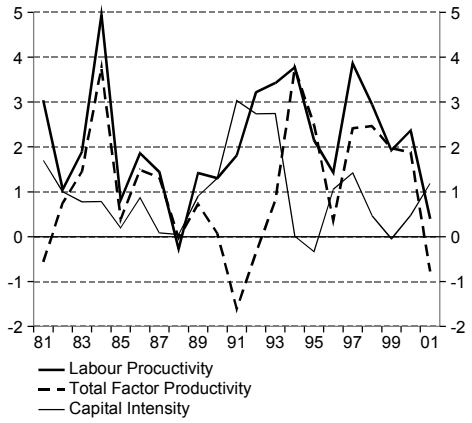
in the business sector, one reason being to facilitate international comparison.

The Long Term Trend in Productivity Growth

The growth trend in productivity is of decisive importance in the long-term development of real wages. The higher the growth in productivity, the more rapidly real wages can increase in the long run.

Labour productivity is defined as the ratio between value added in constant prices and the number of hours worked. In certain circumstances, productivity growth can be separated into two components. One component is the portion dependent on capital intensity, or capital per hour worked, which tends to increase as a result of investment; the other is associated with technological development and other measures to improve productivity (see Diagram 10). The latter component is customarily referred to as total factor productivity (TFP). As a practical matter, it may be very difficult to determine how rapidly TFP is increasing. For one thing, it is hard to calculate the capital stock with any substantial degree of precision. For another, TFP growth is calculated as a residual, i.e. as the component of growth that cannot be explained by increased use of the production factors of labour and capital. Estimates of TFP growth thus include not only all the errors of measurement in the other variables, but also the effects of cyclical variations; in addition, they are dependent on assumptions about production technology. Consequently, it is often difficult to determine how much TFP growth (and thus also the capital stock) contributes to productivity.

Diagram 10 Productivity
Annual percentage change

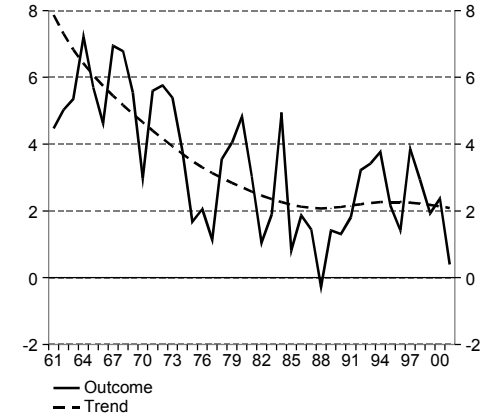


Sources: Statistics Sweden and NIER.

The development of labour productivity is characterized both by considerable short-term variation and by a trend that varies over time (see Diagram 11). The short-term variation is due in part to cyclical fluctuations in capacity utilization. This relationship explains the covariation between short-term changes in labour productivity and output. In case of more persistent disturbances, business firms may have to make substantial adjustments in their work force. One example is the years of crisis in the early 1990s, when labour productivity increased strongly despite a drop in output.

Owing to the considerable short-term variation in labour productivity, it is often difficult to determine the relevant rate of long-term growth for wage formation. Diagram 11 shows the development of labour productivity in the business sector since 1960. It can be seen in the diagram that the rate of increase followed a declining trend in the 1970s, but showed certain rising tendencies in the 1990s.

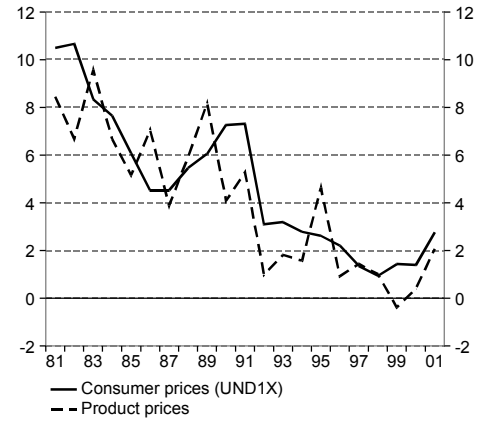
Diagram 11 Labour Productivity: Business Sector
Annual percentage change



Note: HP filter (λ=400) used in calculating trend
Sources: Statistics Sweden and NIER.

The long-term rate of growth in labour productivity in the manufacturing sector is estimated at around 3.5 percent. This rate is higher than in the 1980s but lower than in the 1990s. The strong increase in productivity in the 1990s was related to exceptional circumstances like the elimination of low-productivity jobs at the outset of the decade and the rapid expansion in the ICT area during the latter half of the same period. In the service sector, it is expected that productivity can increase somewhat more rapidly that in the 1990s, one reason being substantial investment in new technology. For the business sector and the economy as a whole, the rate of productivity growth sustainable in the long run is estimated at 2.3 percent and 1.8 percent, respectively.

Diagram 12 Product and Consumer Prices
Annual percentage change



Note: Deflator used to measure product prices in the business sector excluding finance and real estate
Source: Statistics Sweden.

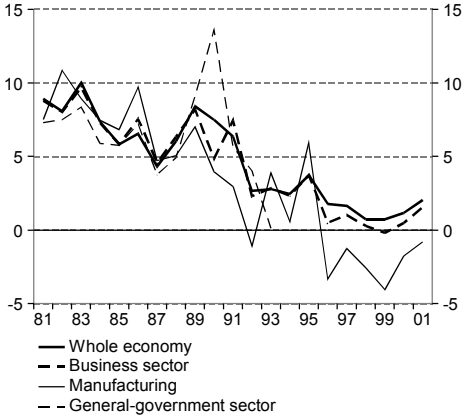
The Long Term Trend in Product Prices

From the perspective of wage earners, what matters is the development of the consumer real wage. The consumer real wage is defined as the ratio between the nominal wage and the Consumer Price Index; it thus indicates the quantity of consumer goods that wage earners can purchase for their pay. For the payroll capacity of the business sector, however, the relevant factor is the product real wage, i.e. the ratio between the nominal wage and the product-price index. As long as wages are increasing at the same rate as the sum of product prices and productivity, the profit share will remain constant, and therefore no cost problems will arise for firms. The inflation target, however, is formulated in terms of consumer prices. The underlying rate of inflation, measured as the 12-month change in the UND1X, is to be 2 percent per year. The fact that consumer prices are rising by 2 percent per year, however, does not mean that product prices are also rising at this rate (see Diagram 12).

Table 2 shows the average rate of increase for consumer and product prices for the past 20 years. All price indices show a clear decrease in the second half of the period, after Sweden introduced the inflation target (see Diagram 13). The difference between the various price series, though, is considerable. On average, the GDP deflator has increased just as rapidly as the UND1X. On the other hand, product prices in the business sector and its various subsectors have increased more slowly than the UND1X since 1991 (see Diagrams 13 and 14).

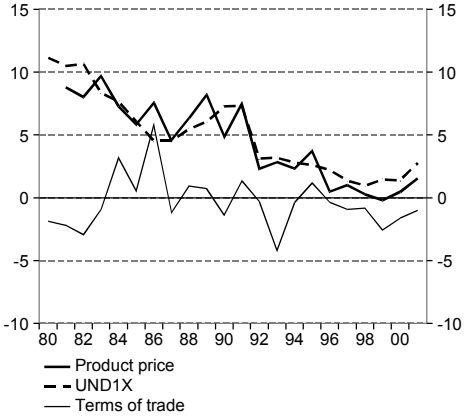
The principal factor underlying this development is the weakening of the krona since Sweden switched to a flexible exchange rate. The reason is that the weakening of the krona led to rising prices of imports. Also contributing to the deterioration in the terms of trade for Swedish exports and imports has been the tendency in the prices of telecommunication products, which has held back the rise in prices of ex-

Diagram 13 Product Prices
Annual percentage change



Source: Statistics Sweden.

Diagram 14 Product Prices, Consumer Prices, and Terms of Trade
Annual percentage change



Note: The terms of trade are the ratio between prices of Swedish exports and prices of Swedish imports.
Source: Statistics Sweden.

ports, particularly in 2000 and 2001. Prices of exports are included in product prices but not in consumer prices, whereas prices of imports affect primarily consumer prices; consequently, product prices have increased more slowly than consumer prices. See also the box captioned "Impact of Export and Import Prices on Profits".

Table 2 Prices1981–2001

Annual percentage change

	1981–1990	1991–2001	1981–2001
Consumer prices, UND1X inflation	7.1	2.6	4.8
Product prices (deflator)			
GDP	7.6	2.2	4.8
Business sector	7.1	1.9	4.4
Business sector excl. finance and real estate	6.5	1.7	4.0
Manufacturing	7.2	–0.2	3.3
Terms of trade[1]	0.3	–0.9	–0.3
Difference UND1X – product price			
GDP	–0.5	0.4	0.0
Business sector	0.0	0.7	0.4
Business sector excl. finance and real estate	0.6	0.9	0.8
Manufacturing	–0.1	2.8	1.5

[1] Ratio between prices of Swedish exports and prices of Swedish imports.
Sources: Statistics Sweden and NIER.

It is unlikely that prices of Swedish exports will continue to decline in relation to prices of imports. Given the competitive situation and the economic outlook, it is anticipated that the krona will strengthen in the next few years. Prices of Swedish exports will then increase at a higher rate than prices of imports; in other words, the terms of trade will improve. The assessment is that the terms of trade will be gradually restored to the level prevailing in 2000. Thus, prices of Swedish export goods are expected to show a somewhat stronger trend than prices of Swedish imports. In the long run, the terms of trade are assumed to be constant. Both temporarily and in the long run, therefore, product prices are expected to increase somewhat more rapidly in relation to consumer prices than in the 1990s.

There is much to indicate that product prices in the business sector may also show a weaker long-run tendency than consumer prices. The main reason is that in consumer-price inflation, as measured by the 12-month figure for UND1X, no consideration is given to changes in the basket of goods on which the index is based. If the price of a particular good goes up, the consumer may of course switch to a similar item with a price that has increased less. The expected impact of this effect, all else being equal, is that UND1X infla-

tion is about 0.2 percentage points higher than product-price inflation in the business sector. Another reason is the assessment that Sweden will continue to show a balance-of-trade surplus in relation to other countries. The implication is that exports weigh more heavily in product prices than imports in the UND1X. If prices of imports and exports rise at an equal rate and less rapidly than other prices – a reasonable assumption since much of Sweden's foreign trade is in manufactured goods – this situation will tend to slow the rate of increase in product prices compared to the UND1X. Consequently, the overall assessment is that in the long run product prices in the business sector will rise at a rate 0.3 percentage points below the UND1X.

In the years to come, product prices in the business sector are considered likely to rise more rapidly than their long-term rate owing to the appreciation of the krona and the resulting improvement in the terms of trade (see Table 3). The difference between the rate of increase in product prices and the UND1X is therefore expected to be relatively small in the short run.

Table 3 Product and Consumer Prices

Annual percentage change

	2003–2010	Long run
Product prices		
GDP	2.3	2.2
Business sector	1.8	1.7
Manufacturing	0.8	0.5
Consumer prices (UND1X)	1.9	2.0
Terms of trade	0.3	0.0

Source: NIER.

Long Term Rate of Increase in Labour Costs

As noted above, the long-term rate of growth in labour productivity in the business sector is estimated at 2.3 percent. It is also estimated that the rate of increase in product prices is 0.3 percentage points less that UND1X inflation. The long-term rate of increase in labour costs in the Swedish economy with UND1X inflation at 2 percent can therefore be calculated at 4.0 percent per year. It is important to emphasize that this rate, in addition to negotiated wage increases and wage drift, includes components like the effects of changes in legislated and negotiated contributions, reductions in work hours, and changes in the costs of sick-listing and rehabilitation borne by employers.

A corresponding calculation based on the manufacturing sector presents essentially the same picture. A higher growth

rate for productivity of about 3.5 percent is offset by a correspondingly weaker long-term rate of increase in product prices – 1.5 percent – compared to UND1X inflation. Thus, the long-term increase in labour costs can also be calculated by this method at 4 percent per year. However, there is substantial uncertainty both about the long-term increase in productivity and about the long-term difference between the increases in product prices and the UND1X, respectively. The calculations should therefore be interpreted with considerable caution.

Areas of Macroeconomic Imbalance and the Development of Employment

The rate of wage increases that is economically appropriate in the short run normally differs from the long-term rate, which is determined by the inflation target and the trend in productivity growth. One reason is that employment can be below the level desirable from an economic point of view. Restraint in wage increases, together with measures that stimulate labour supply, can then help to raise employment toward a desirable level. Another reason is that in the short run the economy normally is not in macroeconomic balance. During the crisis years of the 1990's, for example, the profit share of value added was forced strongly upward; it then dropped back as unemployment decreased. Variations in the exchange rate and in the terms of trade can also lead to imbalance in the profit share.

The assessment in last year's report was that from the standpoint of the economy there were reasons for a more subdued rate of wage increases for a transitory period, primarily to increase employment. With any estimate of the economically appropriate rate of wage increases, there is always considerable uncertainty, both in the assessment of the current situation and in the outlook for the future. The estimate of a seemingly appropriate increase in wages can easily be invalidated by unexpected developments like deterioration in the terms of trade or weaker growth in productivity. In this connection, it may be noted that the economic consequences of temporarily excessive wage increases, in terms of lower growth and employment, are far more serious than the consequences of wage increases that are temporarily too low. As a general rule, caution is therefore advised in regard to wage increases in the short run. In view of the tendency in employment and various elements of uncertainty, the NIER's assessment is that an economically appropriate rate of increase in labour costs would be 3.5 percent for the next few years.

The Impact of Export and Import Prices on Profits

Changes in the terms of trade – that is, in the relationship between the prices of exports and the prices of imports – have a strong impact on profitability in the business sector. This is particularly true in manufacturing, where the proportion of imported input goods is high and a large share of output is exported. The calculations in the example below illustrate the effects of deterioration in the terms of trade on the economy as a whole. The effects are considerably greater in manufacturing.

During 2001 the terms of trade deteriorated by 1 percent as prices of exports rose by 3.2 percent and prices of imports, by 4.2 percent. The actual outcome is presented in the first column of Table 4. The second column shows what the development would have been if the terms of trade had remained unchanged – in other words, if prices of exports had risen by one additional percentage point. (The consequences are similar if the increase in prices of imports had been one percentage point lower). If employment and output are not affected, total demand will increase in value by 0.3 percent. Assuming no change in prices of imports (input goods consumed), GDP (value added) will be 0.5 percent higher.

Table 4 Effects of Improved Terms of Trade

Billions of SEK and percentage change, current prices

	Actual outcome 2001	Calculation 2001	Difference (%)
Total demand	3 046	3 056	0.3
Domestic demand	2 039	2 039	0.0
Exports	1 007	1 017	1.0
Imports	879	879	0.0
Value added = GDP	2 167	2 177	0.5
Labour costs	1 289	1 289	0.0
Operating surplus, gross	658	888	1.1
Profit share %	40.5	40.8	0.3

Source: Statistics Sweden and NIER

In the short run, labour costs are unchanged. The operating surplus, i.e. profits, will then be augmented by the full increase in value added which rise by 1.1 percent. The profit share will be 0.3 percentage points higher.

Owing to the relatively modest 1-percent deterioration in the terms of trade in 2001, profits decreased by 1.1 percent and the profit share, by 0.3 percentage points. To put it another way if the terms of trade had remained unchanged in 2001, wages could have been raised by an additional 0.5 percentage points with no negative effect on the development of profits. The conclusion is that the development of export and import prices has a significant impact on the degree to which wages can increase without a decrease in the profit share.

2 Wages and Labour Costs in 2001

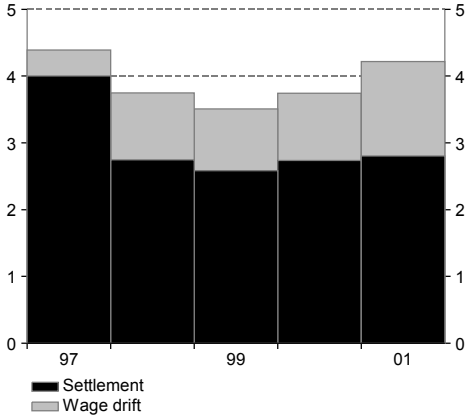
High Wage Increases in 2001

Hourly earnings rose rapidly in 2001 compared to the immediately preceding years. The preliminary outcome according to short-term earnings statistics was a total wage increase of 4.3 percent (see Diagram 15), of which 2.8 percentage points consisted of negotiated wage increases and 1.5 percentage points, of wage drift. The increase in wages was particularly strong in the construction sector, trade, credit institutions, and other business services, but hourly earnings also rose substantially in local government. In the business sector the rate of wage increases was 4.2 percent, of which 2.4 percentage points were required by negotiated settlement (see Table 5). In recent years, wage negotiations have changed. Now wages are determined to a greater degree at the local level. With this change, it has become more difficult to draw the line between wage drift and negotiated increases, and the definition of the concept of wage drift has been modified. In this report, wage drift is defined as the wage increase in excess of that quantified in the negotiated settlement. Thus, wage drift includes, for example, wage increases in areas of the labour market where they are not quantified in the agreement.

The hourly cost of labour, as measured by the labour-cost index (LCI) in the business sector, rose much more rapidly than hourly earnings in 2001. This measure includes not only hourly earnings, but also other costs in the form of social security contributions, payroll taxes, and certain wage supplements such as weekend pay, holiday pay, sick pay, and adjustments in work hours. Preliminary data indicate that labour costs in the business sector rose by 5.0 percent, and thus 0.8 percentage points of the increase in labour costs were attributable to other items (see Diagram 16). Legislated social security contributions decreased somewhat in 2001, whereas negotiated social security contributions were raised, providing 0.5 percentage points of the increase. The payroll tax rate accounted for 0.1 percentage points. The remaining increase in other costs consisted of various wage supplements.

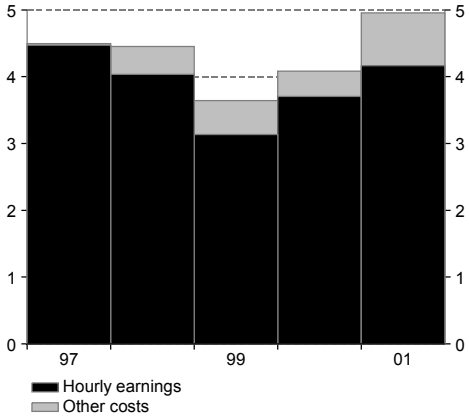
An alternative measure of the hourly cost of labour is the ratio between total earnings in the National Accounts (NA) and the number of hours worked. By this measure, labour costs in the economy as a whole rose by 5.2 percent in 2001, and the increase was even greater in the business sector (see Diagram 17). Labour costs as measured in the NA include, as does the LCI, a number of supplements which affect the statistics, such as social security contributions, payroll taxes,

Diagram 15 Hourly Earnings: Total Economy
Annual percentage change



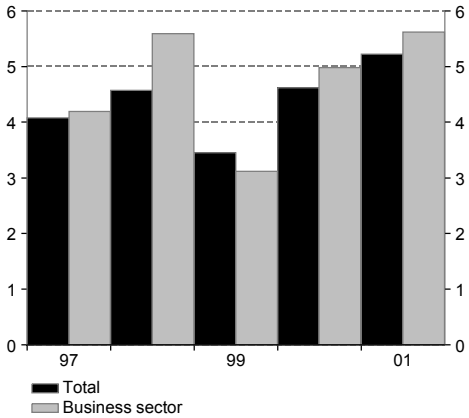
Sources: National Mediation Office and NIER.

Diagram 16 Labour Cost Index (LCI): Business Sector
Annual percentage change



Sources: Statistics Sweden and NIER.

Diagram 17 Cost of Labour (National Accounts): Total Economy and Business Sector
Annual percentage change



Source: Statistics Sweden.

and various types of wage supplements. Examples of the latter are the gross compensation for piecework, bonuses, commissions, and overtime. However the NA definition of the hourly cost of labour cost differs from the LCI in that the information is taken from the tax reports of firms, whereas the LCI is based on a monthly survey addressed directly to firms. Thus, the increases in the NA are also affected by problems of periodization, which make it difficult to calculate the true rate of increase in labour costs. Nevertheless, one reason to use the NA definition of labour costs instead of the LCI is that the former can be used in both private and government sectors, thereby permitting comparisons between industries.

Table 5 Hourly Earnings and Labour Costs in 2001

Annual percentage change

	Hourly earnings			Hourly cost of labour		
	Settle-ment	Wage drift	*Total wage increase*[1]	Other costs	*LCI*	*NA*
Manufacturing	2.7	1.2	*3.9*	0.6	*4.5*	*4.4*
Construction	2.7	2.0	*4.7*	1.2	*5.9*	*6.8*
Service industries[2]	2.1	2.3	*4.4*	0.7	*5.1*	*4.3*
Business sector	**2.4**	**1.8**	***4.2***	**0.8**	***5.0***	***5.6***
Local government	3.7	1.1	*4.8*			*5.1*
Central government	2.0	2.2	*4.2*			*3.6*
Total	**2.8**	**1.5**	***4.3***			***5.2***

[1] The outcome for hourly earnings in 2001 is based on a new system of weighting.

[2] The aggregate for service industries includes trade, hotels and restaurants, the transportation sector, credit institutions and business services, private health and nursing care, education, etc.

Sources: Statistics Sweden, the National Mediation Office, and NIER.

One reason for the large increases in hourly earnings and labour costs in 2001 was the incipient rise in employment, particularly in the construction and service industries in 2000, which contributed to the high level of resource utilization in 2001 as well. As a rule, increases in hourly earnings come as a delayed reaction to labour-market developments. Thus, considerable time may pass before changes in the labour market affect hourly earnings in certain industries. Toward the end of the 1990s, growth was high, and there was a rapid increase in the demand for labour. As demand continued to rise in 2000, the output gap[2] turned positive,

[2] The output gap is defined as the difference between actual and potential output – in other words, the level of output compatible with stable increases in prices and wages.

and resource utilization became strained. This development contributed to a higher rate of wage increases in the economy, and it was accentuated by a restricted labour supply. Although the labour force actually increased by 1.2 percent, the increase in total absenteeism was almost as great. Overall, the strained labour-market situation led to relatively large increases in earnings in most industries. During the same period, there was a rise in both inflation and inflationary expectations, which may have increased the upward pressure on wages. During the second half of 2001, the labour market began to soften. The economic outlook deteriorated throughout the year, with lower GDP growth and stagnating employment. As a consequence, the rate of wage increases in the economy has now slackened.

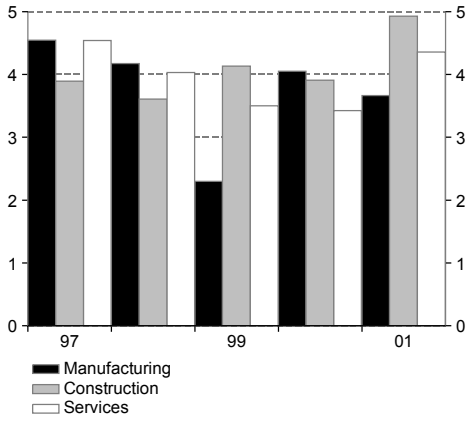
Labour negotiations in 2001 covered most of both the private and general-government sectors, since many agreements expired in the spring. In most cases, new settlements were reached for the next three years. An exception was the central-government sector, where there is a one-year agreement. For the economy as a whole, the outcome of the negotiations was somewhat below the level of the previous three-year period. To some extent, the more modest negotiated settlements may be due to lower inflationary expectations in the spring, when most agreements were reached, than during the 1998 negotiations. As in previous agreements, the wage increases provided by these settlements are largest at the outset of the period, i.e. in 2001, decreasing somewhat thereafter.

According to the National Accounts, labour costs, as mentioned above, rose by 5.2 percent in 2001. The increase thus exceeded 4.0 percent, the estimated rate sustainable in the long run, as noted in the preceding section. The substantial increases in wages and consumer prices last year were among the reasons for the NIER's upward revision of what it regards as the equilibrium unemployment rate. The increases in the number of persons on long-term sick leave and on disability pension, in combination with the equilibrium unemployment rate indicated by current wage formation, appear to rule out achieving the targeted employment ratio of 80 percent even in the long run.

High Rate of Wage Increases in Construction, Services, and the General Government Sector in 2001

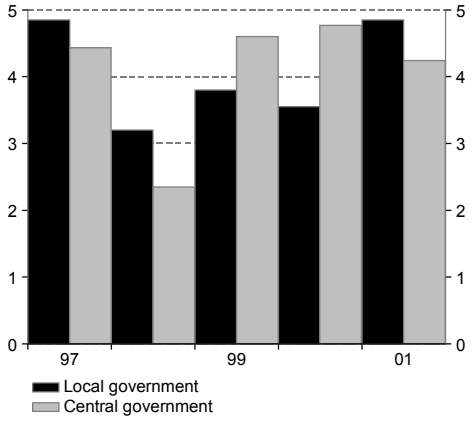
The rate of wage increases in manufacturing was somewhat lower than in the business sector as a whole in 2001 (see Table 5). The outlook in manufacturing was already deteriorating in 2000, a tendency clearly apparent from the steady decline in new orders. Capacity utilization decreased, as did the percentage of firms reporting unfilled vacancies. A

Diagram 18 Hourly Earnings: Manufacturing, Construction, and Services
Annual percentage change



Sources: National Mediation Office and NIER.

Diagram 19 Hourly Earnings: General Government Sector
Annual percentage change



Sources: National Mediation Office and NIER.

growing number of persons were affected by layoffs, and employment dropped sharply. This tendency persisted until mid-2001, when new orders began rising again. The recovery was slow, however, and as an overall effect, the rate of increase in hourly earnings slackened in 2001 compared to 2000 (see Diagram 18).

The shortage of labour has contributed to extremely high wage increases in the construction industry in the past year. Construction has enjoyed a favourable trend since 1997, and employment in this sector has increased. In 2001, however, the construction market softened, and there was a drop in new orders. Toward the end of that year, the demand for labour fell sharply. Apparently, however, this development has not significantly affected the total rate of wage increases for the year, which according to preliminary data will be high.

In the past year, wages have also increased at a high rate in parts of the services sector. The preliminary outcome for all service industries was 4.4 percent, more than in the business sector as a whole. However, there are substantial differences between industries. Wage increases have been sizable primarily in trade, hotels, credit institutions, and business services, despite decreases in sales volume and invoicing for much of the year. In the transportation sector, private health and nursing care, and education, the rate of wage increases was lower in 2001.

In the general-government sector, high demand for labour led to a sizable increase in hourly earnings in 2001. This development was particularly evident in local government, where massive shortages of teachers and health- and nursing-care staff pushed the rate of wage increases up to 4.8 percent (see Diagram 19). In local-government activities, there have also been changes in the composition of the work force; more personnel with higher education have been employed to replace retiring staff. In the central-government sector, the rate of wage increases slowed in 2001 compared to previous years, though remaining on parity with the rate in the business sector. One reason for the slackening rate may have been the decrease in central-government employment in 2000.

3 Conditions for Wage Formation in 2002–2003

Slow International Economic Recovery

In August the NIER forecast was that growth in the international economy would continue to improve in the next few years. More recently, however, the economic outlook has deteriorated, and it now appears that the upswing will take more time.

The greater risk of war between Iraq and the world community has contributed to a sharp rise in the price of oil (see Diagram 20). The heightened uncertainty, however, is expected to subside in the next few months, and the price of oil to drop back to some 25 dollars a barrel by the end of the year.

The continuation of the global stock-market decline in the last few months has also clouded the prospects for the future. From mid-August to early October, the leading stock markets in Europe, Japan, and the United States fell by an additional 10-15 percent (see Diagram 21), a development likely to discourage household consumption expenditure in the period ahead. The declining share prices reflect, among other things, a surprisingly weak profit trend in the business sector. This factor, together with greater uncertainty and a lacklustre tendency in manufacturing output, helps to explain why business investment is expected to increase more slowly in 2003 than was assumed in August.

Recent developments have furthered an erosion of business confidence in both the US and the euro zone (see Diagram 22). The trend in consumer confidence has also been weak in the last few months.

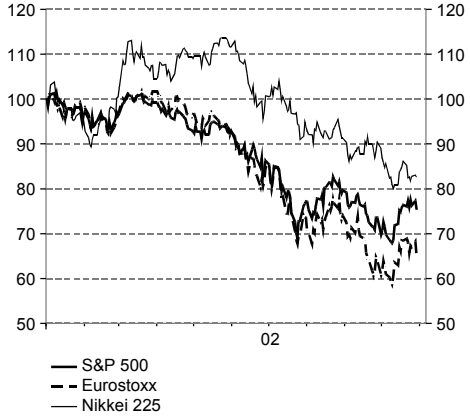
This somewhat gloomier picture of the world economy is one reason why economic growth in the euro zone is now predicted to be slightly weaker this year and next year than was forecast in August. In the US, surging household consumption in the third quarter is expected to help maintain the growth rate for 2002 that was anticipated in August, whereas the growth forecast for 2003 has been revised downward to some degree. While it is still assumed, as before, that an expansionary economic policy (see Diagram 23) will facilitate world economic recovery in 2003, resource utilization in both the US and the euro zone is forecast to remain low this year. According to the present assessment, actual growth will not exceed potential growth, and the output gap will not begin to close until the end of 2003.

Slower recovery in the global economy will also mean that world trade will develop at a lesser rate than previously expected. The consequence for Sweden is that in 2003 so-

Diagram 20 Price of Oil
Brent USD/barrel, monthly values

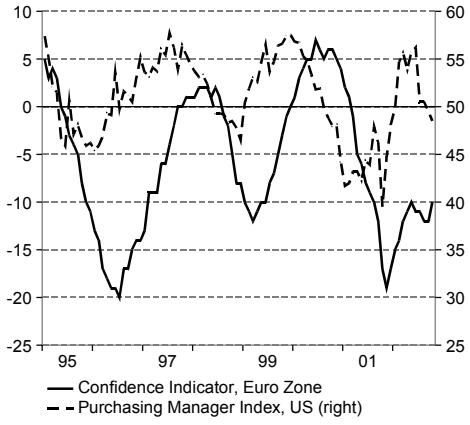
Sources: Thomson Financial Datastream and NIER.

Diagram 21 Index of Stock Prices
Index January 1, 2002=100, daily values



Sources: Thomson Financial Datastream and NIER.

Diagram 22 Business Confidence
Balances and index, respectively, monthly values



Sources: Eurostat and ISM.

called market growth will be about 1 percentage point lower (see Table 6) than was predicted in August.

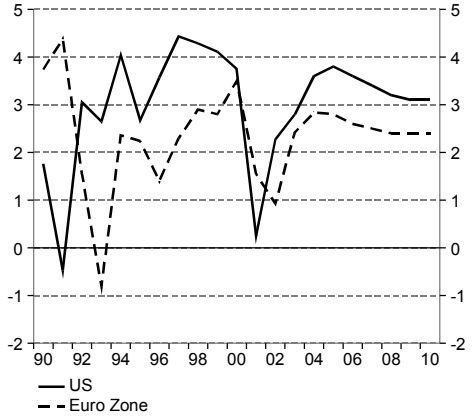
Table 6 International Trends

Annual percentage change and percent

	1996–1999	2000	2001	2002	2003
United States					
GDP	4.1	3.8	0.3	2.3	2.8
CPI	2.3	3.4	2.8	1.5	2.0
Official interest rate[1]		6.5	1.75	1.75	2.5
Euro zone					
GDP	2.3	3.6	1.5	0.9	2.4
HICP	1.5	2.3	2.6	2.1	1.7
Official interest rate[1]		4.75	3.25	3.25	3.75
OECD 19					
GDP	3.0	3.4	0.7	1.4	2.4
CPI	1.8	2.3	2.1	1.3	1.5
Market growth for Sweden[2]	8.5	11.1	–0.4	1.0	6.3
TCW index[1]	122.8	128.0	138.6	132.4	129.0

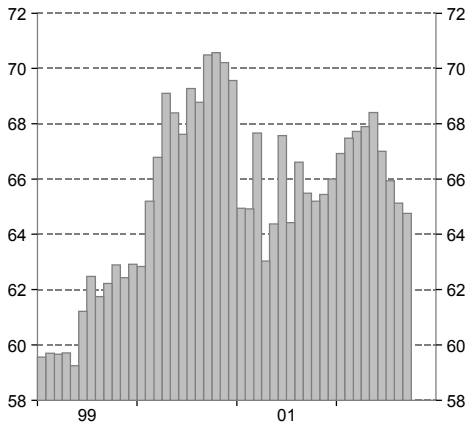
[1] I December of each year.
[2] For the OECD 14.
Source: NIER.

Diagram 23 GDP – US and Euro Zone
Annual percentage change, annual values



Sources: Bureau of Economic Analysis, Eurostat and NIER.

Diagram 24 Exports of Goods
Billions of SEK, seasonally adjusted monthly values



Source: Statistics Sweden.

Swedish Growth Bolstered by Household Consumption

According to the August NIER forecast, the Swedish economy would already pick up in 2002 and achieve relatively high GDP growth in 2003. However, the economic outlook has also deteriorated for Sweden in the past few months. Compared to the August forecast, weaker growth is now considered likely late this year and early in 2003. While it is mainly the international developments that have been weaker than expected, also domestic demand appears to slacken toward the end of this year.

The gloomier prospects for the international economy are reflected in weaker Swedish exports. The upswing in exports of goods last spring was short-lived; in recent months the tide has turned, and exports of goods have decreased (see Diagram 24). Exports are expected to remain largely unchanged for the rest of the year, with only a modest increase early in 2003. Compared to August, the growth forecast for exports has thus been lowered by about 1 percentage point for this year and almost 2 percentage points for next year (see Table 7).

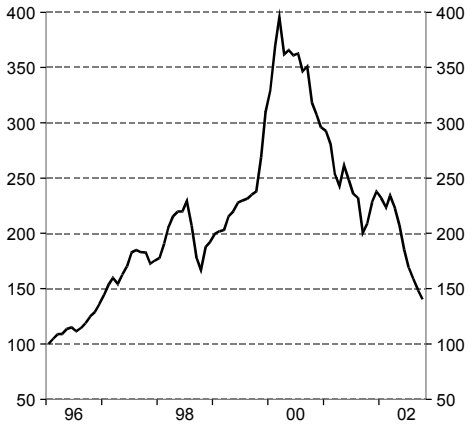
Household consumption is also expected to show a less favourable development than was forecast in August. According to the revised National Accounts for the first half of 2002, the consumption trend was weaker, and with the

stock market continuing its downslide, households are now less inclined to consume (see Diagram 25). Household consumption is still expected to help maintain GDP growth this year, but net lending has increased noticeably. It is now estimated that household revenue will increase more slowly and that the unemployment rate will be somewhat higher than in the August forecast. For a while longer, these factors will limit the inclination of households to consume, thus postponing the process of recovery by two or three quarters.

As a direct consequence of lower aggregate demand in the economy, the forecast for imports has been revised downward. All factors considered, the forecast for GDP growth has been lowered from 1.9 percent to 1.6 percent for 2002 and from 2.7 percent to 2.3 percent for 2003 (see Table 7 and Diagram 26).

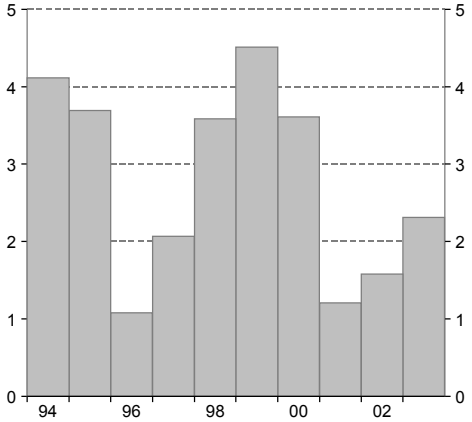
Despite downward revisions for 2002 and 2003, demand is expected to provide a cyclical contribution to productivity growth. In manufacturing, productivity growth is forecast to go up substantially to 5.5 percent in 2002 and then to drop back somewhat in 2003. In the economy as a whole, by contrast, productivity growth is anticipated to continue rising in 2003 as capacity utilization increases in the services sector.

Diagram 25 SAX Stock Market Index
Index Januray 1996=100, monthly values



Sources: Thomson Financial Datastream and NIER.

Diagram 26 GDP, Market Prices
Annual percentage change



Sources: Statistics Sweden and NIER.

Table 7 Supply and Demand, Productivity 2001–2003

Billions of SEK, current prices and percentage change, constant prices

	2001	2001	2002	2003
GDP at market prices	**2 167**	**1.2**	**1.6**	**2.3**
Household consumption expenditure	1 080	0.2	1.8	2.6
General-government consumption expenditure	578	1.4	1.8	0.8
Central-government	163	0.0	1.4	0.2
Local-government	415	1.9	2.0	1.0
Gross fixed capital formation	379	1.5	–1.5	4.2
Stockbuilding[1]	3	–0.5	–0.4	0.4
Exports of goods and services	1 007	–1.4	1.6	5.2
Imports of goods and services	879	–3.9	–0.1	6.9
Net exports[1]	128	0.9	0.8	–0.3
Labour productivity				
Economy as a whole (GDP)		0.7	2.0	2.2
Business sector		0.4	2.6	2.7
Manufacturing		1.6	5.5	4.4

[1] Contribution to GDP growth.
Sources: Statistics Sweden and NIER.

Unemployment Rate to Rise in 2003

The somewhat weaker tendency in demand both in Sweden and abroad primarily affects the export-sensitive goods

Diagram 27 Employment, Labour Force, and Unemployment Rate
Millions and percent, respectively

Sources: Statistics Sweden and NIER.

Diagram 28 Number of Persons at Work and Employment
Millions, seasonally adjusted quarterly values

Sources: Statistics Sweden and NIER.

Diagram 29 Absence from work
Thousands, seasonally adjusted quarterly values

Sources: Statistics Sweden and NIER.

industries, but the service industries are affected as well, since they are dependent on domestic demand. As a consequence, the demand for labour in the economy is also affected negatively.

The labour force is expected to increase marginally in the year ahead (see Diagram 27). The working-age population is rising, but the number of disability pensions and persons listed as chronically ill is continuing to increase, though at a diminishing rate. Moreover, the number of students is considered likely to increase next year, a factor that will adversely affect on the labour supply (see Table 8).

Table 8 Estimated Addition to the Labour Force from Different Sources

Level in thousands of persons and estimated annual addition in percent, respectively

	2001	2001	2002	2003
Labour force	4 414	1.2	0.1	0.1
of which net addition from:				
Population aged 16-64	5 632	0.7	0.8	0.8
Labour-market programmes[1]	87	–0.1	–0.2	–0.2
Education	415	0.8	–0.1	0.1
Disability pensioners, conscripts, homemakers, etc	716	–0.2	–0.4	–0.5

[1] Programmes outside the labour force, according to Labour Market Surveys.
Sources: Statistics Sweden, Labour Market Board, and NIER.

Employment is forecast to decrease by 0.2 percent in 2003, primarily because of continued cost cutting at firms. As demand strengthens, however, employment is expected to recover toward the end of 2003 (see Diagram 28). It is estimated that absenteeism will decrease somewhat next year, one reason being that many persons formerly listed as chronically ill will have retired on disability pension (see Diagram 29). The number of persons at work is predicted to increase slightly during the year.

The Government has announced a goal of reducing ill-health by half. Specifically, the number of sick-days is to be halved by 2008 without increasing in retirement on disability pension more than would be justified by the demographic tendency alone. Achieving this target would have dramatic consequences for the economy (see the box captioned ”The Government’s Goal of Cutting Ill Health by Half”). It is too early, however, to consider these measures, which so far are only declarations of intent, in the forecast. They will be taken into account as they are incorporated in proposed legislation or the equivalent.

The Government's Goal of Cutting Sickness by Half

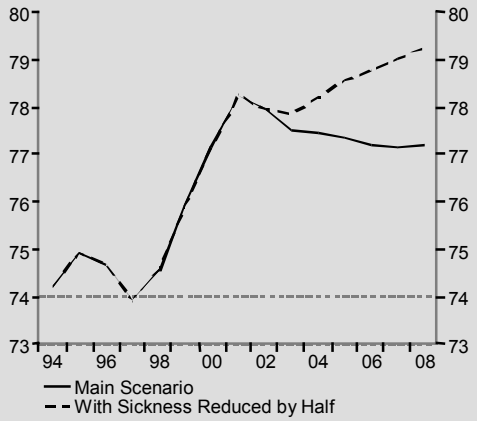
The Government has set a goal of cutting ill health in half by 2008. Specifically, the number of sick-days compensated by the Social Insurance Office (the annual equivalent of some 100 million days of sickness absence from full-time work) is to be reduced by 50 percent. Included in the goal is the requirement that the average number of new disability pensions granted in 2003-2007 be lower than in 2002. Thus, the goal of reducing sickness absence cannot be achieved by retiring more people on disability pension. In monitoring progress toward this goal, the demographic tendency is to be taken into account. The proportion of persons in age groups with a high sick-listing frequency is expected to increase in the next few years; if this demographic tendency is considered, it should not be necessary to reduce the actual number of sick-days exactly by half in order to meet the goal. The Ministry of Health and Social Affairs is currently studying the details involved in setting the target.

In the forecast presented in this report, it is assumed that the rate of increase in sick-listings will flatten out in 2004 and subsequently follow the demographic trend. The budget proposal for 2003 includes measures that would further limit sick-listing. Such measures will be considered in the NIER's forecasts as they are incorporated in proposed legislation or the equivalent.

To provide an impression of the economic impact of reducing ill-health by half, a simple supplementary calculation is provided here. In this calculation, it is assumed that the decrease in ill-health will be fully reflected in more persons at work (i.e., the number of employed less the number absent) and higher GDP. Both the assumptions of unchanged productivity and average hours worked, and that of a rapid adjustment in output, are optimistic. In reality, it is reasonable to suppose that on average the productivity of those who return to work after sick-listing will be lower.

The calculations were based on the data in the Labour Force Surveys (LFS) by Statistics Sweden. As a practical matter, it is rather difficult to translate the Government's goal of fewer sick-days according to the statistics of the National Social Insurance Board into a lower number of persons sick-listed in the LFS statistics.

Diagram 30 Regular Employment Ratio
Percent

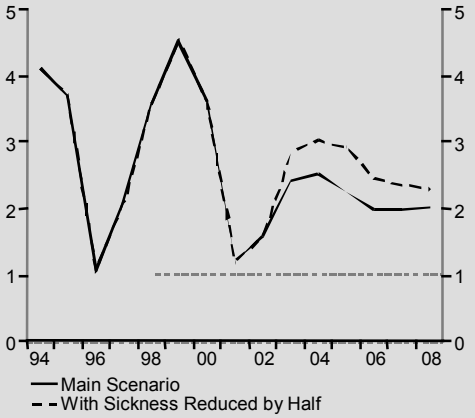


Source: NIER.

In the calculation it is assumed that in 2008 the number of persons sick-listed will have decreased by 200,000 compared to a purely demographic extrapolation with an unchanged sick-listing ratio in each age group. The number of persons sick-listed is so distributed that the number "absent from work" decreases by 83,000, while the number "not capable of working" and outside the labour force decreases by 117,000. For the former group, this means regaining the level of 1997, when sickness absence was at a low. The latter group provides an addition to the labour force by the same number of persons. Unemployment is assumed to be unchanged in proportion to the labour force, thus rising somewhat in absolute numbers. Employment then increases by 112,000, whereas the number of persons at work goes up by 195,000 compared to the main scenario. The regular-employment ratio is estimated at 79.3 percent of the population in 2008 – not far below the Government's target of 80 percent (see Diagram 30).

With average labour productivity unchanged, it is estimated that GDP growth will be more than 0.4 percentage points higher in 2003-2008 (see Diagram 31).

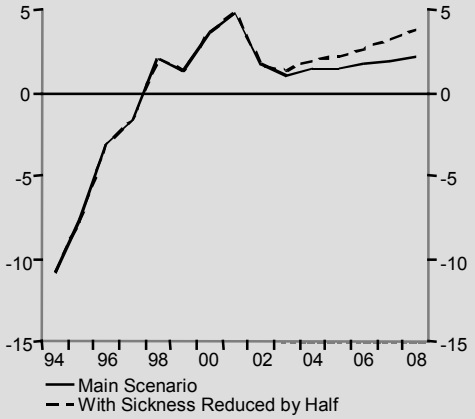
Diagram 31 GDP
Percent



Source: NIER.

For several reasons, the effects on general-government finances will be considerable when sick persons are rehabilitated so that they can return to work. In the calculations, it is taken into account that payments of sickness benefits will be lower, while central-government revenue from social security contributions and VAT will be higher. In addition, there will be more revenue from income taxes since wages exceed sick pay. It is estimated that in 2008 net lending as a share of GDP will be about 1.5 percentage points higher if ill-health is halved (see Diagram 32).

Diagram 32 General Government Net Lending
Percent of GDP



Source: NIER.

These improvements are equivalent to an additional margin of about SEK 45 billion in 2008 for tax cuts or reforms. Aside from better health in society at large, however, the principal effect from the standpoint of the economy is that GDP will be 2.6 percent higher in 2008, with a correspondingly greater margin for private and government consumption.

With absenteeism dropping as the economy slows, average hours worked are expected to increase by 0.3 percent next year. Since fewer persons will be employed, the increase in total hours worked will be somewhat less (see Table 9). Productivity is forecast to improve rather substantially this year, primarily because firms are maintaining a labour reserve that will make it possible to expand output without a corresponding increase in employment.

Table 9 Summary of the Labour Market Forecast

Level in thousands, annual percentage change, and level in percent

	2001	2001	2002	2003
Population, aged 16–64	5 632	0.5	0.6	0.6
Labour force	4 414	1.2	0.1	0.1
Number employed, aged 16-64 (according to Labour Force Surveys)	4 239	1.9	0.1	–0.2
Number of persons at work	3 528	1.2	–0.5	0.1
Persons potentially looking for a job	125	–3.8	4.5	–0.6
Unemployment[2]	175	4.0	4.0	4.3
Expanded unemployment[1]	300	6.6	6.7	7.0
Average hours worked		–1.4	–0.5	0.3
Hours worked (millions, according to National Accounts)	6 935	0.5	–0.4	0.1
Persons in labour-market programmes[1]	111	2.5	2.6	2.7
Regular-employment rate[3]	4 214	78.2	78.1	77.6

[1] Level as a percentage of the expanded labour force
[2] Level as a percentage of the labour force
[3] Proportion of persons aged 20-64 with regular employment
Sources: Labour Market Board, Statistics Sweden, and NIER.

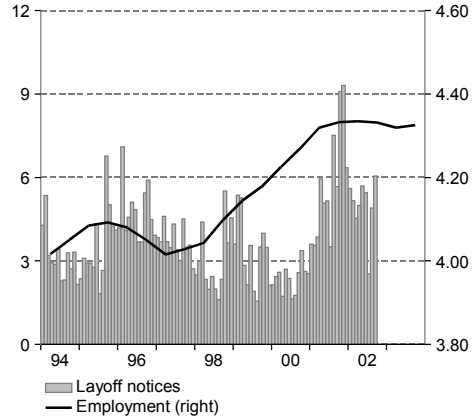
The unemployment rate remained unchanged during the spring, in part because of increased participation in labour-market programmes. During the same period, the number of announced layoffs was relatively high (see Diagram 33). Still another indicator of slackening demand for labour is a lower number of new vacancies at the Employment Office (see Diagram 34). In view of the weaker demand for labour, an unemployment rate of 4.3 percent is forecast for 2003.

The number of persons in labour-market programmes is expected to increase in the first months of 2003 but to begin decreasing somewhat toward the end of the year (see Diagram 35); this will likely contribute to some reduction in the number of latent seekers of employment. The latter are included in the expanded-unemployment rate, which in many cases is a more accurate measure of the labour-market situation. The expanded-unemployment rate is expected to rise to 7 percent in 2003.

The number of persons aged 20–64 with regular employment increased in the second quarter of this year compared to the same period last year. Since population growth was somewhat greater, the regular-employment ratio

Diagram 33 Layoff Notices and Employment

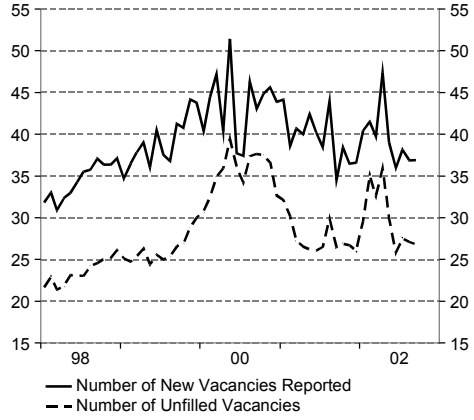
Thousands and millions, respectively; monthly and semiannual values, respectively



Sources: Labour Market Board, Statistics Sweden, and NIER.

Diagram 34 Unfilled Vacancies

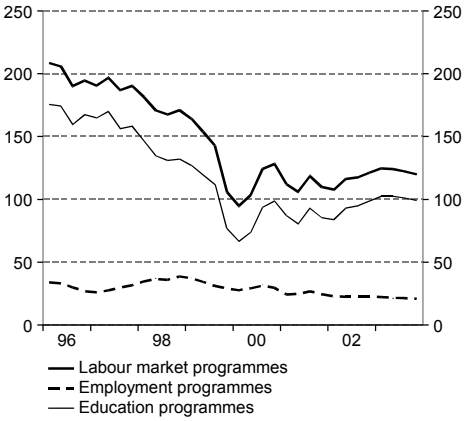
Thousands, seasonally adjusted monthly values



Sources: Labour Market Board and NIER.

Diagram 35 Number Participating in Labour Market Policy Measures

Thousands, seasonally adjusted quarterly values

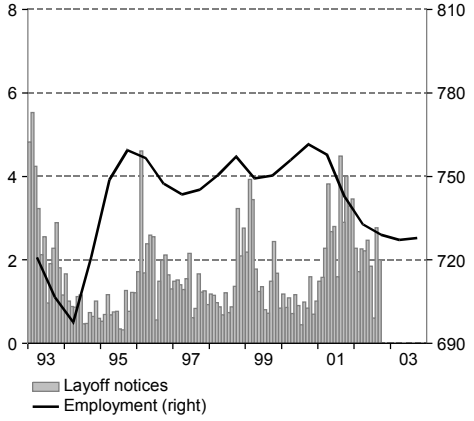


Sources: Labour Market Board and NIER.

Diagram 36 Regular Employment Ratio

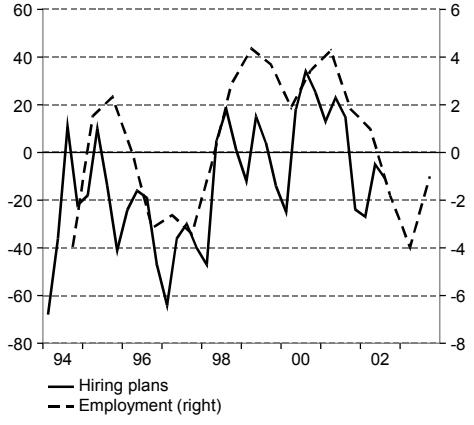
Note: In percent of the population aged 20-64
Sources: Statistics Sweden and NIER.

Diagram 37 Layoff Notices and Employment: Manufacturing
Thousands, monthly and semiannual values, respectively



Sources: Labour Market Board, Statistics Sweden, and NIER.

Diagram 38 Hiring Plans and Employment: Construction Industry
Balances and percentage change, respectively; quarterly and semiannual values, respectively



Sources: Statistics Sweden and NIER.

decreased marginally to 78.1 percent. The employment ratio is predicted to drop to 77.6 percent in 2003 (see Diagram 36).

Both output growth and the demand for labour are expected to be weaker than in the August forecast. Decreased employment in 2003 will also tend to limit resource utilization, and a somewhat more negative output gap is anticipated for 2002-2003, a factor that should tend to limit increases in prices and wages. The assessment is thus that the labour market will be able to meet the demand in the business sector without serious problems of matching job applicants with vacancies.

Wage Increases Slackening in the Business Sector

Business conditions in manufacturing were better than expected during the first half of this year. There was an increase in the volume of output and new orders, leading to a somewhat greater demand for labour and contributing in turn to a rising rate of wage increases. However, it is anticipated that this development will lose some of its momentum during the autumn. The proportion of firms reporting unfilled vacancies is relatively low, and manufacturing companies are not expected to continue adding significantly to their work forces. Layoff announcements remain at a high level (see Diagram 37), and employment is expected to decrease. Consequently, the rate of wage increases in this sector is expected to be unchanged for the year as a whole compared to 2001. All factors considered, should wages in manufacturing increase by 3.9 percent in 2002 (see Table 10). Employment in manufacturing is expected to continue decreasing 2003, slowing the rise in hourly earnings somewhat to 3.7 percent for that year.

Table 10 Hourly Earnings, Wage Settlements, and Cost of Labour

Annual percentage change

	Jan-jun 2002	2002			2003		
	Earn-ings	Earn-ings	Settle-ment	NA[1]	Earn-ings	Settle-ment	NA[1]
Manufacturing	*4.1*	3.9	2.5	4.8	3.7	2.2	3.8
Construction	*4.1*	4.1	2.7	5.0	4.0	2.3	4.1
Service industries	*3.6*	3.8	2.5	4.8	3.8	2.2	4.0
Business sector	***3.8***	**3.9**	**2.5**	**5.0**	**3.7**	**2.2**	**3.9**
Local govt	*4.0*	4.2	2.6	4.7	4.1	2.4	4.4
Central govt.	*2.7*	3.9	2.0	4.9	3.9	1.6	4.4
Total	***3.8***	**3.9**	**2.4**	**4.7**	**3.8**	**2.2**	**4.2**

[1] Hourly cost of labour according to the National Accounts.
Sources: Statistics Sweden, National Mediation Office, and NIER.

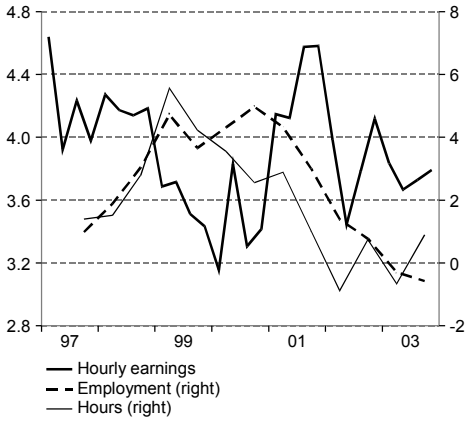
Employment in the construction sector continued to increase at outset of this year, but is expected to decrease during the autumn. According to the Business Tendency Survey, there was a downturn in the hiring plans of construction firms for 2002 after a brief rise in the first quarter, and the outlook for the future is seen as negative (see Diagram 38). This tendency began to show up in the earnings statistics for the first half of 2002, where the preliminary outcome was considerably lower than last year. For 2002 as a whole, hourly earnings in the construction industry are expected to rise by 4.1 percent, 0.6 percentage points less than the year before. Both employment and output are forecast to decrease in 2003. Not until the end of that year should growth in output slowly begin to recover. In light of the above, the forecast is for the rate of wage increases to slacken to 4.0 percent in 2003.

In the service industries, the surge in employment subsided last year, affecting the development of hourly earnings as well (see Diagram 39). It is anticipated that in 2002 employment will continue to increase at a lessening rate in trade, hotels, restaurants, credit institutions, business services, and commissioned assignments. Layoff announcements in the service industries have been at a relatively high level for the past year, and according to the Business Tendency Survey, capacity utilization remains low (see Diagram 40). In trade, employment has fallen in the past year, and only limited hiring is expected in the near future. On the other hand, employment has increased in transportation and in private health and nursing care. In these sectors there is also a shortage of staff. Overall, limited demand on the labour market so far this year has led to sharply diminished increases in hourly earnings in the service industries, and this weak tendency is expected to continue throughout 2002. For the first half of this year, hourly earnings in the service industries rose at the rate of 3.6 percent, 0.8 percentage points less than last year. For the full year 2002 and for 2003, the rate of wage increases is forecast at 3.8 percent.

For the business sector as whole, the preliminary outcome for wage increases in the first half of 2002 was 3.8 percent. The clear slackening in the rate of wage increases since last year is explainable by the decrease in employment over the past year (see Diagram 41). For 2002 as a whole, hourly earnings are forecast to rise by 3.9 percent. It is anticipated that the decline in employment will continue during the coming spring, but that there will be some improvement in the latter part of 2003. Since the business outlook is expected to remain bleak during 2003, the rate of wage increases is forecast to drop somewhat further to 3.7 percent.

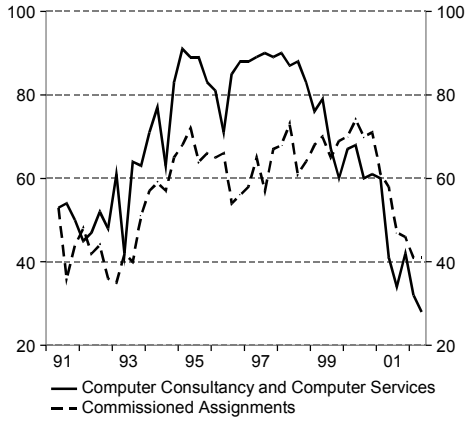
In the business sector, the rate of increase in labour costs is predicted to fall by more than 0.5 percentage points to 5.0 percent in 2002 (see Table 10 and Diagram 41). The decrease

Diagram 39 Hourly Earnings, Employment, and Hours Worked: Service Industries
Annual percentage change, quarterly values



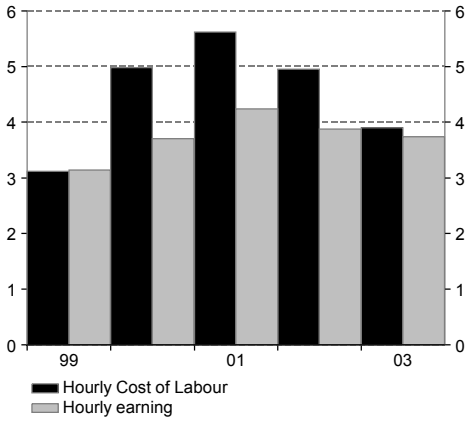
Sources: Statistics Sweden, National Mediation Office, and NIER.

Diagram 40 Capacity Utilization: Commissioned Assignments, Computer Consultancy, and Computer Services
Percent, seasonally adjusted quarterly values



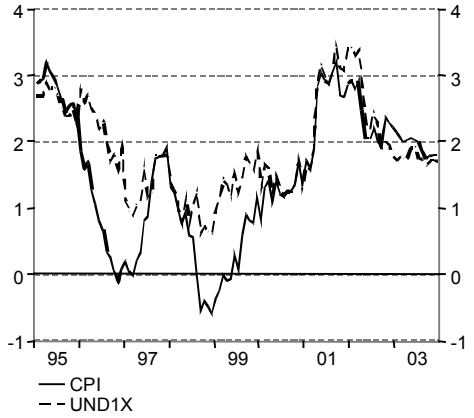
Note: Balances = restrictions on supply – restrictions on demand.
Source: NIER.

Diagram 41 Cost of Labour and Hourly Earnings: Business Sector
Annual percentage change



Sources: Statistics Sweden, National Mediation Office, and NIER.

Diagram 42 Consumer Prices
Annual percentage change, monthly values



Sources: Statistics Sweden and NIER.

Diagram 43 Hourly Earnings, Employment, and Hours Worked: Local Government Sector
Annual percentage change, quarterly values

Sources: Statistics Sweden, National Mediation Office, and NIER.

Diagram 44 Hourly Earnings, Employment, and Hours Worked: Central Government Sector
Annual percentage change, quarterly values

Sources: Statistics Sweden, National Mediation Office, and NIER.

will be concentrated in the construction industry, where the rate of increase in labour costs has slackened considerably. On the other hand, this rate is expected to rise somewhat both in manufacturing and in the service industries. The forecast for 2003 is that labour costs in the business sector will increase by 3.9 percent.

Wages Increasing at a Slackening Rate in the General Government Sector

The rate of wage increases in local government[3] fell off somewhat in the first half of 2002 compared with the previous year, despite a persistent shortage of staff. The increase in employment so far this year has been in the municipalities. Some of the increase has been due to the temporary employment subsidy in 2002, which has given municipalities an incentive to hire staff ahead of schedule. In the proposed budget, the Government is retaining the employment subsidy in 2003. In the county-council districts, on the other hand, employment has decreased. One reason is that the nursing colleges now belong to the central-government sector instead of the county-council sector as before; another is that certain hospitals have been privatized. There is still a shortage of staff in local government. This is particularly true of health care, education, childcare, and care of the elderly, and the shortage is expected to remain in the immediate future. The preliminary figure for the rate of wage increases in the first half of 2002 is 4.0 percent, and the estimated rate of increase in hourly earnings for the year as a whole is 4.2 percent (see Diagram 43).

In the central-government sector, the expansion of higher education, together with a larger number of police personnel, led to an increase in employment in the first half of 2002. Since the demand for labour is expected to remain unchanged for the rest of the year, hourly earnings are forecast to increase by 3.9 percent in 2002 (see Diagram 44).

In the years ahead, no change in employment is anticipated for the general-government sector, and the economic outlook is forecast to improve only gradually. For these reasons, wages in the general-government sector are expected to rise at about the same rate in 2003 as this year. The forecast is for a 4.1-percent wage increase in local government, and for hourly earnings in central government to rise by 3.9 percent.

[3] The local-government aggregate includes municipalities and county-council districts.

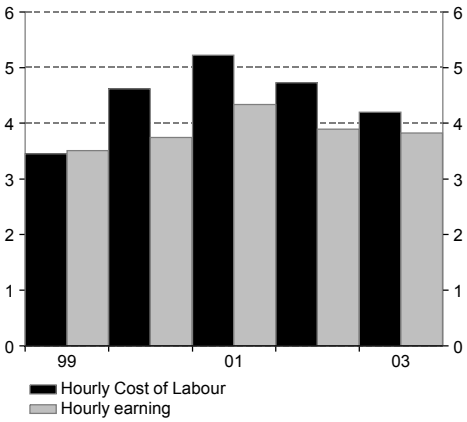
Wages and Labour Costs Rising More Slowly

Inflation has gone down by about 1 percentage point since the beginning of this year (see Diagram 42). The effects of temporary factors on inflation have faded away, and the lower rate of resource utilization has begun to have an impact on pricing. Inflation is once again in line with the target set by the Riksbank. Next year resource utilization is expected to hold down price increases. Consumer prices are forecast to rise by less than 2 percent in 2003. Weaker inflationary pressure has helped to lower the expected inflation rate, with a probable dampening effect on the rate of wage increases in 2002 and 2003.

With the deteriorating trend in employment and the decline in the number of hours worked, the rate of wage increases in the economy as a whole has been slackening. The preliminary outcome for the first half of 2002 indicates that hourly earnings in the economy as a whole will increase by an average of 3.8 percent for the full year, a more modest rate than last year. The economy is expected to remain sluggish during the autumn and to improve somewhat thereafter. All factors considered, total hourly earnings in the economy as a whole are forecast to rise by 3.9 percent in 2002 (see Diagram 45). Of this total, negotiated wage increases account for 2.4 percentage points, and wage drift for the remaining 1.5 percentage points.

Continued weakness in the labour market is expected in 2003, with some decrease in employment during the year and a marginal increase in the number of hours worked. Resource utilization is predicted to be relatively low, and unemployment to rise. The softer labour market is considered to be one reason why the rate of wage increases is expected to slacken to 3.8 percent in 2003, with negotiated wage increases accounting for 2.2 percentage points and wage drift for 1.6 points. The hourly cost of labour in the economy as a whole is forecast to rise by 4.7 percent in 2002 (see Table 10), 0.5 percentage points less than the previous year. In 2003 the rate of increase is expected to drop further to 4.2 percent.

Diagram 45 Cost of Labour and Hourly Earnings: Total Economy
Annual percentage change



Sources: Statistics Sweden, National Mediation Office, and NIER.

4 Swedish Wages in an International Perspective

Diagram 46 Sweden's Net Balance of Trade
Exports of goods minus imports of goods, percent of GDP

Source: Statistics Sweden.

Swedish foreign trade is showing sizable surpluses despite both weakening international demand and a relatively unfavourable product composition of Swedish exports (see Diagram 46).[4] The large surpluses are an indication that Swedish production keep up with the international competition. This picture is confirmed to some extent by Table 11, which shows that Sweden is ranked 11th among the countries of the world. Of the countries in the euro zone, only four – all relatively small – rank above Sweden (Finland, Luxembourg, the Netherlands, and Ireland). The ranking is based on the development of the economy as a whole, the efficiency of the financial and public sectors, and the traditional and technological infrastructure.

Table 11 International Competitiveness of Different Countries

Ranking as of April 2002

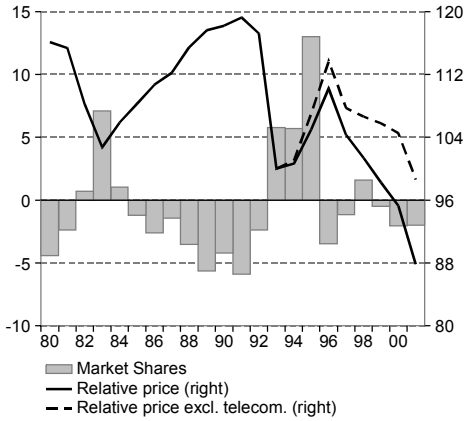
	Ranking				
	1998	1999	2000	2001	2002
Country					
US	1	1	1	1	1
Finland	6	5	4	3	2
Luxembourg	3	3	6	4	3
Netherlands	4	4	3	5	4
Singapore	2	2	2	2	5
Denmark	10	9	13	15	6
Switzerland	9	7	7	10	7
Canada	8	10	8	9	8
Hong Kong	5	6	12	6	9
Ireland	7	8	5	7	10
Sweden	**16**	**14**	**14**	**8**	**11**
Iceland	18	13	9	13	12
Austria	24	18	15	14	13
Australia	12	11	10	11	14
Germany	15	12	11	12	15

Source: IMD (International Institute for Management Development) World Competitiveness Scoreboard 2002.

In principle, the balance of trade is the difference between what is produced and what is consumed in the economy as a whole. The current account is the balance of trade adjusted for trade in service and transfer payments. National savings have been substantial in Sweden during the latter part of the

[4] By an unfavourable product composition is meant that telecommunications equipment accounts for a large share of exports and that international demand for these particular products has plunged dramatically since 2001.

Diagram 47 Market Share and Relative Price of Exports
Annual percentage change and index 1993=100



Sources: Statistics Sweden and NIER.

1990s, owing primarily to consolidation of government finances. This is reflected in surpluses in the balance of trade and current account.

Although the balance of trade is sometimes used as an indicator of a country's international competitiveness, it is only one of several possible measures. Another is the relative price of exports, which measures the price of Swedish exports in relation to the corresponding international price. This relative price is of direct significance for the development of the world-market shares of individual countries and firms in the short run.[5] For example, a lower relative price should result in higher international market shares.

Diagram 47 shows the export price of Swedish manufactured goods in relation to the corresponding international price during the period 1980–2001. As is apparent from the diagram, the Swedish export price rose gradually during the 1980s. This price trend, which was driven largely by relatively high increases in Swedish labour costs, contributed to the accompanying decline in Sweden's international market share. When the krona depreciated after Sweden switched to a floating exchange rate in 1992, the relative export price dropped back, leading to a strong recovery in Sweden's international market share. Since the mid-1990s, however, both the relative export price and Sweden's market share have fallen. The clear drop in the relative price is probably due to sharply rising productivity in the telecommunications sector. Sweden's shrinking market share is attributable in turn to an unfavourable tendency in Swedish exports of telecommunication products.

How Are Sweden's Relative Export Prices Determined?

The relative price of Swedish exports is determined partly on a microeconomic level by the relative production costs and profit margins of Swedish firms, and partly on a macroeconomic level by the nominal exchange rate that permits buyers to compare prices in the same currency. At least to some extent, Swedish firms can determine their own production costs and profit margins, but they cannot affect the nominal rate of exchange. This means that many factors outside a firm's control affect the relative prices of its exports as well as its international market shares.

[5] The relative price of Swedish exports summarizes at a particular time the effect of several underlying factors, such as household and business investment decisions and the macroeconomic tendency as a whole. In the long run, a country's international competiveness is determined more by the relative educational level of the labour force and the relative level of technological development.

Swedish Labour Costs

The critical element in the cost of production for firms is the cost of labour. Consequently, the tendency in the international competitiveness of Swedish firms is determined primarily by the development of Swedish labour costs in relation to international labour costs. As noted above, international competitiveness is also dependent on the relative profit margin of firms and the nominal rate of exchange. This subsection reviews the development of Swedish labour costs in relation to those in the world around in recent decades. Comparisons are provided with the euro zone and the United States, which together account for more than 50 percent of the market for Swedish exports of goods. The comparison with the euro zone is of particular interest in light of possible Swedish membership in the EMU.

Labour cost per unit of output is determined by two components. One is the direct cost in the form of the sum of total wages before taxes, collective charges, and payroll taxes. The other is the quality of the labour force itself as reflected, for example, in labour productivity. Therefore, in order to assess the trend in Swedish labour costs, it is necessary to study both direct costs and costs in relation to labour productivity.

Cost of Labour in National Currency

The easiest way to study the development of labour costs in Sweden compared to other countries is by comparing costs in national currency. The cost of labour consists mostly of wages paid to employees. Diagram 48 shows the development of nominal hourly earnings in the Swedish business sector since the 1980s, and Table 12 presents the mean values for selected periods.[6] Diagram 49 illustrates the development of the nominal hourly cost of labour.

According to Diagrams 48 and 49, the rate of increase in hourly earnings and in the hourly cost of labour declined in Sweden, the euro zone, and the US in the first half of the 1980s. During the 1970s, international inflation increased, one reason being the absence of a nominal exchange-rate standard in the world economy after the collapse of the Bretton Woods system in 1971. The rise in inflation was also fuelled by sharp increases in oil prices in 1973–1974 and 1978. As compensation for inflation, employees demanded higher nominal wages, which in turned contributed further to inflation. A so-called price-wage spiral thus arose.

Diagram 48 Nominal Hourly Earnings: Business Sector
Annual percentage change, 3-year moving average, national currency

Sources: OECD and NIER.

Diagram 49 Nominal Hourly Cost of Labour: Business Sector
Annual percentage change, 3-year moving average, national currency

Sources: OECD and NIER.

[6] In order to provide long and comparable time series, Diagrams 48-52 and 56, 60, and 61 contain OECD data processed by the NIER. Although the measures used are approximations, they have been found to be of sufficiently high quality to be used for trend analysis.

Table 12 Nominal Earnings and Nominal Cost of Labour in the Business Sector

Annual percentage change

	1980–1992	1993–2001	1980–2001
Sweden			
Hourly earnings	8.0	4.8	6.7
Hourly cost of labour	8.5	4.6	6.9
Euro zone			
Hourly earnings	7.8	3.0	5.5
Hourly cost of labour	8.0	2.4	5.7
United States			
Hourly earnings	5.2	3.6	4.5
Hourly cost of labour	5.3	3.6	4.6

Sources: OECD and NIER.

At the close of the 1970s, economic policy in the US and many European countries shifted to curbing inflation. Also because of a weak international economy and decreasing oil prices, inflation began to recede in the early 1980s. Lower actual and expected inflation, in addition to relatively high unemployment, had a dampening effect on wage increases. Another change in economic policy that may have limited nominal labour-cost increases in the early 1980s was the establishment of the European Monetary System (EMS) and its exchange-rate mechanism, the ERM.[7] By dampening fluctuations in exchange rates between member countries, the ERM made it more difficult for countries to depreciate their own currency in order to accommodate relatively large increases in wages and prices.

In the euro zone, the rate of increase in labour costs continued to slacken in the 1990s. One reason may have been the so-called convergence programme, which among other things imposed requirements in regard to the development of inflation and monetary policy in candidate countries for admission to the EMU. With beginning of the second phase of the EMU in 1994, the central banks of the candidate countries were given greater independence; this step may also have made it easier to fight inflation. Moreover, faltering growth in productivity throughout most of the 1990s may have had a dampening effect on increases in labour costs. As in the euro zone, labour costs in the US showed a slackening rate of increase early in the 1990s, but have been rapidly accelerating since 1997. By last year, labour costs in the US business sector had largely resumed their rate of increase at the outset of the 1990s.

In recent years there has been some acceleration of labour costs in Sweden, the euro zone, and the US. This tendency has probably been driven by a relatively strong inter-

[7] The EMS was established in 1979.

national economy and rapid productivity growth in high-technology sectors.

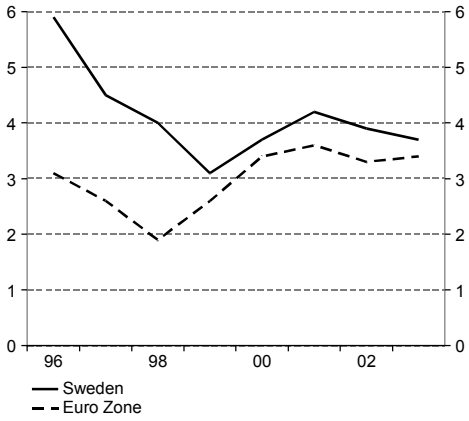
Table 13 Nominal Earnings and Cost of Labour in the Business Sector

Annual percentage change

	1996	1997	1998	1999	2000	2001	2002	2003
Sweden								
Hourly earnings	5.9	4.5	4.0	3.1	3.7	4.2	3.9	3.7
Hourly cost of labour	7.1	4.2	5.6	3.1	5.0	5.6	5.0	3.9
Euro zone								
Hourly earnings	3.1	2.6	1.9	2.6	3.4	3.6	3.3	3.4
Hourly cost of labour	3.4	2.6	1.6	2.3	3.2	3.4	3.3	3.4

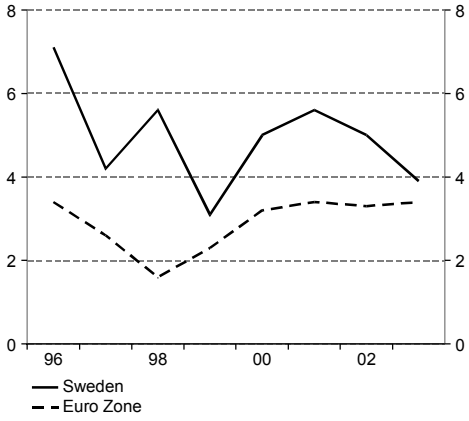
Note: For the euro zone the data include the entire economy except for agriculture, general-government administration, education, and health care.
Sources: Statistics Sweden, National Mediation Office, NIER, and the European Central Bank.

Diagram 50 Nominal Hourly Earnings: Business Sector
Annual percentage change, national currency



Sources: OECD and NIER.

Diagram 51 Nominal Hourly Cost of Labour: Business Sector
Annual percentage change, national currency



Sources: OECD and NIER.

In summary, it may be noted that labour costs in Sweden have risen more rapidly than in the euro zone and the United States for most of the last 20 years (see Table 12, Diagrams 50 and 51). Table 13, which for particular years presents more reliable figures than Table 12, confirms this picture.

Table 14 Labour Productivity and Employment in the Business Sector

Annual percentage change

	1996	1997	1998	1999	2000	2001	2002	2003
Sverige								
Labour Productivity	1.4	3.9	2.9	1.9	2.4	0.4	2.6	2.7
Employment	0.1	–0.5	1.6	3.2	2.3	0.6	–1.0	0.1
Euro zone								
Labour Productivity	1.1	1.6	1.2	0.9	1.5	0.1	0.5	1.9
Labour productivity in manufacturing	1.4	4.7	1.8	1.2	5.3	1.5	2.2	3.4
Employment	0.5	0.8	1.7	1.8	2.1	1.3	0.4	0.5

Note: For Sweden labour productivity is defined as output per hour; for the euro zone, as output per employee. Employment in Sweden is measured in number of hours; in the euro zone, in number of employees. Labour productivity in manufacturing in the euro zone is based on data for Belgium, France, Germany, Italy, and the Netherlands.
Sources: Statistics Sweden, NIER, and the European Central Bank.

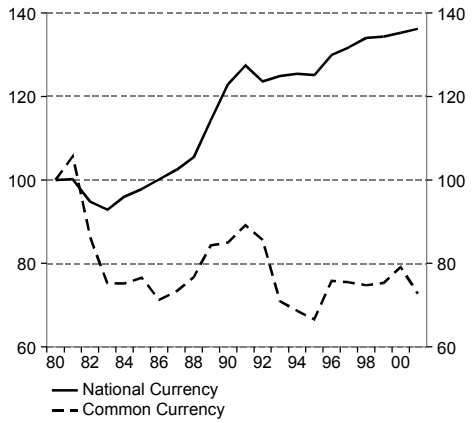
Diagram 52 Labour Productivity: Business Sector
Annual percentage change, 3-year moving average

Note: Labour productivity is calculated as output per hour.
Sources: OECD and NIER.

Diagram 53 Unit Labour Cost: Business Sector
Annual percentage change, 3-year moving average, national currency

Sources: OECD and NIER.

Diagram 54 Unit Labour Cost: Business Sector – Sweden Relative to Euro Zone
Index 1980=100



Sources: OECD and NIER.

Unit Labour Cost, National Currency

Up to this point, the review has provided a somewhat incomplete picture of the development of labour costs, since it has not considered changes in productivity. At a given cost of labour per hour, an increase in labour productivity will translate into a decrease in the cost of labour per unit of output, the so-called unit labour cost.

According to Diagram 52, labour productivity increased more in Sweden than in the euro zone during most of the 1990s. The relatively strong tendency of productivity in Sweden in the past decade is also apparent from a comparison with the US economy. Until 1998 the average annual increase in business-sector productivity was 0.9 percentage points higher in Sweden than in the US. Despite this relatively strong growth in productivity, unit labour costs increased more rapidly in Sweden for most of the 1990s than in the euro zone and the US (see Diagram 53).[8] Though less than in the 1980s, the difference is still substantial (see Table 15).

Table 15 Unit Labour Cost in the Business Sector
Annual percentage change

	1980–2001	1980–1989	1990–1999
Sweden	4.9	7.4	2.3
Euro zone	3.2	5.5	1.3
US	3.3	4.8	1.8

Sources: OECD and NIER

Unit Labour Cost, Common Currency

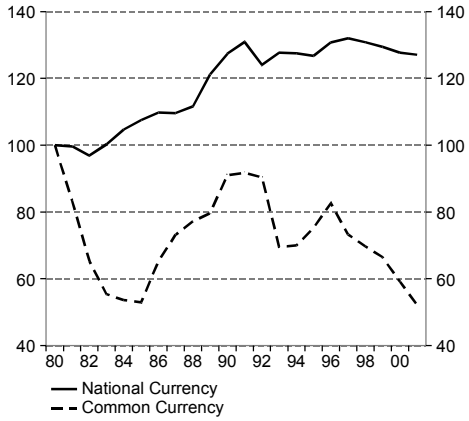
In order to determine how the relative development of labour costs has affected the international competitiveness of Swedish firms, it is also necessary to consider how the exchange rate has changed. Diagrams 54 and 55 compare Sweden's unit labour costs in the business sector to the euro zone and the US, in national and common currencies. Diagrams 56 and 57 provide a comparison for manufacturing. It is apparent that Swedish unit labour costs in national currency have generally risen more rapidly than the corresponding costs in the euro zone and the US. For example, the index of 136 in 2001 compared to the index of 100 in 1980 in Diagram 54 means that unit labour costs have increased by 36 percent more in Sweden than in the euro zone during the past two decades. If exchange rates had remained the same, the cost level would have been untenable for the

[8] Unit labour costs in the euro zone are measured for the five countries for which data are available: namely, Belgium, France, Germany, Italy, and the Netherlands.

Swedish business sector. The increase in costs has thus forced Sweden to devalue the krona repeatedly. The total depreciation has been so great that the relative unit labour costs in the business sector, expressed in a common currency, have fallen from an index value of 100 to value of 72 – that is, by 28 percent – during the period in question. The picture is essentially the same when the comparison is made with the US (Diagram 55) or with the manufacturing sector (Diagrams 56 and 57).

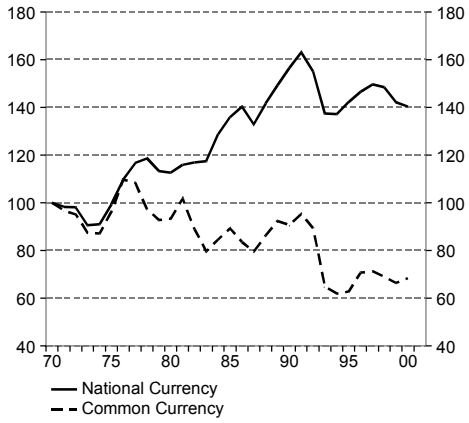
The relatively favourable tendency for Swedish firms is further underscored by the fact that in the 1990s relative export prices in manufacturing did not decrease as much as relative unit labour costs (see Diagram 58). As can be noted, the ratio of Swedish to euro-zone unit labour costs dropped by more than 30 percent, whereas relative prices fell by only about 20 percent. This means that the profit trend in the Swedish manufacturing sector has been comparatively strong.

Diagram 55 Unit Labour Cost: Business Sector – Sweden Relative to US
Index 1980=100



Sources: Bureau of Labor Statistics and NIER.

Diagram 56 Unit Labour Cost: Manufacturing – Sweden Relative to Euro Zone
Index 1970=100



Sources: Bureau of Labor Statistics and NIER.

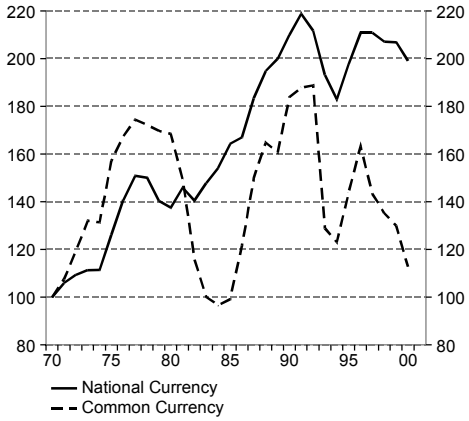
Sweden's Wage and Profit Share

The tendency in relative unit labour costs suggests that Sweden has become more competitive since the 1980s in relation both to the euro zone and to the US. This favourable tendency should have contributed to a rather positive profit trend for Swedish firms. One measure of this tendency is the so-called profit share, defined as the part of value added that goes to the firms in the form of operation surplus – in other words, value added minus labour costs. Operating surplus covers such items as capital depreciation, interest payments, and other costs of capital. Diagram 59 shows the development of the profit share for the Swedish economy as a whole during the period 1960–2001. The profit share rose relatively rapidly at the outset of the 1980s and the 1990s. In recent years, however, it has fallen, a tendency which at the first glance may seem surprising in view of the trend in costs. However, there are a number of possible explanations for this apparent inconsistency.

One is that labour productivity has increased more slowly because of a weaker economy. Slower growth in productivity leads to a lower profit share and a higher wage share (see Diagram 60). However, the relative cost situation of Swedish firms has not been affected, since the international economy has also slackened; in other words, productivity growth has been lower in a number of countries.

Another explanation is that prices of exports have shown a weaker tendency than prices of imports (in other words, the terms of trade have deteriorated). The weak trend in prices of exports is due primarily to plummeting prices of telecommunication products. At the same time, rising oil

Diagram 57 Unit Labour Cost: Manufacturing – Sweden Relative to US
Index 1970=100

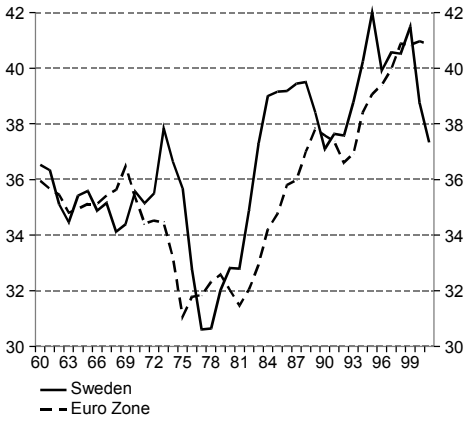


Sources: Bureau of Labor Statistics and NIER.

Diagram 58 Unit Labour Cost and Export Prices – Sweden Relative to EMU 5
Index 1985=100

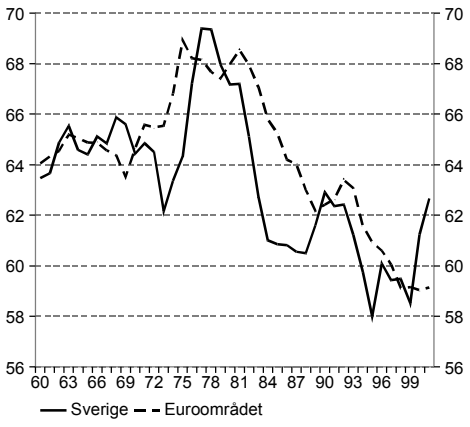
Note: Unit labour costs are for manufacturing, and export prices are for goods and services. EMU5 = Belgium, France, Germany, Italy, and the Netherlands.
Sources: Bundesbank, OECD, Bureau of Labor Statistics, and NIER.

Diagram 59 Profit Share: Economy as a Whole
Percent



Note: Series computed as 1 minus wage share in Diagram 60
Source: EU Commission.

Diagram 60 Wage Share: Economy as a Whole
Percent



Source: EU Commission.

prices have pushed up prices of imports. Both falling prices of exports and rising prices of imports lead to a decrease in nominal value added, which in turn depresses the profit share.

Yet another factor may have affected the development of the terms of trade: changes in exchange rates may have had a different impact on prices of exports than on prices of imports. With a weakening exchange rate, prices of imports in national currency will normally increase more than prices of exports. This deterioration in the terms of trade may be partly related to the time lag before export firms that sell in Swedish currency obtain full compensation by raising the prices of their own products. The effect may be accentuated if firms focus on gaining market share – in other words, if they deliberately let their prices in foreign currency decrease.

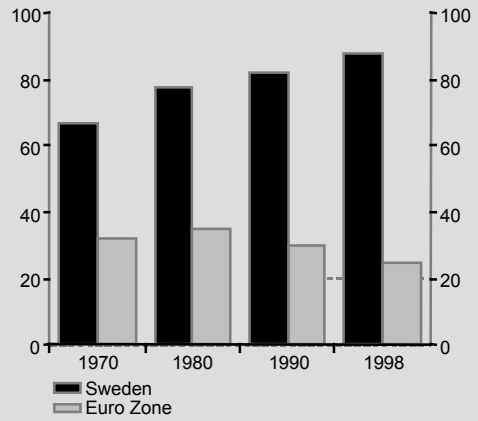
In summary, there may be a number of reasons why the profit share has fallen in recent years despite a relatively favourable cost trend. A more general conclusion is that the relationship between the profit share and labour costs is not always a simple one. Changes in the terms of trade, for example, may be quite significant in this connection.

Wage Formation in Europe

In this box, wage formation in Europe is described in some detail, since it is important to Sweden, whether inside or outside the monetary union. Sweden's international competitiveness is highly dependent on the development of Swedish wage costs in relation to those abroad. If Sweden joins the EMU, the single currency will mean that the rate of wage increases in Sweden in relation to the rate elsewhere in the euro zone will be fully reflected in relative costs. Thus, wage formation in Europe will become an even more significant factor in Swedish wage formation than if Sweden does not join the monetary union.

Wage formation in Europe varies from country to country, and it is difficult to discern a common European system. National traditions, historical development, and the capacity to manage disturbances have set their imprint on wage formation in different countries. A distinguishing feature of Sweden, for example, is the representative character of its labour-market organizations; this statement applies to both employer and employee organizations.

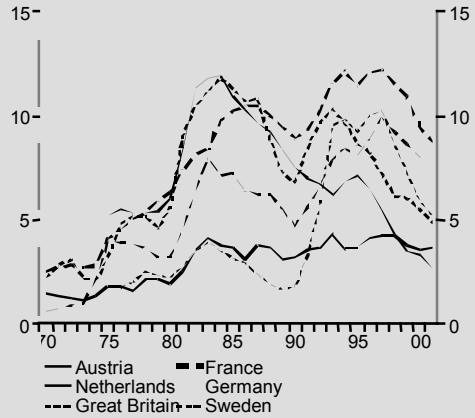
Diagram 61 Trade Union Density
Percent of labour force



Source: See Table 16.

The general picture in Europe is that the degree of employee organization, the trade union density, decreased in the 1980s and 1990s, with the exception of the Nordic countries and Belgium (see Table 16 and Diagram 61). This decrease coincided with a period of very high unemployment (see Diagram 62), which appears to have made it more difficult to maintain the number of union members. In Sweden about 90 percent of employees are currently organized in unions. In Finland and Denmark the degree of organization is almost as high, whereas it is somewhat lower in Norway. Among the countries with the lowest degree of organization are Spain, France, the United Kingdom, and the Netherlands.

Diagram 62 Unemployment
Percent of labour force



Source: OECD.

Table 16 Trade Union Density
Percent of the labour force

	1970	1980	1990	1998
Austria	57	52	47	39
Belgium	42	53	50	-
Denmark	63	78	75	76
Finland	51	69	73	79
France	20	22	14	10
Germany	32	35	32	26
Greece	-	36	34	-
Ireland	53	57	53	42
Italy	37	50	39	38
Netherlands	37	35	24	23
Norway	50	55	56	55
Portugal	-	52	40	-
Spain	-	8	11	16
Sweden	**67**	**78**	**82**	**88**
Switzerland	30	31	27	22
United Kingdom	45	51	38	30
Euro zone	**32**	**35**	**30**	**25**

Note: the figures for the euro zone are an average of the degree of organization in the different countries weighted according to each country's share of the total number of persons employed in the euro zone.
Sources: Table 2.1 in *The Role of Unions in the Twenty-First Century*, Oxford University Press, 2001 and OECD, Labour Market Statistical Database.

As for employers, the degree of organization is highest in Austria, where membership in an employer association is compulsory. The degree of organization is also high in Germany, the Netherlands, and the Nordic countries.

One measure of the importance of the collective bargaining agreements reached by unions is their degree of coverage. The degree of coverage indicates the proportion of the labour market covered by collective bargaining agreements (see Table 17 and Diagram 63). In most European countries, collective bargaining agreements include 70–90 percent of the total number of employees and have done so for the past 20 years.[9] Thus, the differences in degree of coverage are minor despite substantial variation in union density. One conclusion is that even though the unions are losing members, collective bargaining agreements continue to play a significant role in wage formation in Europe. An exception is the United Kingdom, where both union density and the degree of coverage decreased in the 1990s.

Table 17 Degree of Coverage by Collective Bargaining Agreements

Percent of total number of employees covered by agreements

	1980	1990	1994
Austria	-	98	98
Belgium	-	90	90
Denmark	-	69	69
Finland	95	95	95
France	85	92	95
Germany	91	90	92
Italy	85	83	82
Netherlands	76	71	81
Norway	-	75	74
Portugal	70	79	71
Spain	-	76	78
Sweden	**-**	**86**	**89**
Switzerland	-	53	50
United Kingdom	70	47	47
Euro zone	**86**	**86**	**88**

Note: the figures for the euro zone are an average of the degree of coverage in the different countries weighted according to each country's share of the total number of persons employed in the euro zone.
Source: OECD, Labour Market Statistical Database.

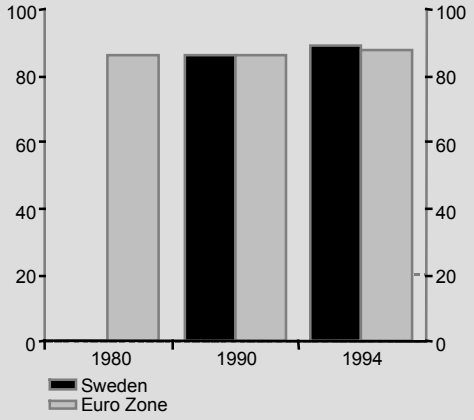
[9] A study recently published in Germany shows that the proportion of employees covered by some form of collective bargaining agreement has dropped to about 70 percent in the former West Germany and to 55 percent in the former East Germany.

The degree of co-ordination in collective bargaining is significant both for the level of wages and for the sensitivity of wages to macroeconomic disturbances (see the box captioned " The EMU and Co-ordination of Wage Formation"). A distinction should be drawn between formal centralization and *de facto* co-ordination. Through a variety of mechanisms, *de facto* co-ordination can take place between formally independent parties. These mechanisms, which include the establishment of norms and nonbinding recommendations from central organizations and governments, produce consensus on wage increases. In many countries (including Sweden, Austria, and Germany), wage formation is influenced by the settlements reached in one particular area of the labour market, usually the manufacture of engineered products, which thus sets the standard for wage increases. In Sweden the agreement in manufacturing and equivalent agreements in other sectors can be regarded as the framework for *de facto* co-ordination.

Table 18 shows an index of the degree of *de facto* co-ordination in collective negotiations. The index varies from zero to one. If all negotiations are conducted at the firm level, the index is zero. If wage negotiations are fully co-ordinated on a nation-wide basis, the index is one. Thus, if negotiations takes place at the industry level, the index lies somewhere between zero and one.

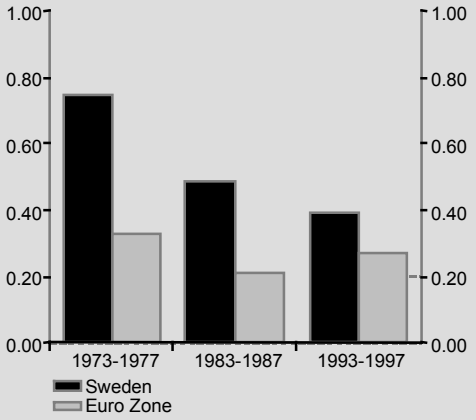
Diagram 63 Degree of Coverage by Collective Bargaining Agreement

Percent of total number of employees covered by existing agreements



Source: See Table 17.

Diagram 64 Degree of Co-ordination in Collective Bargaining
Index – average for three periods



Source: See Table 18.

Table 18 Degree of Co-ordination in Collective Bargaining
Index – average for three periods

	1973–77	1983–87	1993–97
Austria	0.82	0.62	0.65
Belgium	0.52	0.31	0.42
Denmark	0.64	0.47	0.34
Finland	0.64	0.58	0.47
France	0.10	0.07	0.08
Germany	0.35	0.26	0.24
Ireland	0.37	0.27	0.76
Italy	0.38	0.11	0.32
Netherlands	0.34	0.45	0.39
Norway	0.42	0.43	0.42
Portugal	0.22	0.23	0.28
Spain	0.40	0.22	0.34
Sweden	**0.75**	**0.49**	**0.39**
Switzerland	0.21	0.20	0.19
United Kingdom	0.37	0.18	0.14
Euro zone	**0.33**	**0.21**	**0.27**

Note: the co-ordination index is an aggregate index that reflects both the relative importance of the level at which negotiations are held (firm, industry, and nationwide agreements) and the proportion of the union members organized in a particular union. The index varies between 0 and 1. The figure for the euro zone is an average of the degree of co-ordination in the different countries weighted according to each country's share of the total number of persons employed in the euro zone.
Sources: Calmfors, L., A. Booth, M. Burda, D. Checchi, R. Naylor and J. Visser, "The Future of Collective Bargaining in Europe" in *The Role of Unions in the Twenty-First Century*, 2001 and Visser, J., "A Combined Indicator of Union Centralisation and Coordination", Amsterdam Institute for Advanced Labour Studies, Working Paper 2000/3.

As shown in Table 18 and Diagram 64, the degree of co-ordination was generally lower in the 1990s than in the 1970s. The change was particularly noticeable in the UK, where firm-level negotiations totally predominate and the influence of the unions has diminished. In addition, the right of unions to take industrial action has been restricted, and conditions in the UK are becoming increasingly similar to those in the US.[10]

The negotiating systems in the Nordic countries have certain features in common, such as a high union density, but there are also a number of significant differences. In Sweden there has been an extensive decentralization of collective bargaining towards the industry level. In Denmark agreements are reached only on minimum wages at the industry level, and companies have greater freedom to deviate from them. In Finland there are frequent incomes-policy agreements between the central government and employer and employee organizations; such agreements are not normally found in the other Nordic countries.

The German economy is the largest in Europe in terms of GDP. Therefore, the development of wages in Germany serves to a large extent as a standard for competing countries. Negotiations are held at the industry level for each "land," or state, of the Federal Republic but are co-ordinated by the central organizations. After reunification, agreements have included so-called "exit clauses", which in certain situations allow an individual company to settle on wage increases different from those negotiated at a more central level. Similar clauses are also found in Spain. In France wage formation is characterized by conflicts and legal intervention rather than collective bargaining. Unions are weak, and negotiations primarily takes place at the company level. In the Netherlands negotiations fea-

[10] Information for each state, or land, is taken principally from *Ekonomisk utveckling, arbetsrätt och förhandlingssystem* [Economic Development, Labour Law, and Negotiating Systems] , Fritzes, Stockholm, SOU 1998:141, Ferner, A. and R. Hyman, *Changing Industrial Relations in Europe*, Blackwell Publishers, Oxford, 1998, and Calmfors, L., "EMU:s effekter på lönebildningen"[Effects of the EMU on Wage Formation], Appendix 2 of *Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16.

ture a procedure of institutional consultation through a national body; this procedure plays a central part in co-ordinating wage formation. The wages of most employees are set by collective agreement at the industry level, but there are collective agreements at the company level as well. A spirit of consensus is also typical of wage formation in Austria, where there is extensive co-operation in wage negotiations.

When the focus shifts to changes in the degree of co-ordination from the 1980s to the 1990s, the decentralization trend is less clear. In fact, during this period, several countries (including Austria, Belgium, France, and Spain) returned to somewhat more centralized wage negotiations (see Table 18). In the past year, wage formation in Germany has also shown signs of an increasing degree of centralization. In 2001 five unions in the services sector merged to form a single union, which is now one of the largest in the world.

Another aspect of wage formation is the duration of the collective agreement. This factor influences the flexibility of nominal wages, for example (see Chapter 6). In many countries of continental Europe (such as Germany, Austria, the Netherlands, and Belgium), but also in Denmark and the UK, agreements were reached annually in the 1980s. In the 1990s, there was a tendency in several of these countries toward longer-term agreements, which limited flexibility in nominal wages (see Table 19). One factor affecting the duration of a collective bargaining agreement is the rate and variability of inflation. A lower and steadier inflation rate is favourable to longer-term agreements, since it is then not necessary to change nominal wages so often.[11] The lengthening duration of agreements in these countries in 1990s coincided with a decrease in the rate and variability of inflation (see Diagram 65).

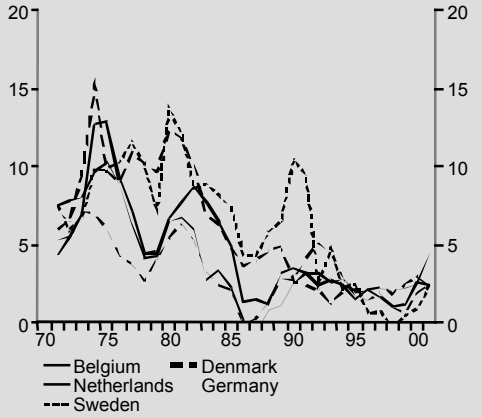
Table 19 Degree of Flexibility in Nominal Wages Based on the Duration of Wage Agreements

Index for two periods

	1980s	1990s
Austria	2	2
Belgium	2	1
Denmark	2	1
Finland	1	1
France	1	2
Germany	2	1
Italy	0	0
Netherlands	2	1
Norway	1	1
Spain	1	1
Sweden	1	1
Switzerland	0	0
United Kingdom	2	2

Note: The index varies between 0 and 2. A value of 0 signifies agreements of three years or longer; a value of 1, agreements for one to three years; and a value of 2, agreements for one year or less.
Sources: Bruno, M. and J. Sachs, Economics of Worldwide Stagflation, Blackwell Publisher, Oxford, 1985 and Groth, C. and Å. Johansson, "Bargaining Stucture and Nominal Wage Flexibility", IIES Seminar Paper No. 709, 2002.

Diagram 65 Consumer Price Inflation
Annual percentage change



Sources: NIER and national sources.

Flexibility in nominal wages can also be achieved by indexing wage levels during the duration of the collective agreement (see Chapter 6, Ways To Achieve Greater Wage Flexibility). In the 1970s, indexation to the consumer price index was common in many countries. During this decade, however, most countries suffered from negative supply shocks. Indexation of wages made it more difficult to achieve downward adjustments in real wages. This drawback may

[11] See, for example, Ball, L., G. Mankiw and D. Romer, "The New Keynesian Economics and the Output-Inflation Trade-off", *Brookings Papers on Economic Activity*, 1, 1988.

be one reason why these indexation clauses were abandoned in the 1980s. EU countries where indexation is still used include Belgium, Finland, Luxembourg, and Spain, all of which are members of the EMU. The question whether EMU membership may lead to a higher degree of indexation has been studied theoretically, and support has been found for the hypothesis that EMU membership increases the incentives for more nominal wage flexibility.[12] In recent years, a larger element of wage indexation has been observed in Spain and reintroduced in Finland after the establishment of the monetary union.[13]

In several European countries, wage inequalities have widened during the past 20 years (see Table 20). One measure of the wage inequality is the wage ratio between different income groups.[14] As shown in Table 20, wage inequalities increased relatively more at upper income levels. Wage inequality tends to be lower with centralized than with decentralized negotiations.[15] Thus, one reason for the increase in wage inequalities may be the decentralization of collective bargaining in the past 20 years.

Table 20 Wage Inequality Measured as the Ratio Between Wages at Different Income Percentiles

	high/low wage	high/median wage	median/low wage
Finland			
1980	2.47	1.65	1.49
1990	2.49	1.70	1.47
1999	2.36	1.69	1.40
Netherlands			
1980	2.54	1.60	1.58
1990	2.62	1.66	1.57
1999	2.92	1.76	1.66
United Kingdom			
1980	2.98	1.70	1.75
1990	3.41	1.86	1.84
2000	3.40	1.90	1.79
Sweden			
1980	2.03	1.57	1.30
1990	2.01	1.52	1.32
1998	2.22	1.62	1.37
France			
1980	3.25	1.93	1.69
1990	3.26	1.99	1.64
1998	3.05	1.92	1.58
Germany			
1984	2.88	1.69	1.70
1990	2.76	1.71	1.61
1998	3.04	1.85	1.63

Note: High/low wage refers to the ratio between gross earnings at the 90th percentile and at the 10th percentile; high/median wage, to the ratio between gross earnings at the 90th percentile and at the 50th percentile; and median/low wage, to the ratio between gross earnings at the 50th percentile and at the 10th percentile.
Source: OECD.

In summary, wage formation in Europe features a decreased trade union density, but the degree of coverage by collective agreement remains very high. The degree of co-ordination declined from the mid-1970s to the mid-1980s but rose somewhat thereafter, although not to the Swedish level. It is unclear whether the increase is related to the transition to a monetary union, The degree of flexibility in nominal wages has been reduced somewhat by agreements of longer duration but has also been increased by elements of wage indexation in a number of countries in the monetary union. The latter may in some sense be interpreted as an adjustment made on account of the monetary union.

[12] See, for example, Calmfors, L. and Å. Johansson, "Nominal Wage Flexibility, Wage Indexation and Monetary Union", IIES Seminar Paper, No. 716, Stockholm University, 2002 and Leichter, J., "Optimal Wage Indexation for a Monetary Union with Country Specific Shocks", Working Paper 400, Department of Economics, Santa Cruz, 1998.

[13] In Finland there is also a greater element of profit sharing in wage formation, another way to achieve nominal wage flexibility. It may also be viewed as a step toward more decentralized wage formation.

[14] This measure is taken from the OECD and refers to the ratio between the gross earnings of full-time employees at the 90th percentile and at the median, between the gross earnings at the 90th percentile and at the 10th percentile, and between the gross earnings at the median and at the 10th percentile.

[15] See Wallerstein, M., "Wage-Setting Institutions and Pay Inequality in Advanced Industrial Societies", *American Journal of Political Science*, 43, 1999.

5 Swedish Wage Formation in the EMU

The question of Swedish membership in the monetary union will be put to a referendum. It appears quite probable that Sweden will join the monetary union, and in the two scenarios presented below for the development of the economy from 2004 to 2010, it is assumed that the country takes this step.[16] In these scenarios, it is assumed that a referendum in 2003 results in a "yes" vote for entering the monetary union, and further that Sweden joins the ERM2 exchange rate mechanism at the outset of 2004 and becomes a full member of the EMU on January 1, 2005. These events presuppose, however, that the EU is willing to accept Sweden's participation in the ERM2 for a period shorter than the stipulated two years. Such an exception has been made previously, for Finland, for example.

Alternative timetables for joining the EMU are also conceivable. For example, Sweden may not be granted dispensation from the rule that a candidate country's national currency must have been part of the ERM2 for two years. In that case, an alternative date of accession might be January 1, 2006. However, this difference does not substantially change the basic assumptions for the analysis. The essential point is that the exchange rate will be fixed once Sweden joins the ERM2 at the outset of 2004.

One important question in connection with changing the system of monetary policy is the following: under what circumstances do a country's monetary and exchange-rate policies have a significant impact on the country's *real* economy? It is commonly held that monetary and exchange-rate policies make a difference in output and employment in the short run but not in the long run. If prices and wages do not immediately adjust (in other words, if there are elements of so-called nominal inertia), changes in *nominal* variables, including monetary policy and the nominal exchange rate, will lead to changes in relative prices and real wages. These changes in real prices affect aggregate demand in the economy and thus output and employment. In the long run, however, prices and wages will adjust; thus, there will be no lasting change in real and relative prices, or in output or employment, either. Accordingly, changes in monetary and exchange-rate policy will have only short-run real effects.[17]

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[16] Last year's report presented different scenarios to show the economic conditions for wage formation with continuation of a floating exchange rate.

[17] However, the basic assumption – that the realignment of monetary and exchange-rate policy entailed by EMU membership does not affect the long-run development of the Swedish economy in real terms – is not totally self-evident. One important consideration in this regard is the

One important consequence of EMU membership is that mechanisms which previously helped to maintain balance in the economy – domestic monetary policy and adjustments in the nominal exchange rate – are no longer available. For example, with Sweden a member of EMU, the Riksbank will no longer be able to react by raising interest rates to dampen economic activity if Swedish wage increases are too high, or to stimulate the economy after a slump in demand that affects only Sweden. Nor will it any longer be possible to adjust the exchange rate to help stabilize the economy. If nominal wages become more flexible as a result of Sweden's joining the monetary union this would at least partly compensate for the loss of the country's own monetary policy and exchange rate as mechanisms of economic stabilization. If, for example, there is a more rapid downward adjustment in nominal wages after a drop in demand, cost levels and prices will be reduced, and demand can rise again.

As noted in the preceding chapter, Swedish cost levels are now relatively favourable compared to those in the euro zone. The tendency in 2002–2003 is not expected to change this picture significantly. In addition, various calculations of the long-term equilibrium exchange rate of the Swedish krona indicate that there is a margin for strengthening the krona without reducing the profit share to an untenably low level. Consequently, it is assumed that the krona will be linked to the euro at a rate somewhat stronger than the current one. The central rate of the krona in the ERM2 and the conversion rate on accession to the monetary union will ultimately be set in negotiations between Sweden and the other EU countries. In the scenarios presented below, both the central rate and the conversion rate are assumed to be SEK 8.80 to the euro. The krona is expected to appreciate to a level near the conversion rate before Sweden joins the ERM2 at the outset of 2004, and thereafter to remain largely stable against the euro until the country enters the monetary union.

As mentioned previously, the assessment is that the dollar will in time depreciate as the US economy adjusts in response to its massive current account deficit.

Even though the krona is linked to the euro at a stronger nominal rate than the current one, and even though the euro is expected to strengthen against the dollar in the long run, prices of exports can be increased further in relation to prices of imports and prices of euro-zone exports without

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effect on wage formation and the labour market. If the impact on wage formation is a change in the equilibrium unemployment rate – that is, the unemployment rate compatible with constant increases in prices and wages – there will also be long-term changes in the unemployment rate, employment, and the level of GDP. This possibility is discussed in the box captioned "The Long Term Effects of the EMU on Real Wages and Employment".

overly diminishing the surplus on current account.[18] Thus, there is also some room for increasing labour costs in relation to those in the euro zone without reducing profits to an unsustainably low level. Consequently, Swedish labour costs can increase somewhat more rapidly than those in the euro zone for a transitional period. Rising prices of Swedish exports will in turn help prevent an untenable reduction of business profits. With the temporarily rapid rise in labour costs, there will be somewhat larger increases in both product prices and consumer prices than in the euro zone. The process will entail gradual adjustment toward long-term balance in costs and in the competitive situation. However, this assessment is very tentative and is based on factors like the current appraisal of the competitive situation and the economic tendency in the years ahead.

As described above, the change in the system of monetary policy is assumed not to affect the real level of output, wages, and other such items in the long run. This means that the real equilibrium exchange rate – that is, the long-term relationship between Swedish and foreign prices expressed in a single currency – will be the same whether or not Sweden joins the monetary union. Thus, the expected appreciation in real terms after Sweden joins the EMU would occur even if Sweden remained outside the monetary union. One important difference, however, is that strengthening the nominal rate of exchange against the euro zone cannot contribute to this process if Sweden becomes a member of the EMU. Instead, the appreciation in real terms will take place in another way: during a period of adjustment, Swedish prices and wages will increase more than those in the euro zone, and also more rapidly than if Sweden remains outside the monetary union.

For several reasons, wage formation will be of central importance if Sweden joins the EMU. From the standpoint of the economy, it is desirable that wage formation be given a larger role in attenuating economic fluctuations once the country can no longer resort to its own monetary policy or adjust its nominal exchange rate for this purpose. At the same time, according to the reasoning above, wage formation together with price formation must take over the function of the nominal exchange rate as a mechanism for establishing equilibrium in relative costs and the real exchange rate.

To illustrate the importance of wage formation after Swedish accession to the EMU, this report presents two scenarios with different assumptions concerning wage for-

[18] For an analyis of the real equilibrium exchange rate, see the box captioned "Calculations of the Real Effective Equilibrium Exchange Rate" in *The Swedish Economy – March 2002* and Nilsson, K., "Do Fundamentals Explain the Behaviour of the Real Effective Exchange Rate?", Working Paper No. 78, 2002, NIER.

mation in 2004-2005. In the main scenario, it is assumed that the tendency in wages and in other prices leads to gradual adjustment toward long-term macroeconomic balance. Long-term equilibrium is characterized by an unemployment rate equal to the equilibrium unemployment rate, inflation equal to the inflation target, return on capital equal to the internationally determined rate of return on capital, and a degree of capital intensity – that is, the capital stock in relation to the number of hours worked – appropriate to this rate of return. If these requirements are fulfilled, relative costs in Sweden will be at a level that can be sustained in the long run.

The other scenario shows the development of the economy if increases in Swedish labour costs are greater than in the main scenario. A comparison of the two scenarios thus illustrates how the Swedish economy will adapt to excessive increases in labour costs if Sweden is a member of the EMU.

Long Term Effects of the EMU on Real Wages and Employment

Participation in the monetary union can have two different effects on wage formation:

- It can influence the *average wage level in relation to the price level over an economic cycle* (the equilibrium real wage). The average level of real wages over an economic cycle is a central determinant of output, employment, and unemployment (equilibrium output, equilibrium employment, and equilibrium unemployment).

- It can change the *flexibility of wages and labour costs*. This flexibility has a substantial impact on the ability of the economy to manage various macroeconomic disturbances and on the degree of fluctuation in output and employment around their long-term equilibrium levels.

This box provides a survey of current research on the first of the two effects. The effects of the EMU on wage flexibility are analysed in Chapter 6.[19]

EMU membership can affect wage determination by influencing the parties on the labour market to *change their behaviour* within the existing institutional framework of the labour market, and also by leading to *institutional changes* – for example, the Government and Parliament may decide to change the rules applicable to the labour market.

Changes in Behaviour Within the Existing institutional Framework

Concerning possible changes in behaviour, two main arguments, leading to mutually contradictory conclusions, have been advanced. The first argument is based on the assumption that EMU membership will increase competition on product markets, whereas the second argument focuses on the interaction between the parties on the labour market and the Riksbank.

Greater competition on product markets can follow as the use of a single currency decreases transaction costs and exchange-rate risks in international business, thus leading to more trade and more foreign direct investment, as well as facilitating price comparisons between different countries. Since wage costs are a significant element of product prices, more price-sensitive demand will increase wage sensitivity in the demand of the individual firm for labour. Greater wage sensitivity in the demand for labour will increase the incentive for restraint in wage formation, thus raising equilibrium employment and reducing the equilibrium unemployment rate.

However, it is far from obvious that EMU membership will increase competition and thereby lead to lower real wages and higher employment on average over the economic cycle. In the chain of reasoning, there are several links where the research findings are not fully clear. For example, a common currency may in fact not lead to greater integration with more foreign trade, although research appears to be leaning increasingly toward that conclusion.[20] Moreover, increasing integration could make it easier for multinational firms to achieve market dominance, thus reducing competition instead of increasing it.

[19] Both this box and Chapter 6 essentially provide a summary of the more thorough review in Calmfors, L., ”EMU:s effekter på lönebildningen”, Appendix 2 of *Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16. An underlying assumption in the analysis is that the system of wage formation can affect the level of real wages, which is not the case in the long run in the conceptual framework otherwise used in this report.

[20] Certain empirical studies (e.g. Glick, R. and A. K. Rose, ”Does a Currency Union Affect Trade? The Time Series Evidence”, *European Economic Review*, 46, 2002) suggest that a common currency has substantial positive and statistically significant effects on foreign trade, whereas other studies (e.g., Persson, T., ”Currency Unions and Trade: How Large is the Treatment Effect?” *Economic Policy*, 16, 2001) do not find any statistically significant correlation.

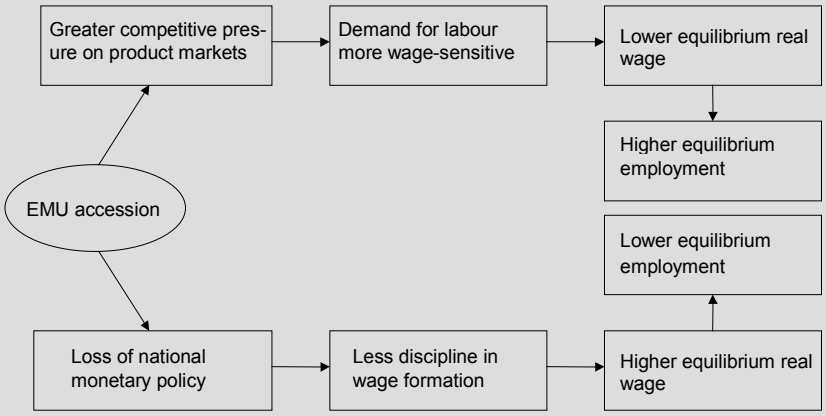
Much remains to be established empirically concerning the interrelationship of EMU membership, integration, competition, and wage formation. At present, therefore, it is difficult to evaluate the argument that a single currency will lead to increased competitive pressure, with a restraining effect on wage determination and a positive impact on employment.

Another argument, which has been advanced recently, focuses on the interaction between the parties on the labour market and the Riksbank. According to this argument, EMU membership would actually lead to *less* restraint in wage formation and thus to a higher level of real wages and to lower employment on average over an economic cycle. In other words, the implications are quite contrary to those of the argument that competition will increase.

The fundamental assumption is that a central bank like the Riksbank, which independently pursues a monetary policy with a targeted level of inflation, has a restraining effect on the process of wage formation within a country. If wage increases are high enough to threaten the inflation target, interest rates will be promptly raised, thus curbing economic activity and increasing the unemployment rate. Realizing that the Riksbank will take such action, the parties of collective bargaining avoid excessive wage increases. If Sweden joins the EMU, such increases will no longer lead to the same monetary-policy response. An incentive for restraint in wage formation will thus be gone, with a consequent risk of higher real wages and lower employment.[21]

Figure 1 summarizes the above arguments on the possible effects of EMU membership on wage-formation behaviour – increased competitive pressure on product markets, on the one hand, and the loss of a national monetary policy, on the other. Since the two effects work in opposite directions, the overall effect of EMU accession on the equilibrium real wage and equilibrium employment will depend on which effect predominates. Current research provides no conclusive answer to this question.

Figure 1 Effects of EMU Membership on Employment and the Level of Real Wages



[21] In the opinion of many economists, the hypothesis that a national central bank functions as a deterrent is reasonable, and EMU membership entails a risk of less discipline in wage formation (see for example Calmfors, L., "EMU:s effekter på lönebildningen", Appendix 2 of *Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16, and Andersson, D., statement on this same study).

Institutional Changes

EMU membership can also affect wage formation *indirectly* through various types of changes in the institutional framework of the labour market. In the discussion below, the emphasis is on the political incentives for the Government and Parliament – according to existing research – to reform various regulatory systems in order to achieve a low equilibrium employment rate. Such reforms might cover, for example, unemployment insurance, the rules of collective bargaining, and legislation on employment security. Roughly speaking, research is based on the assumption that the incentives for various labour-market reforms are determined in a political trade-off between high real wages and extensive protection against unemployment for employees (the "insiders"), on the one hand, and achieving high employment in the economy as a whole, on the other.

There are several mechanisms through which EMU membership could affect the incentives for implementing labour-market reforms. A frequent argument in the debate on economic policy is that EMU membership would strengthen the incentive for reforms since there would be no other way to combat unemployment.[22] This argument is questionable on several grounds. First, it appears to be based on the view that a national monetary policy provides more ways to achieve a lasting increase in employment through expansionary measures. However, it is unlikely that the current inflation-target policy will be abandoned if Sweden chooses to remain outside the monetary union, nor are there grounds to believe that a generally more expansionary monetary policy would lead to permanently higher levels of employment. Second, one can reason along opposite lines, arguing that if policy-makers are nevertheless tempted to follow an inflationary policy outside the EMU, labour-market reforms that lower the equilibrium unemployment rate would lessen the temptation. Thus, according to this argument, the incentive for reform may be *stronger* if Sweden remains outside the monetary union.

One can also speak of *risk limitation* in labour-market reforms. If fluctuations in employment increase with EMU membership because there is no longer a national monetary policy to stabilize the economy, unemployment will probably be very high in certain periods. The higher the equilibrium unemployment rate – that is, the higher the level around which the unemployment rate fluctuates – the greater the risk that unemployment will sometimes attain levels that society considers unacceptable.[23] Labour-market reforms that lower the average level of unemployment would reduce the risk of such truly undesirable outcomes.

However, the argument of risk limitation may also be taken to the opposite conclusion. If EMU membership means greater fluctuation in the economy, there may be more demand for *social-security systems and labour-market regulations* that protect individuals from the consequences. Increased competitive pressure from abroad could have the same effect.

It is also possible to take the previously discussed arguments in favour of direct changes in wage-formation behaviour – the "deterrence argument" and the "competition argument" – as a basis for analyzing possible changes in the political incentives for labour-market reforms with EMU membership. If the Riksbank no longer can provide a deterrent, one incentive for restraint in wage formation will disappear. In this scenario real wages may be raised permanently, with a higher equilibrium unemployment rate as a consequence. Labour-market reforms that would help to lower the equilibrium unemployment rate could counteract such a tendency, thus "compensating" for possible loss of discipline in wage formation in the absence of a national monetary policy.

Similarly, it can be maintained that with increased pressure from foreign competition,

[22] This has sometimes been called the *TINA argument* (TINA = There Is No Alternative), in reference to the reforms implemented in the UK by Margret Thatcher in the 1980s on the ground that there was no credible alternative way to reduce unemployment.

[23] The EMU Study (*Sverige och EMU*, SOU 1996:158) advised against Sweden's joining the monetary union in the first round in 1999. One main reason for this recommendation was
the fear that in the event of a negative economic disturbance the unemployment rate would rise even further above the high level of unemployment prevailing in the mid-1990s.

which lowers the level of real wages and increases equilibrium employment, there will be less need for reform, since unemployment will be decreasing anyway. However, labour-market reforms that lower wage levels could also be used as a ”response” to the employment consequences of increased competition from abroad; in other words, reforms could serve as a kind of competitive weapon. According to some analysts who oppose reforms to increase incentives for restraint in wage formation, there is a risk of a “race for the bottom,” in which the euro countries compete in deregulating their labour markets.

Finally, the political incentive to enact labour-market reforms may well be related to the speed at which they can be expected to produce results. The interaction with stabilization policy can be an important factor in this respect. If reforms are implemented when aggregate demand is low, it may take some time before there is any noticeable positive impact on employment. One explanation may be that reforms depress the level of real wages. If aggregate demand is low, the adjustment in real wages may take some time. The reason, as previously noted, is that nominal wages tend to resist downward change, and that there is scepticism toward limiting increases in nominal wages.

Outside the EMU, any labour-market reforms will be co-ordinated naturally with demand policy given that the national monetary policy is focused on an inflation target. Reforms that tend to hold down the rate of increase in wages and prices will lead the central bank to stimulate demand and to maintain the level of inflation by lowering the interest rate. This process facilitates adjustment in real wages, which to a lesser degree must take place in the form of very modest increases in nominal wages for a transitory period. In the EMU, the European Central Bank formulates monetary policy according to the situation in the euro zone as a whole. Thus, labour-market reforms in a particular country that reduce the rate of domestic price and wage increases need not lead to a monetary-policy response of the kind which according to the reasoning above would speed up adjustment in real wages. As a result, this adjustment may take much longer, and the positive effects on employment may not be felt for some time. Given the possibility of achieving a more rapid effect on employment if the country is outside the EMU, it may be politically easier in that case to implement labour-market reforms.

In summary, there are a number of different ways in which EMU membership could affect the incentive for the Government and Parliament to legislate changes in the institutional framework of the labour market. The effects, however, work in different directions, and it is difficult to weigh the various arguments against each other. Contrary to what is often maintained, it thus cannot be taken for granted that EMU membership will lead to more labour-market reform.

International Conditions

With the recovery of the global economy in 2003, GDP in many OECD countries is expected to approach its potential level. However, in the US, as in Japan, the UK, and the euro zone, resource utilization is forecast to remain low in 2003, with a substantial negative output gap.

The picture of the economic trend in 2004–2010 is summarized in Table 21. As both resource utilization and inflationary pressure increase during 2004 and 2005, official interest rates will be raised. In the euro zone as well as the US, monetary policy is expected to be neutral in 2006, and the output gap is forecast to close in the following year. It is assumed that in the long run the ECB will stabilize inflation in the euro zone at around 1.5 percent. In the US, it is expected that inflation will stabilize at a considerably higher level. In the long run, it is estimated that short-term real interest rates in both the euro zone and the US will be about 3 percent.

Table 21 The International Trend

Annual percentage change and percent

	2002	2003	2004	2005	2006	2007	2008	2009	2010
US									
GDP	2.3	2.8	3.6	3.8	3.6	3.4	3.2	3.1	3.1
CPI	1.5	2.0	2.4	2.5	2.5	2.6	2.6	2.6	2.6
Official interest rate[1]	1.75	2.5	4.0	5.0	5.5	5.5	5.5	5.5	5.5
Euro zone									
GDP	0.9	2.4	2.8	2.8	2.6	2.5	2.4	2.4	2.4
HICP	2.1	1.7	1.7	1.7	1.6	1.6	1.5	1.5	1.5
Official interest rate[1]	3.25	3.75	4.0	4.25	4.5	4.5	4.5	4.5	4.5
OECD 19									
GDP	1.4	2.4	2.9	3.0	2.8	2.7	2.6	2.6	2.5
CPI	1.3	1.5	1.8	2.1	2.1	2.1	2.1	2.1	2.1
Market growth[2]	1.0	6.3	6.4	7.4	7.2	7.0	6.8	6.6	6.5

[1] In December of each year.
[2] For the OECD 14.
Source: NIER.

It is anticipated that the present substantial imbalance in the US economy, with low net lending and massive deficits on current account, will be corrected to some extent by 2010. The gradual improvement in the current account will go hand in hand with continued weakening of the dollar, both against the euro and in effective terms.

As economic growth picks up, international trade will also expand at an increasing rate. The growth of the market for Swedish exports is deemed likely to follow the same pattern. Following an extremely weak tendency in 2001 and 2002, the market for Swedish exports is expected to grow at a healthy rate from 2003 onward.

Table 22 Labour Market in the Euro Zone

Annual percentage change

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cost of labour	3.3	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.5
Employment	0.4	0.5	0.6	0.8	0.7	0.6	0.6	0.6	0.6
Labour productivity									
Entire economy	0.5	1.9	2.2	2.0	1.9	1.9	1.8	1.8	1.8
Manufacturing	2.2	3.4	4.3	3.9	3.7	3.7	3.5	3.5	3.5

Note: Cost of labour refers to hourly cost, employment to the number of persons employed, and productivity to output per employee.
Source: NIER.

Lower GDP growth is expected in the euro zone than in the US and the OECD area as a whole in 2004–2010 (see Table 21). The weaker growth forecast for the euro zone is based primarily on expectations of a more slowly increasing labour supply. It is assumed that employment will increase by 0.6 to 0.8 percent per year (see Table 22). This rate is considerably lower than that the estimate for the US, but much higher than for Sweden. The difference in the growth of employment between the euro zone and Sweden cannot be explained to any significant degree by demographic factors. Rather, the higher growth in employment forecast for the euro zone is based on predictions of an increasing labour force participation rate and a rising retirement age.

It is assumed that in the euro zone the economic upturn for some years will lead to productivity growth above the long-term rate, which is estimated at 1.8 percent for the economy as a whole. Average hours worked are assumed to remain constant. The long-term increase in productivity is lower than in the US but in line with the long-term development of productivity in Sweden. .

The increase in labour costs, both in Sweden and in the euro zone, will be determined in the long run by the ECB's inflation target, which is assumed to be 1.5 percent, and by the long-term increase in labour productivity in the business sector. On the basis of these factors, the long-term rate of increase in labour costs is 3.5 percent. Because of ECB's lower inflation target, the rate is 0.5 percentage points lower than if Sweden remains outside the EMU. Since productivity does not change, however, the increase in wages is the same in real terms. In the short run, too, the annual rate of increase in labour costs in the euro zone is assumed to be about 3.5 percent. In view of this development, in combina-

tion with relatively strong growth in productivity in the next few years, the profit share is expected to increase somewhat in the euro zone.

The Swedish Economy in the EMU, Main Scenario

With Sweden as a member of the EMU, the country's economy will have to be more adaptable, since mechanisms that previously helped to stabilize it – domestic monetary policy and adjustment of the nominal exchange rate – will disappear. In particular, more will be required of wage formation. In the main scenario presented below, it is assumed that wage formation with Sweden in the EMU will lead to gradual adjustment of the Swedish economy toward long-term macroeconomic balance at an equilibrium unemployment rate of 4 percent. This means that wage costs in the scenario will increase at a rate that can be justified by the competitive situation.

Interest Rates and the Exchange Rate

On the assumption that Sweden joins the monetary union at the outset of 2005, the Swedish repo rate will be replaced by the ECB's refi rate (see Table 23). However, during the ERM2 phase, which is assumed to begin in 2004, a certain interest-rate differential remains between the Swedish repo rate and the ECB's refi rate (see Diagram 66).

It is assumed that during 2003 the Swedish krona will strengthen to a level around the central rate of SEK 8.80 to the euro, and thereafter remain generally stable in relation to the euro until Sweden enters the monetary union. Throughout the period until 2010, an appreciation is anticipated in terms of the TCW index, since the euro will be strengthening relative to other currencies, including the dollar (see Diagram 67).

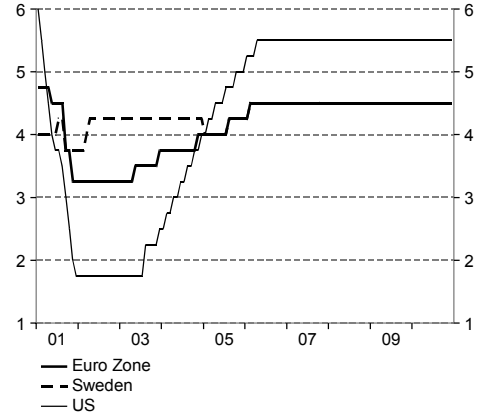
Table 23 Interest Rates and the Exchange Rate, Main Scenario

Percent and index, respectively

	2002	2003	2004	2005	2006	2007	2008	2009	2010
ECB, refi rate	3.25	3.75	4.0	4.25	4.5	4.5	4.5	4.5	4.5
Repo rate	4.25	4.25	4.25	4.25	4.5	4.5	4.5	4.5	4.5
TCW index	132.4	126.2	125.5	125.0	124.5	124.0	123.5	123.1	122.7

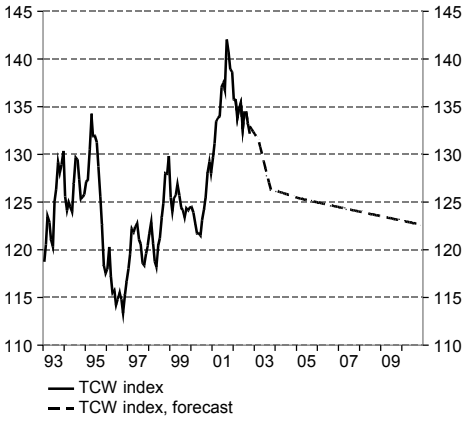
Note: The forecast is for the values in December of each year. The repo rate is replaced by the ECB's refi rate as of 2005.
Source: NIER.

Diagram 66 Official Interest Rates
Percent, monthly values



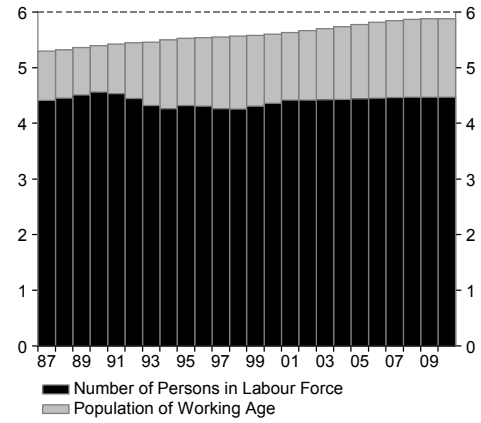
Sources: Riksbank, national sources, and NIER.

Diagram 67 TCW Index
Index November 18, 1992 =100



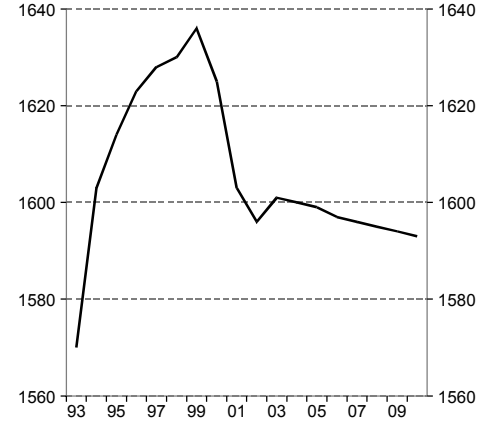
Sources: Riksbank and NIER.

Diagram 68 Labour Supply
Millions of persons



Sources: Statistics Sweden and NIER.

Diagram 69 Average Hours Worked
Hours per Year



Sources: Statistics Sweden and NIER.

Labour Supply

In the population forecast by Statistics Sweden, the working-age population (aged 16–64) will be increasing by 0.5 percent per year at the outset of the period and at a continually diminishing rate after 2007 (see Diagram 68). The working-age population is expected to decrease after 2010; the principal reasons are low nativity and the fact that the large population group born in the second half of the 1940s will begin to retire at this time.

The development of the labour supply is expected to follow a similar pattern but for demographic reasons to be somewhat less pronounced than for the working-age population (see Table 24). The population increase will be concentrated in the oldest population groups, where labour-force participation is normally much lower. At the outset of the period, the labour supply will increase only marginally, and toward the end of the period, there will be no increase at all. The decreasing rate of labour-force participation will also be due in part to the growing number of persons listed as chronically ill or retiring on disability pension. By the end of the period, it is estimated that the increase in these two categories will slacken to the rate consistent with demographic factors.

Average hours worked are forecast to decrease slightly during the period as a result of negotiated reductions in working hours (see Diagram 69). The decrease from 2003 to 2010 is estimated at 0.5 percent. It is assumed in the calculations that there will be no statutory reduction in working hours, since the NIER's forecasts normally presuppose no changes in existing legislation. The increase in the number of hours worked will be limited to about 0.1 percent per year during the period (see Table 24).

The regular-employment ratio for the population aged 20-64 is predicted to drop from 78.2 percent in 2001 to 77.2 percent in 2010. This decrease is based partly on the assumption that wage formation will function in a manner consistent with an equilibrium employment rate of 4 percent.

Wages, Prices, and Unemployment

During 2003 the nominal exchange rate is forecast to strengthen as the krona appreciates rather quickly to about SEK 8.80 per euro. As a consequence, inflation will be curbed somewhat by lower imported inflation. The comparatively favourable competitive situation of the Swedish economy is reflected in the relatively low prices in Sweden *vis-à-vis* other countries – in other words, there will be a margin for appreciation of the krona in real terms. Therefore, relative unit labour costs can rise throughout the

process of adjustment.[24] When the krona is replaced by the euro in 2005, the appreciation in real terms will take the form of a comparatively higher rate of increase in prices and wages in Sweden. Relative costs in manufacturing will rise to about the same level as in 2000 (see Diagram 70), which is considered compatible with a sustainable level of profits. To some extent, this development will be due to firms' raising their prices to obtain compensation. As a consequence, prices to consumers will also rise somewhat faster than they would otherwise. In the long run, however, the development of consumer prices will be determined by the ECB's inflation target. By 2010, both the HICP and UND1X inflation are expected to be in line with the ECB target of an inflation rate below 2 percent. In addition, the tendency in labour costs will approach the rate of increase in the euro zone. The time profile for the development of prices and wages, with more rapid increases early in the period, is consistent with a somewhat more expansionary monetary policy at the outset if Sweden joins the EMU.

Table 24 Labour Market and Prices, Main Scenario

Percentage change

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Cost of labour	4.7	4.2	4.6	4.6	4.5	4.2	4.0	3.9	3.9
Product real wage	2.7	2.0	2.2	1.9	1.7	1.5	1.6	1.6	1.7
Consumer real wage	2.1	2.4	2.6	2.3	2.1	1.9	1.9	1.9	2.0
Labour supply	0.1	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.0
Unemployment rate	4.0	4.3	4.2	4.2	4.2	4.2	4.0	4.0	4.0
Hours worked	–0.4	0.1	0.2	0.2	0.2	0.2	0.2	0.0	–0.1
Labour productivity									
Entire economy	2.0	2.2	2.3	2.1	1.8	1.8	1.8	1.8	1.8
Business sector	2.6	2.7	2.8	2.7	2.3	2.3	2.3	2.3	2.3
Manufacturing	5.5	4.4	4.2	4.0	3.5	3.5	3.5	3.5	3.5
Inflation (HICP)	2.5	1.8	1.9	2.2	2.4	2.3	2.1	2.0	1.9

Note: Cost of labour refers to hourly cost, and labour productivity to hourly output. The product real wage is the cost of labour in relation to product prices (GDP deflator). The consumer real wage is the cost of labour in relation to consumer prices (HICP).
Source: NIER.

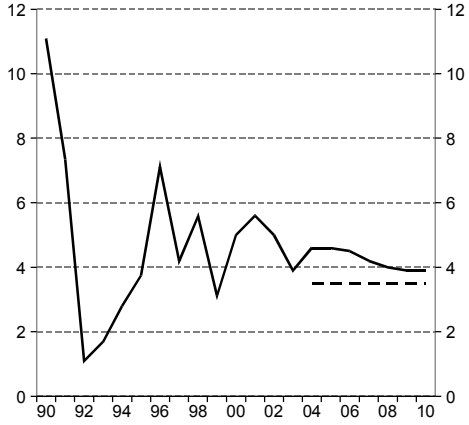
In the main scenario, labour costs rise by 4.6 percent in 2004 and 2005. Later in the period, the rate of increase slackens gradually to 3.9 percent in 2010 (see Diagrams 71 and 72). In the long run, labour costs in Sweden increase at the same rate as in the euro zone, that is, by 3.5 percent. The temporarily higher rate of increase will be due partly to a more rapid rise in Swedish labour productivity in the next few

[24] The unit cost of labour for the euro zone is measured for the five countries for which data are available: Germany, France, Italy, the Netherlands, and Belgium.

Diagram 70 Unit Labour Cost: Manufacturing – Sweden Relative to Euro Zone
Index 1990=100, annual values

Sources: Bureau of Labor Statistics and NIER.

Diagram 71 Cost of Labour: Business Sector
Annual percentage change



Note: Dashed line indicates long-term level.
Sources: Statistics Sweden and NIER.

Diagram 72 Real Wages: Business Sector
Annual percentage change

Note: Hourly cost of labour deflated by product and consumer prices, respectively.
Sources: Statistics Sweden and NIER.

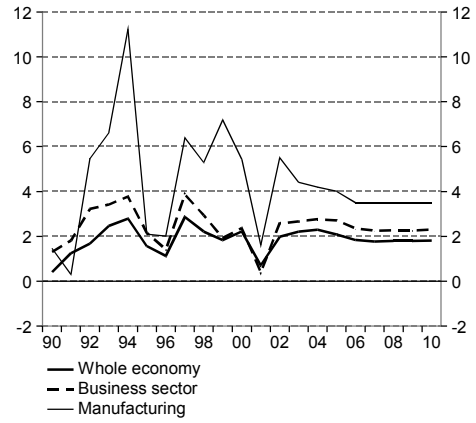
years than in the long run (see Table 24). The main reason, however, is that the real exchange rate appreciates toward long-term equilibrium, resulting in a somewhat higher rate of increase in labour costs during a period of adjustment.

The unemployment rate is 4.2 percent in 2004–2007 and then decreases in 2008 to its equilibrium level of 4.0 percent. Rapidly increasing wages at the outset of the period, which cannot be counteracted by monetary-policy measures or adjustment of the nominal exchange rate, thus contribute to an unemployment rate somewhat above the long-term equilibrium level for a number of years.

Development of GDP and the Composition of Demand

Accession to the EMU on January 1, 2005, is expected to affect the development of the Swedish economy in real terms for a transitory period. In the long run, when relative prices and relative wages have adjusted, it is assumed that real economic effects, on GDP and employment, for example, will be negligible. Lasting effects will be noted only in the nominal values of such items as prices and wages.

Diagram 73 Labour Productivity
Annual percentage change



Sources: Statistics Sweden and NIER.

As previously described, it is assumed that the long-term increase in productivity both in Sweden and in the euro zone will be 1.8 percent for the economy as a whole and 2.3 percent for the business sector (see Tables 22 and 24 as well as Diagram 73). In the next few years, GDP growth will be higher because of an increase in the number of hours worked and stronger growth in productivity as the capacity utilisation improves (see Table 25). Rising consumer real wages in 2004–2005 initially stimulate growth in consumption, but fairly soon exports are slowed by the rising relative cost of labour. GDP growth is also curbed, thus reducing the rate of increase in consumption and investment. The unemployment rate is largely unchanged, but the increase in labour costs gradually slackens as the real exchange rate approaches equilibrium and inflation successively diminishes.

Toward the end of the period, net exports decrease in proportion to GDP as household net lending goes down for demographic reasons and Swedish goods become relatively more expensive. One argument for the appreciation of the real rate of exchange is precisely that there will be less need for a surplus on current account, thus providing a margin for higher relative prices of Swedish products – in other words, for improved terms of trade. Since the labour supply is expected for demographic reasons to decrease somewhat during the period after 2010, the investment share of GDP will stabilize or decline somewhat. The general-government consumption share of GDP in current prices is expected to be stable for the period up to 2010. A decreasing proportion of children and school-age youth will offset the increasing

proportion of the population needing health and nursing care. With lower net lending, household consumption rises more rapidly than real disposable income.

Table 25 Supply and Demand and Real Disposable Income, Main Scenario

Percentage change and percent

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Household consumption	1.8	2.6	2.8	2.6	2.5	2.4	2.6	2.8	2.8
General government consumption	1.8	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Gross investment	–1.5	4.2	3.7	3.6	2.7	2.4	2.4	2.5	2.8
Exports	1.6	5.2	6.8	6.5	5.6	5.5	5.7	5.7	5.7
Imports	–0.1	6.9	7.2	7.0	6.1	5.8	6.2	6.9	6.9
Net exports[1]	5.9	5.5	5.6	5.8	5.9	6.1	6.1	5.8	5.5
GDP	**1.6**	**2.3**	**2.5**	**2.3**	**2.0**	**2.0**	**2.0**	**1.8**	**1.8**
Terms of trade	–1.3	0.4	0.5	0.5	0.4	0.3	0.2	0.1	0.0
Real disposable income	5.4	2.3	2.5	2.3	1.7	2.1	2.4	2.2	2.2

[1] As a percentage of GDP, current prices.
Source: NIER.

In the coming years, the terms of trade – that is, prices of Swedish exports in relation to prices of Swedish imports – are expected to improve with the real appreciation of the exchange rate. In 2010 the terms of trade will be approximately the same as in 2000 (see Diagram 74 and Table 25). The positive trend in the terms of trade, as well as in productivity, will contribute to a marginal increase in the profit share in the Swedish economy despite a rather substantial temporary increase in labour costs (see Diagram 75). As another effect of the improvement in the terms of trade, product real wages will increase more slowly than consumer real wages (see Table 24).

Diagram 74 Terms of Trade
Index 2001=100

Source: NIER.

General Government Finances

With the improvement in the economy, net lending gradually increases during the next few years, but does not return to the target level of 2 percent until 2007 (see Table 26). In other words, there will be no margin for unfinanced reductions in taxes or increases in government expenditure during the next five years. Compared with the development at the end of the 1990s, when there was a substantial margin for unfinanced tax cuts and additional expenditure until this year, major tax bases will be growing more slowly; for instance, there will be no increase in the employment ratio (see Diagram 76). Consequently, a weaker tendency in tax revenue is expected. In addition, general-government expenditure will be at a high level in 2003 because of reforms entailing additional expenditure as well as higher costs of sick-

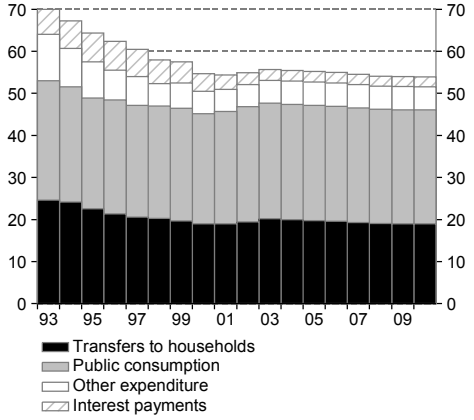
Diagram 75 Labour Cost Share
Share of GDP at market prices

Source: NIER.

Diagram 76 Regular Employment Ratio
Percent

Sources: Statistics Sweden and NIER.

Diagram 77 General Government Expenditure
Percent of GDP



Sources: Statistics Sweden and NIER.

listing and disability pensions, (see Diagram 77). However, with continued positive net lending in the general-government sector, central-government debt will decrease in relation to GDP, and assets, primarily those of the national pension system, will increase. As a result, net income from capital will gradually improve. It is estimated that beginning in 2008, surpluses above 2 percent will provide a certain margin for unfinanced reductions in taxes or increases in expenditure. It this calculation, it is assumed that the surpluses will be used for cutting taxes by a cumulative total estimated at SEK 17.6 billion in 2010 (see Table 26). The annual surpluses, however, are minor compared to those recorded in the past five years. The conclusion is that for a long time to come there will be no margin for unfinanced tax cuts or higher expenditure. It represents a major change from recent years and puts the Government and Parliament in a more difficult position. On the other hand, if the employment ratio increases to 80 percent – because of better-functioning wage formation, for instance – there will be a much greater margin for lowering taxes or adopting new reforms. This subject was reviewed in greater detail in last year's report on the economic conditions for wage formation.

Table 26 General Government Finances, Main Scenario
Percent of GDP and billions of SEK, respectively

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Revenue	56.7	56.7	56.8	56.7	56.7	56.4	56.1	55.9	55.9
of which taxes	51.0	51.2	51.3	51.2	51.2	51.0	50.6	50.5	50.4
Expenditure	54.9	55.6	55.4	55.2	55.0	54.5	54.1	53.9	53.9
Net lending	1.7	1.1	1.4	1.5	1.7	2.0	2.0	2.0	2.0
Annual tax reduction	0.0	0.0	0.0	0.0	0.0	0.0	7.7	5.5	4.4

Source: NIER.

Requirements of Wage Formation if Sweden Joins the EMU

To a large degree, Swedish wage formation has adapted to the monetary-policy regime adopted in the 1990s. Under this system, the Riksbank actively seeks to maintain a low and stable rate of inflation by changing the official interest rate as needed. If Sweden joins the EMU, the monetary-policy framework will change. The responsibility for monetary policy will then rest with the ECB, which acts according to the situation in the euro zone as a whole.

Some have expressed apprehension that a weaker link between Swedish wage formation and monetary policy may have unfavourable consequences for the functioning of

Swedish wage formation in that the deterrent effect of the Riksbank will no longer be present. The NIER shares these fears. Basically, we argue, as long as the parties on the labour market have realized that the Riksbank would react to excessive wage increases by raising interest rates, this arrangement has exerted a significant restraining influence on the development of wages in Sweden. If Sweden joins the EMU, overly high wage increases will no longer elicit this kind of monetary-policy response. Thus, one incentive for restraint in wage formation will be lost. At worst, the result may even be a higher equilibrium unemployment rate (see the box captioned " The Long Term Effects of the EMU on Real Wages and Employment" for a more detailed discussion). On the other hand, if the employment ratio rises to 80 percent – because of better-functioning wage formation, for instance – a substantial margin for tax cuts or reforms will arise. This mechanism was described in last year's report.

Another consequence of membership in the monetary union is that monetary policy cannot be tailored to changes in demand affecting Sweden alone. Only to a limited extent can fiscal policy take over the role of the Riksbank in this respect. The prevailing opinion today is that fiscal policy is less appropriate than monetary policy as an instrument of stabilization policy. There are several reasons to support this argument. One is that in an expanding economy, when general-government finances are strong, it can be difficult to tighten fiscal policy by raising taxes and reducing expenditure. It is much simpler for an independent central bank to raise the official interest rate in such situations. Another reason is that fiscal policy has other goals besides those of stabilization policy, such as achieving a desired distribution of income and promoting effective resource allocation. There is thus a danger that considerations of stabilization policy will be overshadowed. Finally, it usually takes much longer to enact and implement fiscal-policy measures than is the case with monetary policy.[25] The difficulty of maintaining macroeconomic balance through fiscal policy was also the essential reason why many countries changed their system of stabilization policy in the 1990s. The conclusion is that with EMU membership fluctuations in demand affecting only Sweden may lead to greater variations in output and employment (a more detailed analysis is found in the report entitled *Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16. This report also provides suggestions for changing the framework

[25] In the report entitled *Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16, the assessment was made, based on the problems with fiscal policy as an instrument of economic stabilization, that with EMU membership fiscal policy could not be used as actively for purposes of economic stabilization as could monetary policy and a flexible exchange rate.

for fiscal policy in order to dampen the additional fluctuation of the economy.).

Especially if fiscal policy cannot assume the role of monetary policy for stabilization purposes, it is desirable from the standpoint of the economy that wage formation be sufficiently flexible to cushion the effects, to some extent at least, of macroeconomic disturbances in demand and supply that affect only Sweden. For example, if there is a slump in foreign demand for Swedish products, the Riksbank under the present system can stimulate the economy by lowering interest rates. Once Sweden joins the monetary union, this policy option is no longer available. However, there is another possible response to a drop in demand: costs relative to those in other countries can be lowered by rapid downward adjustment in the nominal rate of wage increases. If wage formation were more capable of responding to such economic disturbances – that is, if nominal wage flexibility increased – this would make up for the loss of a national monetary policy, at least to some extent. Various ways of enhancing flexibility in wage formation are discussed in Chapter 6.

It is worth emphasizing that the problem in the example above does not arise from a "breakdown" in wage formation. The wages that resulted initially may well have been appropriate under the circumstances prevailing at the time. Rather, the need for downward adjustment of wages is caused by an unexpected decrease in demand, which leaves wages "after the fact" at a level that is too high. Another requirement of well-functioning wage determination, whether or not Sweden is a member of the monetary union, is that relative wages be adjusted to prevent high unemployment on some submarkets and a labour shortage on others. Such accommodations are probably necessary if Sweden is to meet the targeted employment ratio of 80 percent.

Generally speaking, there is still some uncertainty as to whether the Swedish process of wage formation has undergone sufficient change in the past decade to meet the demands that EMU membership would pose. The alternative scenario below presents the problems that may arise if Swedish wage formation does not function sufficiently well after accession to the monetary union. In this scenario, increases in Swedish labour costs will be higher for a time than the competitive situation permits. The scenario thus provides a picture of the costs in terms of prolonged high unemployment and weak GDP growth that can result if wage formation is not adapted satisfactorily to the new situation.

An Alternative Scenario with Excessive Wage Increases in 2004 and 2005

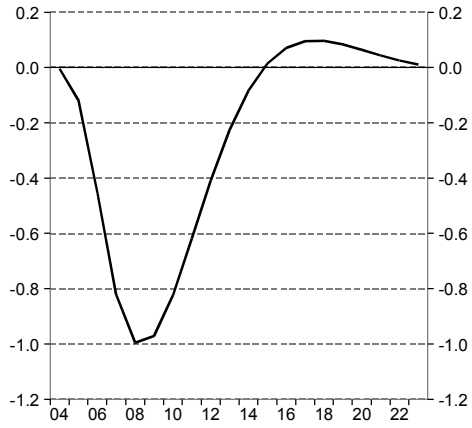
In this scenario, it is assumed – by comparison with the main scenario – that wage formation is characterized by extensive wage competition and a focus on obtaining compensation for gains achieved by other groups. Little consideration is given to the impact of increases in wage costs on competitiveness, employment, and the unemployment rate in the economy as a whole.[26] More specifically, it is assumed that Swedish nominal wage increases in 2004 and 2005 are one percentage point higher than in the main scenario. With wages increasing more rapidly, so do the labour costs of firms, leading in time to higher inflation than in the main scenario. The Riksbank can no longer respond with a tighter monetary policy through increasing interest rates. With the nominal rate of exchange now fixed, increases in prices of Swedish exports mean loss of market share and gradually rising unemployment.

Thus, the pattern is the same as under previous systems of fixed exchange rates when wage increases were excessive. However, there is one important difference: it is no longer possible to correct an overly high cost level in relation to other countries by adjusting the exchange rate as in the 1970s and 1980s, when the krona was devalued on several occasions, or in 1992, when the krona depreciated sharply with the transition to a flexible exchange rate. Now that Sweden is a member of the EMU, the adjustment must made through a period of lower nominal wage increases than in the euro zone.

In the initial years, the higher relative cost level in Sweden has no significant aggregate effects on GDP compared with the main scenario (see Diagram 78). The reason is that a lower real rate of interest (due to higher actual and expected inflation and a nominal interest rate determined by the situation in the euro zone as a whole), together with higher real wages, has a positive effect on domestic demand. Initially, these effects make up for loss of demand from abroad.

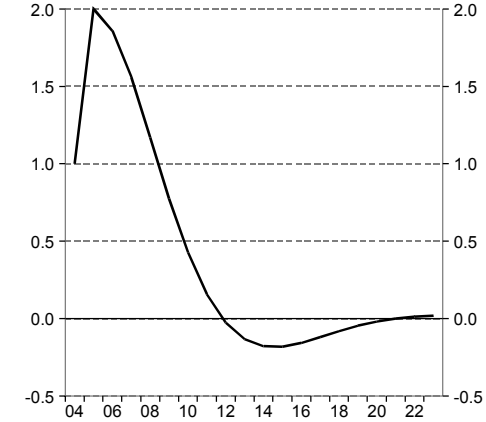
However, the positive effects on domestic demand fade away rather quickly. The nominal rate of wage increases slows as gradually rising unemployment in the traded-goods sector makes it increasingly obvious that Swedish wage levels are too high (see Diagram 79). Weaker growth in real wages and rising unemployment begin to affect domestic demand. A lower nominal rate of wage increases relieves the pressure on companies to compensate by raising prices. As

Diagram 78 GDP
Percentage deviation from main scenario



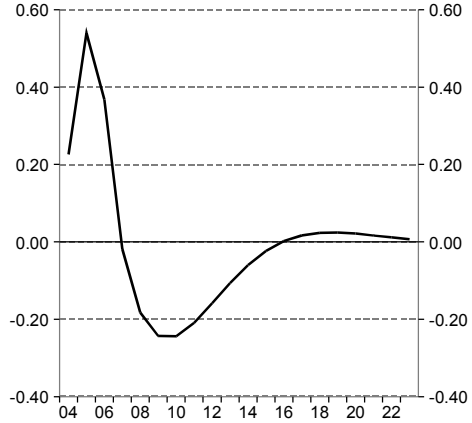
Source: NIER.

Diagram 79 Cost of Labour
Percentage deviation from main scenario



Note: Refers to nominal hourly cost of labour.
Source: NIER.

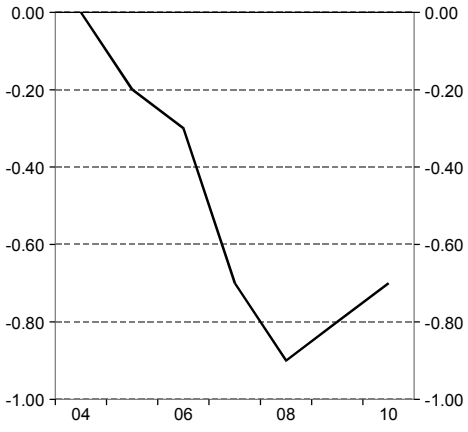
Diagram 80 Inflation Rate (HICP)
Deviation from main scenario, percentage points



Source: NIER.

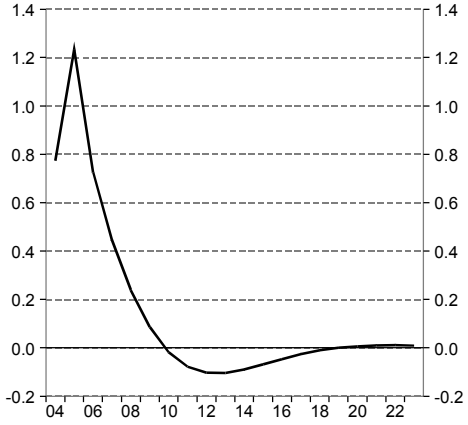
[26] The effects of a permanent deterioration in wage formation, in contrast to the present temporary one, would include a permanently higher equilibrium unemployment rate. The consequences of this kind of change were analyzed in last year's report.

Diagram 81 Employment
Percentage deviation from main scenario



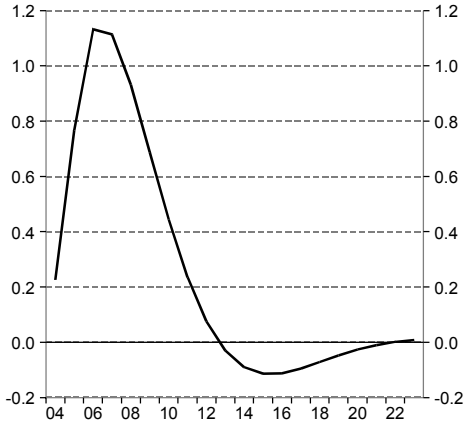
Source: NIER.

Diagram 82 Consumer Real Wage
Percentage deviation from main scenario



Note: Nominal cost of labour divided by HICP.
Source: NIER.

Diagram 83 Consumer Price Index (HICP)
Percentage deviation from main scenario



Source: NIER.

inflation subsides (see Diagram 80), the real rate of interest increases, thus curbing domestic demand even further.

The weaker tendency in employment (see Diagram 81) and output leads to smaller tax bases and higher expenditure for unemployment and related costs than in the main scenario. The deterioration in general-government finances reduces the margin for tax cuts, thus leading to weaker growth in household real disposable income. These developments reinforce the decline in domestic demand.

Gradually net exports begin to recover as the level of wage costs becomes less unfavourable, while imports are contained by weak domestic demand. The successively improving tendency in the traded-goods sector spreads to the rest of the economy, and the factors that restricted domestic demand successively release their hold. After a relatively long period of higher unemployment than in the main scenario, the nominal wage level has adjusted sufficiently to restore the relationship of domestic costs to costs abroad (see Diagram 79). Thereafter, the economy develops as in the main scenario. The costs in terms of higher unemployment (see Diagram 84) and lower GDP, however, prove to be considerable for several years. As shown in Diagram 78, the period of adjustment also extends beyond 2010. The development outlined above is presented in greater detail in Tables 27–29.

After the high wage increases in 2004 and 2005, the nominal level of labour costs is 2 percentage points above the main scenario by the end of 2005 (see Table 27 and Diagram 79). The real cost of labour does not increase to the same extent, since prices are also rising gradually in comparison to the main scenario. In 2006 real wages begin to decline as the process of downward adjustment in nominal wage increases begins while price levels continue to rise relative to the main scenario (see Diagrams 82 and 83).

Table 27 Labour Market, Wages, and Prices with Temporarily Higher Labour Costs

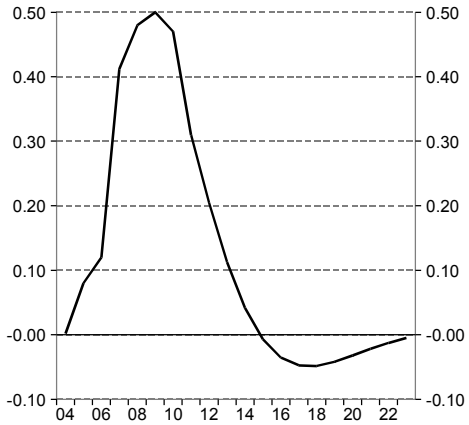
Percentage deviation from main scenario

	2004	2005	2006	2007	2008	2009	2010
Cost of labour [1]	1.0	2.0	1.9	1.6	1.2	0.8	0.4
Consumer real wage [2]	0.8	1.3	0.8	0.6	0.4	0.2	0.1
Employment	–0.0	–0.2	–0.3	–0.7	–0.9	–0.8	–0.7
Labour supply	–0.0	–0.1	–0.2	–0.3	–0.4	–0.3	–0.2
Unemployment rate [3]	0.0	0.1	0.1	0.4	0.5	0.5	0.5
HICP inflation[3]	0.2	0.5	0.4	–0.0	–0.2	–0.2	–0.2

[1] Refers to hourly cost of labour.
[2] Refers to nominal hourly cost of labour in relation to the HICP.
[3] Deviation in percentage points from the main scenario.
Source: NIER.

The unemployment rate exceeds the main scenario by an average of 0.3 percentage points (see Table 27 and Diagram 84); the difference is greatest in 2008 and 2009. When the unemployment rate is 0.5 percentage points higher than in the main scenario. The increase in unemployment is moderated somewhat by a cyclical decrease in labour supply. It is worth emphasizing that these costs are substantial despite a relatively modest initial disturbance in labour costs. If the initial increases in labour costs were greater or exceeded those elsewhere in the euro zone over a longer period than assumed in this scenario, the unemployment rate would be even higher during the course of adjustment.

Diagram 84 Unemployment Rate
Deviation from main scenario, percentage points



Source: NIER.

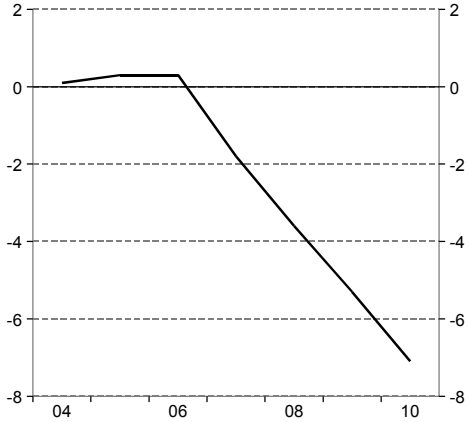
Table 28 Real Disposable Income and Supply and Demand with Temporarily Higher Labour Costs

Percentage deviation from main scenario

	2004	2005	2006	2007	2008	2009	2010
Real disposable income	0.5	0.5	0.1	–0.4	–1.1	–1.4	–1.3
Household consumption	0.3	0.3	0.1	–0.6	–1.3	–1.9	–2.5
General-government consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross investment	0.1	0.3	0.3	–1.8	–3.6	–5.3	–7.1
Exports	–0.1	–0.6	–1.6	–2.3	–2.8	–2.8	–2.5
Imports	0.1	–0.1	–0.7	–2.3	–3.7	–4.9	–5.9
GDP	0.0	–0.1	–0.4	–0.8	–1.0	–1.0	–0.8

Source: NIER.

Diagram 85 Gross Investment
Percentage deviation from main scenario

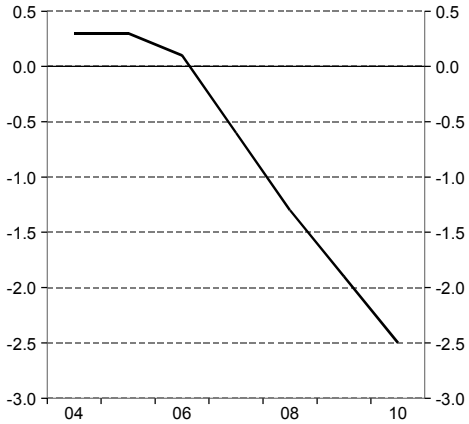


Source: NIER.

In 2008 and 2009, GDP is also lowest in relation to the main scenario, owing to weakness in gross investment and household consumption (see Table 28 and Diagrams 78, 85, and 86). Toward the end of the period, net exports start to pick up, primarily because weak domestic demand has reduced imports. This development counters the weakness in domestic demand, reducing the difference in GDP compared to the main scenario. As shown in Diagram 78, however, GDP does not regain its level in the main scenario until 2015.

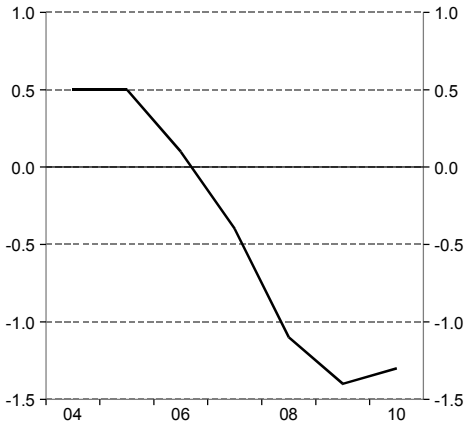
In 2004 and 2005 the tax bases are strengthened by high wage increases. Central-government revenue from VAT is also greater, as stronger household incomes result in higher consumption than in the main scenario (see Diagrams 86 and 87). With more tax revenue in the initial years, net lending is higher at the outset (see Diagram 88). In time, however, general-government expenditure related to unemployment increases; consequently, general-government net lending is weaker than in the main scenario beginning in 2006. The accumulated margin for reducing taxes in 2008-2010 is only SEK 5 billion, or SEK 12.6 billion less than in the main scenario (see Table 29 and Diagram 89).

Diagram 86 Household Consumption
Percentage deviation from main scenario



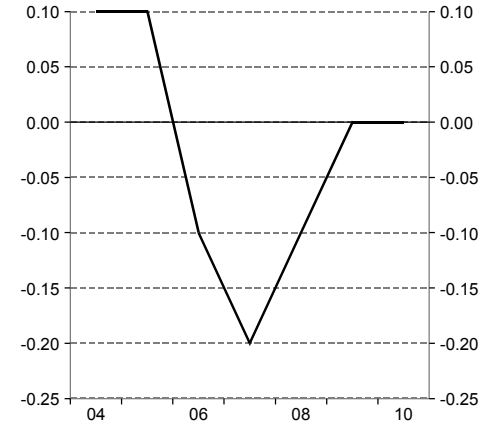
Source: NIER.

Diagram 87 Real Disposable Income
Percentage deviation from main scenario



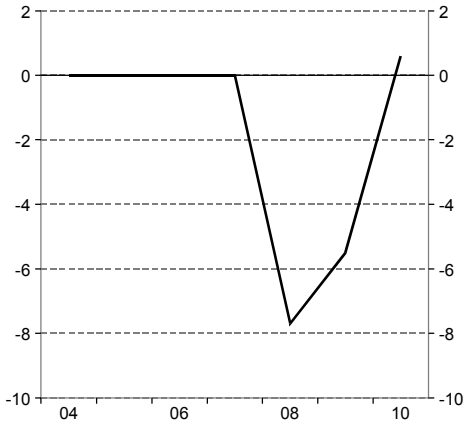
Source: NIER.

Diagram 88 Net Lending: General Government Sector
Deviation from main scenario, percentage points



Source: NIER.

Diagram 89 Annual Margin for Reducing Taxes
Deviation from main scenario, billions of SEK



Source: NIER.

Table 29 General Government Finances with Higher Labour Costs

Deviation from main scenario, percentage points, and billions of SEK, respectively

	2004	2005	2006	2007	2008	2009	2010
Revenue [1]	0.1	0.3	0.1	0.1	0.4	0.5	0.5
of which taxes [1]	0.1	0.3	0.1	0.1	0.3	0.5	0.4
Expenditure [1]	0.0	0.1	0.2	0.4	0.5	0.5	0.5
Net lending [1]	0.1	0.1	–0.1	–0.2	–0.1	0.0	0.0
Annual tax reduction	0.0	0.0	0.0	0.0	–7.7	–5.5	0.6

[1] As a share of GDP.
Source: NIER.

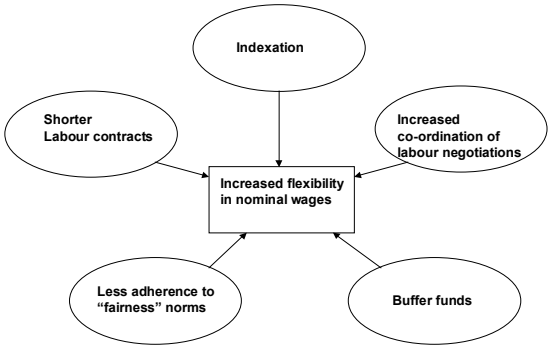
The scenario presented above illustrates the economic costs, in the form of lower output and employment, arising from overly rapid wage increases when Sweden is a member of the EMU. These costs are related to wage increases higher than the competitive situation permits, and also to the loss of national policy mechanisms that formerly helped to keep the economy in balance. The Riksbank can no longer intervene at an early stage to prevent high Swedish wage increases from producing a growing imbalance in the cost level compared to other countries. Nor is it possible – as under previous systems – to restore the cost level by adjusting the nominal exchange rate after such an imbalance has arisen. Instead, the adjustment must be made through lower nominal wage increases than in other countries. Since adjusting nominal wage increases downward tends to be difficult, the period of adjustment – and high unemployment – may be prolonged. For the economy, it is therefore extremely important to ensure that wage formation prevents excessive increases in labour costs. Such disturbances may nevertheless be caused by other developments, such as higher social security contributions, increased employer responsibility for sick pay, or shorter work hours. In that case, it will be desirable from an economic standpoint to slow the rate of wage increases without unnecessary delay, thus shortening the period of higher unemployment as much as possible. Thus, wage formation and the parties on the labour market will have to bear a considerable portion of the responsibility for upholding and restoring economic balance.

6 Ways to Achieve Greater Wage Flexibility

The scenarios presented in Chapter 5 illustrate the central role of wage formation if Sweden becomes a member of the EMU. The greater the flexibility in nominal wages, the less it will matter that the country has lost the mechanisms – a national monetary policy and adjustment of the nominal exchange rate – that formerly helped to keep the economy in balance. This raises the question how nominal wage flexibility can be increased if Sweden joins the EMU. To address this question, one must understand why nominal wages and labour costs often are resistant to change, particularly downward.[27] The discussion in this chapter is intended to provide an overview of academic research in the area.[28]

Figure 2 summarizes the various ways of achieving nominal wage flexibility that are discussed in this chapter. One widely held view may be worth noting right from the start: the effects that arise automatically are probably rather limited.[29] It should be emphasized, however, that this view is only an opinion, and that the degree of nominal wage flexibility is determined largely by the parties on the labour market and their mediators.

Figure 2 Ways to Increase Flexibility in Wages



Source: NIER.

How Can Wage Flexibility be Increased?

In the literature there are a number of different views on the causes of inflexibility in wages; these views are to some extent complementary and to some extent competing. One view is based on the theory that the duration of labour contracts is generally long since collective bargaining entails various costs. These can include the time spent on negotiations by employees and employers, as well as the possible discord created by negotiations, which may lower productivity or lead to conflict. According to this theory, the duration of collective bargaining agreements is decided by weighing the costs of negotiations against the possible costs to the parties of variations in employment, real wages, and profits

[27] In this chapter no direct distinction is drawn between the concept of "wage" and "cost of labour". Here, the concept of "wage" normally includes all employment-related costs.

[28] The chapter is essentially a summary of the analysis of EMU's effects on wage flexiblity in Calmfors, L., "EMU:s effekter på lönebildningen [Effects of the EMU on Wage Formation]", Appendix 2 of *Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16.

[29] In *Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16, the conclusion is drawn that greater wage flexibility can only partly compensate for the loss of a national monetary policy as an instrument of economic stabilization.

when wages cannot be adjusted in response to unforeseen events during the period covered by the current agreement. If EMU membership leads to greater macroeconomic instability, the parties may have incentives to shorten the period covered by their agreements. However, one should probably not expect these effects to be very substantial, since higher costs of negotiation and an increased risk of labour-market strife set a lower limit on the duration of labour contracts.

Another view focuses on achieving nominal wage flexibility by changing wages during the current contract period, with no need for negotiations. By designing agreements in advance so that wages vary depending on the economic outcome during the contract period, it is possible to reduce fluctuations in employment, real wages, and profits. An example would be agreements that provide for indexation of wages to the general price level, often as measured by the consumer price index.

Wage indexation helps to stabilize employment when there are disturbances in demand. If a drop in demand reduces the inflation rate, indexation will lower the nominal rate of wage increases. Since real wages will thus not be affected, employment will be maintained. On the other hand, with a negative disturbance in supply, such as a rise in oil prices that would increase inflation while reducing the level of economic activity, downward adjustment of real wages would help to stabilize employment. However, by serving to maintain real wages at a constant level, indexation is an obstacle to such adjustment and may even aggravate the decrease in employment. The problems caused by wage indexation during crises like the oil-price shocks of the 1970s were probably a major reason why indexation clauses were gradually eliminated from wage formation in many countries, including Sweden.

Wage indexation complicates labour agreements and can thus raise the costs of reaching an agreement. For example, employee and employer organizations have to form an opinion on the appropriate degree of indexation and then negotiate on it. If the objective is to moderate fluctuations in employment, the appropriate degree of indexation will depend on the relative frequency of disturbances in demand compared to supply. Since it may often be difficult to determine even afterwards whether disturbances in the economy originated primarily on the demand or supply side, the task is not an easy one. Moreover, there may be additional administrative costs since indexation leads to more frequent changes in nominal wages. In light of the foregoing, it is difficult to draw any definite conclusions as to whether wage indexation will be used more frequently to stabilize employment if Sweden joins the EMU. As noted in the box "Wage Formation in Europe", however, it appears that ele-

ments of wage indexation have become more common in some euro countries in recent years.

According to a third view, inflexibility in wages may be due to norms of social justice. One example would be that reducing nominal wages is unacceptable to employees; another would be that everyone is entitled to at least some nominal wage increase. If EMU membership resulted in greater fluctuations in employment, there would also be an increase in the cost of social norms that limit flexibility in nominal wages. However, since such norms are probably rather deeply entrenched, it is far from certain that they would lose their hold to an extent that would permit a substantial increase in nominal wage flexibility if Sweden joined the EMU.

It is also conceivable that wage flexibility depends on the degree of co-ordination in wage negotiations. A more detailed discussion on this subject is found in the box "The EMU and Co-ordination of Wage Formation". However, it is not clear what type of negotiating system that provides the best conditions for nominal wage flexibility, although most arguments seem to favour co-ordinated negotiations. As noted in the box "Wage Formation in Europe", several euro countries also appear to have shifted in recent years toward greater co-ordination of wage formation.

Buffer Funds

Wage costs consist of more than just the wages paid to employees; they also include various types of social security contributions and other social charges. Thus, it should in principle also be possible to achieve greater flexibility in labour costs by varying these charges rather than nominal wages. Recently, attention has focused on an arrangement based on this idea: so-called buffer funds. The concept of a buffer-fund system is that in times of economic expansion the charges levied would be higher than necessary to pay for expenditures, and the difference would be saved in special funds. In economic downturns these funds could then be used to finance a temporary reduction in social security contributions, thus helping to maintain employment. One advantage of such a system is that in an economic downturn wage costs can be lowered without reducing the wages paid to employees.

A number of aspects are important to consider in designing a buffer-fund system. One is that variations in social security contributions may weaken the incentives to adjust nominal wage increases during economic downturns. One way to alleviate these problems would be to avoid routine reductions in these contributions in normal periods of economic stagnation, reserving the funds for use in times of

extreme crisis when downward adjustment in the rate of wage increases is not sufficient. Another aspect is that the utilization of the buffer funds in a recession could result in a low rate of return and lead to substantial fluctuations in equity prices if the funds have sizable investments in domestic stocks. This drawback can probably be avoided through a more diversified investment strategy, with a high proportion of interest-bearing assets in the portfolio. A third aspect is that the funds should be used only for general reductions in charges, not for selective subsidies to particular industries that might distort resource allocation in the economy.

A fourth aspect is that a buffer-fund system in which both parties on the labour market participate may blur the division of responsibility between the parties and central government. This consequence can be avoided if the buffer fund is established, financed, and administered by the labour-market parties themselves. If the parties bear the full responsibility for the funds, it will also be in their own interest not to use the funds unnecessarily. One objection to a buffer-fund system completely managed by the parties has been that it could lead to "dual control" of stabilization policy, particularly if the parties and the government differ in their assessment of the economic situation. An opposing argument is that the actors on the labour market have the primary responsibility for adjusting labour costs in response to macroeconomic disturbances, and that how they do so – whether through the usual process of wage formation or by utilizing the buffer funds – should not make any essential difference. A final aspect is that fairly sizable funds are required if social charges are to be reduced sufficiently and for a sufficiently long time to have a significant effect on nominal labour costs.

The government study that has analyzed how stabilization policy should be conducted in the event of EMU membership (*Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16) concluded that the benefits are not big enough to justify central-government subsidies for the build-up of buffer funds. At the same time, the parties on the labour market appear to have little interest in establishing, financing, and administering buffer funds on their own.

The EMU and Co-ordination of Wage Formation

The analysis presented in this box focuses on the possible effects of EMU membership on co-ordination of wage formation. There is also a discussion of the conclusions to be drawn on the basis of current research.[30]

The degree of co-ordination in wage formation can influence the average level of real wages and unemployment established over a business cycle (the equilibrium real wage and the equilibrium unemployment rate). In addition, it may affect the degree of nominal wage flexibility – that is, the extent to which wage adjustment can help to moderate the effects of macroeconomic disturbances and reduce fluctuations in output and employment around their long-term equilibrium levels. Since EMU membership may have an impact both on average real wages over a business cycle and on macroeconomic fluctuations, it may also affect the incentives to change the degree of co-ordination in wage formation.[31]

The Degree of Co-ordination and the Level of Real Wages over a Business Cycle

A suitable starting point for discussing the possible effects of EMU membership on the degree of co-ordination in wage negotiations is the so-called "hump" hypothesis.[32] According to this hypothesis, there is a hump-shaped pattern of correlation between the degree of co-ordination, on the one hand, and the level of real wages and the equilibrium unemployment rate, on the other (see Figure 3). In other words, the level of real wages and the unemployment rate are assumed to be highest at the "intermediate level" of wage negotiations. With far-reaching decentralization of negotiations (to the company level), market forces tend to limit wage increases, since high increases at a particular company can lead to a sharp drop in profits and to extensive layoffs. With a high degree of co-ordination, wage increases are also restricted, though for a different reason: as significant actors in the economy, the negotiating parties have an incentive to consider the consequences for the economy of increased inflation and higher costs of unemployment compensation. If negotiations are partly co-ordinated, it is quite probable that the parties will be little influenced either by market forces, as with decentralization (since wages increase equally for all competitors in the industry), or by considerations of the economy (since the parties are not large enough to consider the effects on inflation and on costs of unemployment compensation). As a result, the level of real wages and thus the equilibrium unemployment rate will be higher than with either decentralized or fully co-ordinated negotiations.[33]

In the box captioned " The Long Term Effects of the EMU on Real Wages and Employment", there is a discussion of two arguments, with opposite conclusions, as to how wage-formation behaviour might be affected by EMU membership. The first, or "competition" argument, emphasizes the increased competition on product markets that could arise. When firms face increased competition, their demand for labour will be more wage-elastic, leading to greater restraint in wage formation and to higher employment.

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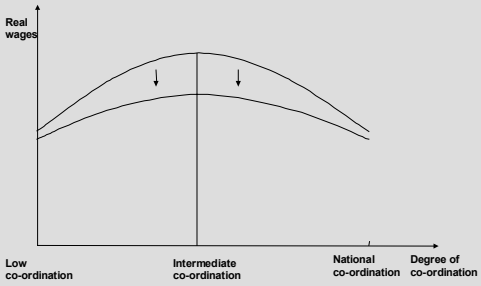
[30] The presentation is largely a summary of the analysis of EMU's effects on co-ordination of wage formation in Calmfors, L., "EMU:s effekter på lönebildningen" [Effects of the EMU on Wage Formation], Appendix 2 of *Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16.

[31] It is assumed in the analysis that the system of wage formation can affect the level of real wages, which is not the case in the long run in the conceptual framework otherwise used in this report.

[32] See Calmfors, L. and J. Driffill, "Bargaining Structure, Corporatism and Macroeconomic Performance", *Economic Policy*, 6, 1988.

[33] It should be emphasized that empirical studies on the relationship between the degree of co-ordination and unemployment do not clearly establish the existence of a hump-shaped correlation. Although there is strong support for the hypothesis that a high degree of co-ordination is compatible with a lower unemployment rate than would be the case with only partial co-ordination, the results are not clear as to whether decentralization to the company level results in higher or lower unemployment than with partial co-ordination; see Table 2 in Calmfors, L., "EMU:s effekter på lönebildningen" [Effects of the EMU on Wage Formation], Appendix 2 of *Stabiliseringspolitik i valutaunionen* [Stabilization Policy in the Monetary Union], SOU 2002:16.

Figure 3 Effect of Increased Foreign Competition



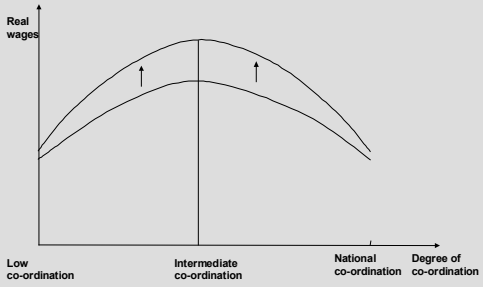
If wage negotiations were decentralized, the effect of increased competition on the level of real wages would probably be rather modest; that is, the curve in Figure 3 would shift downward relatively little in the case of negotiations at the company level. The reason is that the bargaining parties at a particular company would consider competition intense even before EMU accession; thus, there would probably be little incentive for further restraint thereafter. Similarly, the effects of fully national co-ordination would probably be limited since the parties in any event would consider the effects on the economy and thus the impact of high wage increases on the unemployment rate and on employment. On the other hand, if negotiations were held at the industry level, the dampening effect of greater international competition on wage increases would likely be more substantial; in other words, there would be a fairly sizable downward shift in the curve in Figure 3. Even if wages increased by the same amount for all *domestic* competitors, with greater competition there would be a risk that high wage increases would result in substantial loss of market share to *foreign* competitors in the same industry. This possibility would increase the incentive for wage restraint. One way to describe the change would be to say that the market forces that exert a restraining effect on wage formation at the company level are now observable at the industry level as well. The discussion above suggests that real wages and unemployment would be affected as illustrated by the downward shift in Figure 3 if product market competition increased as a result of EMU membership.

How then might the incentives to change the degree of co-ordination be affected if Sweden joins the EMU? The drawbacks of partially co-ordinated negotiations diminish in relation both to totally co-ordinated negotiations and to fully decentralized bargaining (in other words, the hump in Figure 3 flattens out). The choice of co-ordination level then matters less than it would if the country maintained a flexible exchange rate.

The second, or "deterrent" argument on the effect of EMU membership on wage-formation behaviour stresses the interaction between the Riksbank and the parties on the labour market. With Sweden in the EMU, the transfer of monetary policy to the European Central Bank may lead to *less* restraint in Swedish wage formation. The reasoning is that the disciplining effect on the wage-formation process that the Riksbank has probably exerted in recent years will no longer be present.

Also in the case of this argument, it is reasonable to believe that the effects of EMU membership, though opposite to those following from the "competition argument", will be greatest when wage formation is partly co-ordinated (see Figure 4).

Figure 4 Effect of Losing National Monetary Policy



At the company level, monetary-policy measures matter little, whether Sweden is a member of the monetary union or not. If wage formation is fully co-ordinated, the parties will consider the consequences for the economy in any case. With only partial co-ordination of collective bargaining, however, the effect on the level of real wages could be considerable since the parties would no longer need to fear a monetary-policy response from the Riksbank.[34] This would mean

[34] It is conceivable that a national central bank also serves as an important restraining factor when there is a high degree

that the hump would shift upward as illustrated in Figure 4. But it is not clear in this case, either, that co-ordination would be affected in any particular direction. It has been argued that EMU membership would strengthen the incentive to use a high degree of co-ordination as a substitute for the disciplining effect of domestic monetary policy that is present with the country outside the EMU.[35] Holding negotiations at the industry level, however, would be relatively less advantageous, by comparison not only to fully co-ordinated negotiations, but also to bargaining at the company level (in other words, the slope of the hump would be steeper). One might therefore contend that EMU membership could just as well strengthen the incentive for decentralizing labour agreements to the company level. However, the choice of co-ordination level would in general be relatively more significant with EMU membership; from the standpoint of the economy it would be more important to avoid wage formation at the "intermediate" level.

Thus, the two arguments lead to opposite conclusions, and their relative validity is difficult to determine. It is an open question, therefore, how EMU membership would affect the degree of co-ordination in wage formation and thus the equilibrium real wage and the equilibrium level of employment.

Degree of Co-ordination and Wage Flexibility

The degree of co-ordination in wage negotiations may also affect the extent to which wage formation can help to cushion the effects of macroeconomic disturbances and moderate fluctuations in output and employment around their long-term equilibrium values. It is not totally clear which type of negotiation system – a decentralized regime or one with a high degree of co-ordination – provides the optimal conditions for nominal wage flexibility. However, there appear to be several arguments, mostly theoretical (there is surprisingly little empirical research to cite for support), to the effect that conditions for a high degree of flexibility in nominal wages are most favourable in the case of co-ordinated negotiations.

However, there is an argument that extensive decentralization leads to high nominal wage flexibility: Decreases in nominal wages appear to be more acceptable when the survival of a particular company is at stake.[36] In the event of a drastic negative disturbance in demand in Sweden, the general level of wages could be reduced by wage cuts at a number of crisis-ridden companies if negotiations were held at the level of the individual firm. It is more doubtful that such a process would develop if negotiations were conducted at a more co-ordinated level.

One argument that a high degree of nominal wage flexibility can best be achieved through co-ordinated bargaining is based on the assumption that employees are interested in preserving the prevailing relationship among wages in different groups. If wage negotiations are co-ordinated, it may be easier to arrive at low nominal wage increases, which are possible without changing wage relationships. Another argument, closely related to the preceding one, is that with decentralization there is often little synchronization among different wage agreements. Consequently, it may be more difficult in new agreements to adjust wages to macroeconomic disturbances, since the groups covered by these agreements may not be inclined to accept wage increases that differ very much from those previously negotiated by other groups. A third argument is that with co-ordinated negotiations it may be easier to consider the interest of groups not firmly established on the labour market (so-called "outsiders") when adjusting wages in an economic downturn. These "outsiders" have an interest in adjusting wage levels because they constitute the group hardest hit by variations in employment resulting from macroeconomic fluctuations.

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of co-ordination. In that case, real wages will be noticeably higher even when negotiations are totally co-ordinated (that is, the right extreme of the hump will also shift upward more than in Figure 4).

[35] See for example Holden, S., "Monetary Regimes and the Co-ordination of Wage Setting", CESifo Working Paper No. 429, 2001.

[36] See for example the questionnaire-based study presented in Agell, J. and P. Lundborg, "Survey Evidence on Wage Rigidity: Sweden in the 1990s", IFAU Working Paper 1999:2 (to be published in the *Scandinavian Journal of Economics*).

There may also be "precautionary motives" behind a high degree of co-ordination in wage negotiations. As previously emphasized, in the EMU there may be a heavy price for downward adjustment of wage levels in relation to other euro countries. If a situation of major imbalance in relative wage costs has developed, it can probably be corrected more easily through co-ordinated negotiations. It is less complicated to co-ordinate wage settlements in such situations if wage negotiations are already co-ordinated under normal conditions. Co-ordination in normal situations can thus be viewed as "preparedness" for crisis situations.

In summary, a reasonable conclusion from academic research would appear to be that EMU membership could increase the incentive for greater co-ordination in collective bargaining. The main reason is that it probably provides more favourable conditions for nominal wage flexibility, which in turn counteracts tendencies toward greater macroeconomic instability.