Wage Formation

Economic Conditions in Sweden 2004

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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 One*, the Swedish labour market is analyzed from various perspectives. *Chapter Two* focuses on the long-term conditions for wage formation in the business sector, with special emphasis on labour costs and the development of productivity and prices. *Chapter Three* studies the labour supply in the longer term and how it can be affected by improving the integration of foreign-born individuals. *Chapter Four* is devoted to the conditions for wage formation in the general-government sector. *Chapter Five* reviews the conditions at the outset of the 2005 labour negotiations. The analysis concentrates on the current economic outlook and on the competitive situation in relation to other countries. *Chapter Six* of the report outlines a main scenario for the Swedish economy and for wage formation during the period 2004–2010. This scenario reflects the development considered most probable by the NIER.

The preparation of this year's report was led by Henrik Braconier, Head of Macroeconomic Research and Simulation.

Stockholm, October 2004
Ingemar Hansson
Director General

Summary

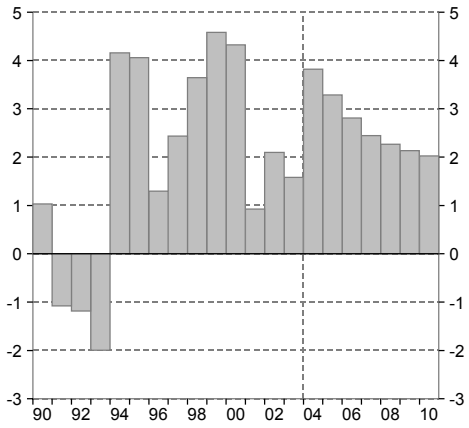
Wage formation is critical to the development in the labour market in the next 10 years. The rate of return required by international capital markets and the inflation target of the Riksbank provide a clear structure for wage formation. Within this structure, well-functioning wage formation can contribute to permanently low unemployment and high employment. If Swedish labour costs are too high, return on investment will be lower in Sweden than in other countries, holding back investment and employment. A balanced economic development requires that labour costs not exceed payroll capacity in the business sector. In the NIER's opinion, labour costs in the Swedish business sector are currently on a par with those in other countries. Thus, from this standpoint there is no need for a downward adjustment of labour costs; these can increase in line with prices and productivity without leading to unsustainably high costs. In the period 2004–2010, that will mean an estimated average annual increase of 4.2 percent in labour costs. This relatively rapid rise will be possible because of strong growth in productivity during the same period.

The Swedish economy started to pick up in the summer of 2003 and has grown fairly rapid since then. The forecast for GDP growth this year has now been revised upward to 3.8 percent, primarily because exports have been rising even more than expected. Growth will be relatively high in 2005 and 2006 and then slacken (see Diagram 1). So far, the economic upswing has been driven by the surge in exports, but in 2005 and 2006 investment and household consumption will also be rising rapidly owing to an expansionary monetary policy.

Up to this point, it has been possible to satisfy increasing demand through rapidly increasing productivity, while employment has been decreasing and unemployment going up (see Diagram 2). Both employment and unemployment have now stabilized, and the unemployment rate is expected to decrease gradually to 4.3 percent in 2006 and then to remain near its equilibrium level of 4.2 percent. With unemployment dropping, labour costs will accelerate until the end of 2007, when unemployment will level off because of a tighter monetary policy in 2005–2008 (see Diagram 3). Thereafter, the rise in labour costs will slow to its long-term rate of increase, which is estimated to be 4.3 percent per year. In 2010 labour costs will be at a balanced level; in other words, investment in Sweden will be competitive in relation to investment in other countries.

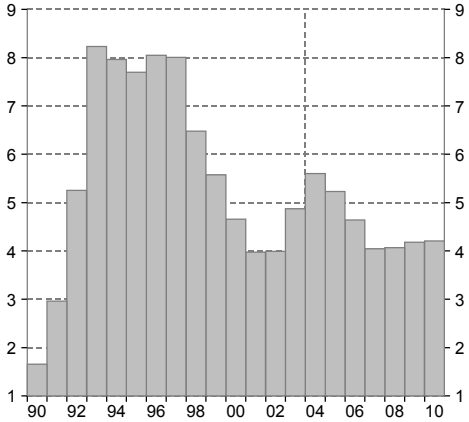
In 2004 collective-bargaining agreements were reached for the majority of employees in the business sector. The negotiations were conducted as the economic upturn was getting under way, but in a weak labour market. During 2004–2006, hourly earnings in the business sector are forecast to increase by an annual average of 3.4 percent, or 0.2 percentage point less than in the previous three-year period.

Diagram 1 GDP
Annual percentage change



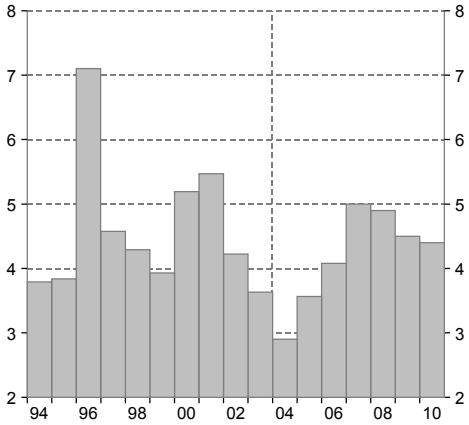
Sources: Statistics Sweden and NIER.

Diagram 2 Unemployment Rate
Percent of labour force



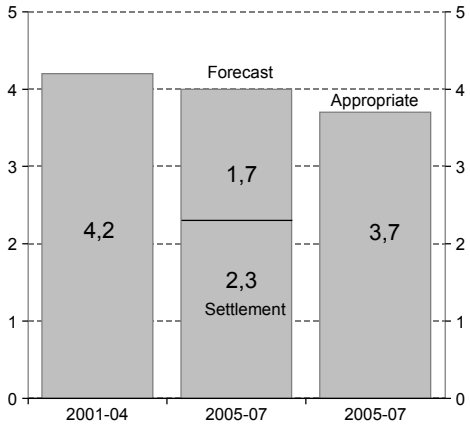
Sources: Statistics Sweden and NIER.

Diagram 3 Hourly Labour Costs According to the National Accounts – Total Economy
Annual percentage change



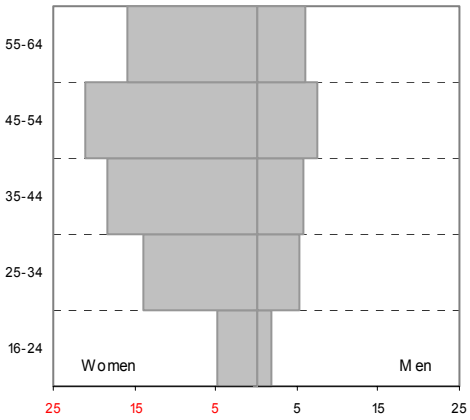
Sources: Statistics Sweden and NIER.

Diagram 4 Hourly Earnings – Local Government
Annual percentage chage



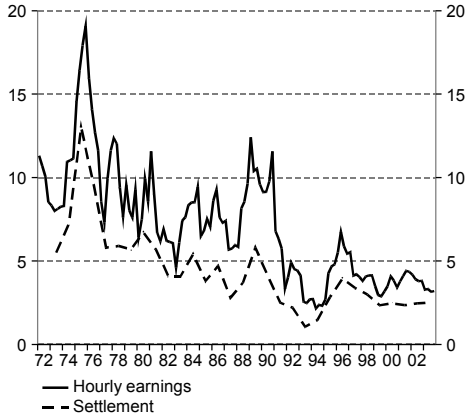
Note: Short-term Wage and Salary Statistics.
Sources: National Mediation Office and NIER.

Diagram 5 Number Employed by Age Group – General Government Sector
Share of total number employed in general-government sector, percent



Source: Statistics Sweden.

Diagram 6 Hourly Earnings and Negotiated Settlements
Annual percentage change, quarterly values



Source: National Mediation Office.

New agreements for the local-government sector will be negotiated in 2005. These negotiations will be held in a somewhat stronger labour market. For 2005–2007, the wage settlements in local government are estimated to be 2.3 percent per year. In total, hourly earnings in the local-government sector are expected to rise by an annual average of 4.0 percent in 2005–2007, which is somewhat less than in 2001–2004 (see Diagram 4). Thus, wages will be increasing faster in local government than in the business sector during all of 2002–2006, which is a normal situation when resource utilization is low, whereas the opposite is true when resource utilization is high. One explanation for the larger wage increases in local government in 2005 and 2006 is that additional central-government subsidies will lead to higher employment and higher wages in local government.

In a somewhat longer-term perspective, wages will tend to rise more rapidly in local government than in the business sector because Sweden's aging population will require more and more care and assistance, leading to faster growth in demand for labour in the general-government sector than in the business sector. In the longer run, the wage tendency in the general-government sector will also be affected by the relatively large numbers retiring from the sector (see Diagram 5). Thus, the general-government sector will need to recruit relatively more new staff than the business sector, a difference that will tend to push up relative wages in the general-government sector. On the other hand, the large numbers retiring in the general-government sector will also mean that relatively high-paid older staff will be replaced by younger employees with somewhat lower wages, a factor that will hold down the average wage.

Since 1998, wage formation in Sweden has been based on highly centralized co-ordination, but with a significant local element. This negotiating arrangement has generally worked well and has been one reason for the lower rate of wage increases that has enabled unemployment to go down without jeopardizing the inflation target (see Diagram 6).

At the same time, wage formation is facing several challenges. If the negotiations in the local-government sector lead to more generous wage settlements than in the forecast, the comprehensive negotiations in 2007, for example, can be expected to result in larger cost increases in the business sector. It is considered that such a development would lead to permanently higher unemployment.

Similarly, greater co-ordination in wage formation can contribute to permanently lower unemployment. If negotiations in the local-government sector lead to somewhat smaller increases in wage costs than in the forecast, slightly lower wage increases in the business sector can be expected in the future. Unemployment could then be permanently lower without raising the inflation rate. In the NIER's opinion, somewhat lower wage increases than in the forecast would be desirable from a general economic standpoint.

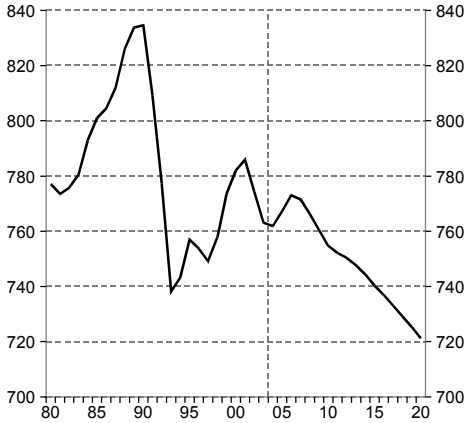
As a first step toward wage formation in which greater consideration is given to the economy in general, it could be appropriate, according to the NIER's assessment, to limit wage increases in local government in 2005–2007 to 3.7 percent per year instead of 4.0 percent as forecast. This reduction can be achieved both through lower wage settlements and through smaller wage increases in addition to the settlements (see Diagram 4). Such a development would make it possible in the next phase for the negotiating parties in the business sector to limit wage increases beginning with the 2007 agreements, thus allowing unemployment to drop to a permanently lower level. The relative development of wages in the two sectors could then be the same as in the main scenario, which is considered well balanced in view of the future demographic trends.

For wage formation to function well, it is also necessary that wages adjust to the constant changes in supply and demand on the labour market. One example is the large number of persons that soon will retire in the general-government sector. With flexible wage formation, the development of wages will adjust to changed conditions in different industries, regions and occupations, thus avoiding persistent imbalances while also contributing to a lasting reduction in unemployment.

It is estimated that in the next few years the labour supply and the number of hours worked will decrease in relation to the total population (see Diagram 7). This means lower GDP and thus more limited scope for household and general-government consumption than if the number of hours worked per capita had remained constant. Since the tax revenue of the general-government sector is determined primarily by the number of hours worked, whereas the desire for general-government expenditure is more closely related to the population tendency, the decreasing number of hours worked per capita will strain general-government finances. With the assumption in the main scenario about no changes in rules after the budget bill for 2005, general-government net lending will rise only marginally despite the improved economy (see Diagram 8). If the Government's and Parliament's target of an average 2-percent surplus for 2006–2010 is to be met through permanent tax increases or expenditure cutbacks, these measures must be on the scale of SEK 10 billion.

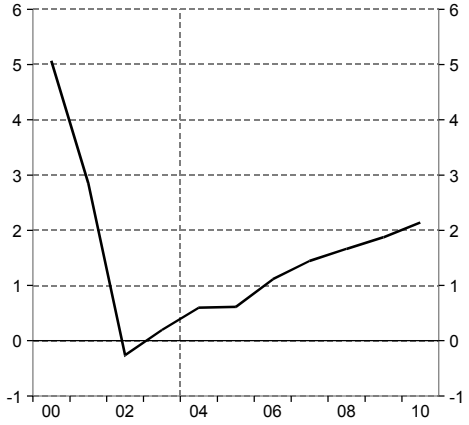
However, the lacklustre tendency in the number of hours worked, according to the main scenario, can be counteracted through measures that increase the labour supply or decrease equilibrium unemployment. One possibility would be to improve the integration of the foreign-born in various ways. In a secondary scenario, it is assumed that by 2013 the difference in the employment rate between persons born abroad and those born in Sweden will be reduced by 50 percent, rather than by 10 percent as in the main scenario. As a consequence, the regular-employment rate in 2013 will be 78.2 percent instead of 76.3 percent as in the main scenario (see Diagram 9). In neither sce-

Diagram 7 Number of Hours Worked per Capita



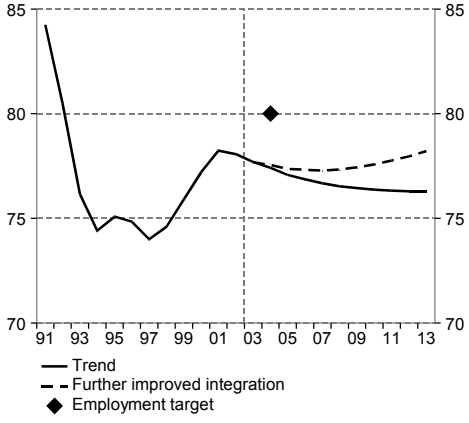
Note: Calendar-adjusted number of hours worked.
Sources: Statistics Sweden and NIER.

Diagram 8 Net Lending – General Government Sector, No Change in Rules After Budget Bill for 2005
Percent of GDP



Sources: Statistics Sweden and NIER

Diagram 9 Regular Employment Rate
Percent of population aged 20-64



Note: The period after 2002 refers to the trend, i.e. excl. cyclical variations.
Sources: Statistics Sweden and NIER.

nario, however, is the Government's and Parliament's employment target of 80 percent achieved. But compared to the main scenario, GDP is about SEK 80 billion higher, and general-government net lending SEK 50 billion higher, in 2013. There are also other possibilities with similar effects on GDP and general-government finances: reduced ill health, postponed retirement and earlier entry into the labour force through more effective studies. The parties on the labour market can contribute to a more beneficial development in the general economy in areas like integration, ill health, average hours worked and rules governing pensions. The parties can also contribute to permanently lower unemployment through a well-functioning wage formation.

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1 The Swedish Labour Market

A well-functioning labour market contributes to low and stable unemployment and to a high labour supply. Sweden's economy is constantly affected by changes like new production technologies, shifts in demand patterns and altered competitive conditions. Changes of this kind should generally not be met with general stabilization policy. On the other hand, a well-functioning labour market with flexible wage formation, one that encourages mobility and changes in relative wages between different industries, regions and occupations, can help to lessen the negative consequences and reinforce the positive effects of such changes. Especially in periods of rapid structural transformation, it is important that the labour market function in a flexible manner so that mobility between industries, regions and occupations is high. Otherwise there is a danger that unemployment and shortage situations will occur at the same time.

This chapter analyses how well the Swedish labour market functions. First, the features of a flexible labour market are identified, and ways are considered for the parties on the labour market, as well as the government and parliament, to affect labour-market flexibility. Thereafter, there is a discussion on the Swedish labour-market tendency and the level and development of equilibrium unemployment in the next few years.

Features of a Flexible Labour Market

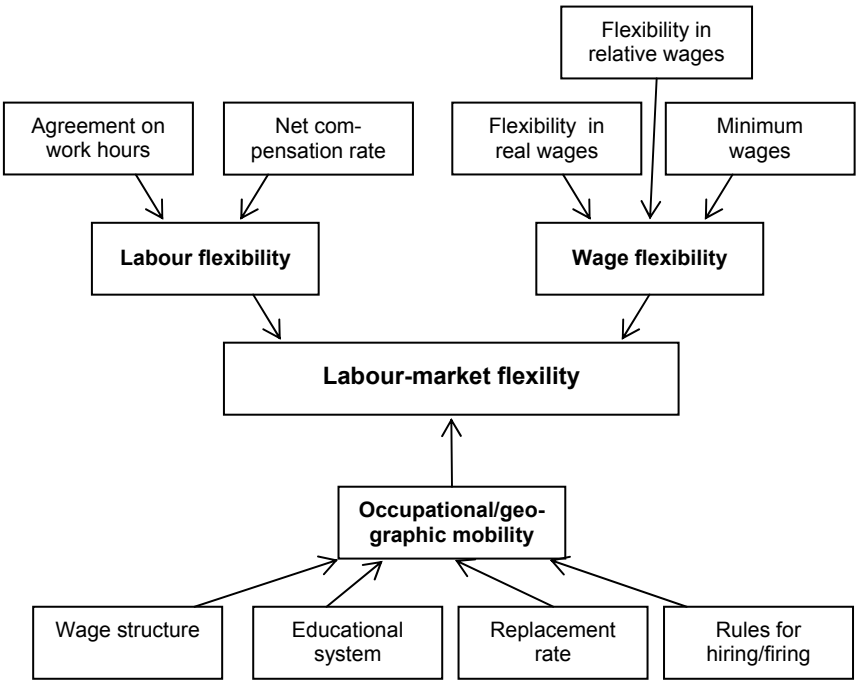
The labour market is constantly exposed to various disturbances that affect labour supply, employment and unemployment both in total and within different regions, industries and occupations. The flexibility of the labour market determines how quickly labour supply, employment and unemployment recover from disturbances and the degree to which these disturbances have lasting effects on unemployment and employment.

Different Types of Flexibility

Depending on the nature of the changes that occur, different types of flexibility are important if adjustment is to proceed in a manner that is efficient from a general economic viewpoint. In a cyclical change, flexible wages – so-called real-wage flexibility – can help to moderate fluctuations in employment through adjusting the general development of wages in the economy to the current phase of the business cycle. In addition, a high degree of work flexibility in the form of flexible work hours can contribute to a better fit between labour supply and demand for labour. This will help to limit the decrease in employment in an economic downturn and reduce the probability of a labour shortage when demand is high.

In periods of major structural change, high mobility between industries, regions and occupations is important; otherwise, unemployment and shortages may arise at the same time. A factor that affects mobility is the wage structure, that is, the wage differences between various industries, regions and occupational categories. The wage structure affects, for example, the individual's choice of occupation and education and her/his incentive to move to another work location. A wage structure that adjusts to changes in relative demand or supply therefore helps employment and unemployment to recover more quickly after structural changes.

Figure 1



Institutional Factors Important for Flexibility

Labour-market flexibility is affected primarily by structural labour-market conditions such as institutions and systems of rules. Factors like taxes, minimum wages, income-replacement rates in the event of unemployment, rules for hiring and termination, the nature of labour-market-policy measures and the design of the educational system affect the individual's incentives to change occupations, to retrain or to relocate, for example. These factors also affect the search intensity of individuals in case of unemployment and their incentive to work more hours, as well as an employer's incentive to hire and fire personnel.

The diagram in Figure 1 illustrates how various factors can affect the flexibility of the labour market. The "net compensation rate" for a marginal additional work input is the proportion

of the increased labour cost received by the individual in the form of higher disposable income. A low net compensation rate can contribute to low flexibility on the labour market by limiting the individual's incentive to work more in an economic upturn, for example. Calculations show that the net compensation rate this year is 36.2 percent and that it has decreased by 1.0 percentage point since 2002, owing primarily to higher local-government taxes.[1]

The financial incentives for individuals to learn a new trade or to relocate are affected by factors like the replacement rate in case of unemployment, or the proportion of disposable income that the household continues to receive when the individual becomes unemployed. A higher replacement rate can thus have a negative effect on labour-market mobility. The average replacement rate in case of unemployment is estimated to have increased from 77 percent in 1997 to 79 percent in 2003.[2] The replacement rate may vary substantially from one individual to another. Persons with higher incomes generally have lower replacement rates. In 2003, the replacement rate for one person out of five was at least 90 percent.

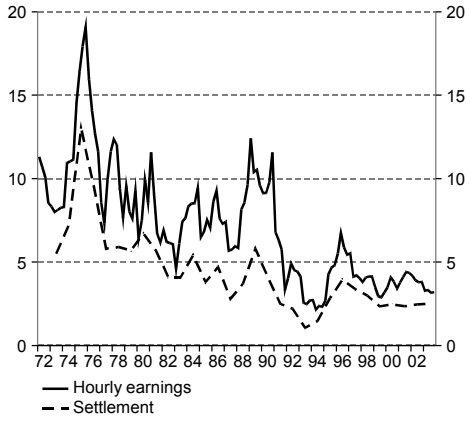
The Labour Market Parties Also Play a Major Role

The parties on the labour market can also affect flexibility in several different ways. First, they can make a difference to real-wage flexibility by adjusting the development of wages to the current state of the economy. Wage formation can thereby help to moderate cyclical fluctuations in employment. The labour-market parties can also influence the relative wages of different industries, occupations and regions and their adjustment to different types of changes. This so-called relative-wage flexibility can be achieved in ways like letting local conditions play an important part in wage formation. Adjustment of relative wages is facilitated if there is consensus at the central level that more rapid wage increases are required in some areas of the labour market covered by collective bargaining than in others. Finally, agreements on work hours and minimum wages in connection with wage negotiations can affect the flexibility of the labour market.

The question whether different negotiating systems have an influence on the labour market has been the subject of considerable research. In much of the literature, it is argued that more co-ordinated negotiations contribute to greater restraint in wage settlements and thus to lower unemployment and higher employment. The term "co-ordinated negotiations" refers in this case to negotiations that implicitly consider the total cost of

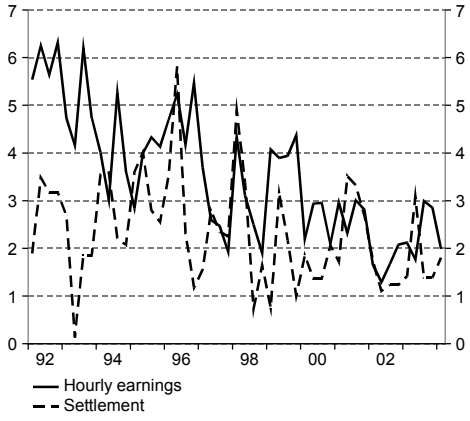
[1] See the box captioned "NIER Spotlights Incentives to Work" in *The Swedish Economy*, August 2004.
[2] See LU (Report of the Long Term Planning Commission) 2003/04, Appendix 14 "Vem tjänar på att arbeta?" (Who Gains by Working?).

Diagram 10 Hourly Earnings and Negotiated Settlements – Business Sector
Annual percentage change, quarterly values



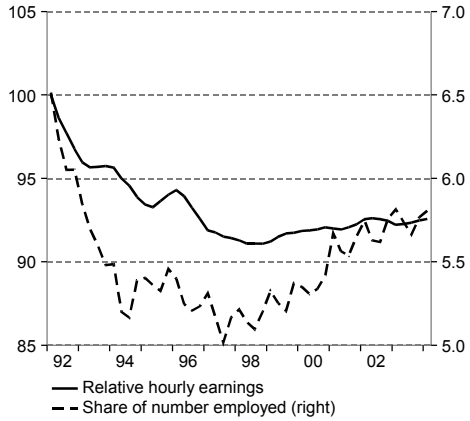
Source: National Mediation Office.

Diagram 11 Diffenence Between Highest and Lowest Wage Growth
Percentage points, quarterly values



Note: Covers 8 areas of negotiation in the business, local-government and central-government sectors.
Sources: National Mediation Office and NIER.

Diagram 12 Construction Industry
Index 1992 first quarter =100 and percent of total number employed, respectively, quarterly values



Sources: National Mediation Office and NIER.

unemployment to the economy as a whole. The negotiating procedure developed on the basis of the Agreement on Industrial Development and Wage Formation, or Industrial Agreement, is of this nature (see the box captioned "Labour Negotiations and Wage Formation"). In co-ordinated negotiations the parties pay more attention to the overall economic consequences of excessive unemployment than in decentralized negotiations. A modification of this theory (Calmfors–Driffill) emphasizes that both highly co-ordinated and highly decentralized negotiations lead to lower unemployment and higher employment than if negotiations are held at an intermediate level.

The importance of the negotiating system for macroeconomic development has been examined in a large number of empirical studies.[3] However, there is no consensus on the kind of negotiating system that leads to the lowest unemployment. There is some support for the proposition that a high degree of co-ordination is favourable to low unemployment, but there is also some evidence that this effect is achieved by decentralization to the firm level. One possible explanation for these partly contradictory results is that the degree of co-ordination appropriate from a general economic standpoint is dependent on the macroeconomic tendency. Highly co-ordinated negotiations may be better for responding to cyclical disturbances since co-ordination can contribute to greater real-wage flexibility. Highly decentralized negotiations may be better for responding to structural disturbances since decentralization can contribute to greater relative-wage flexibility.

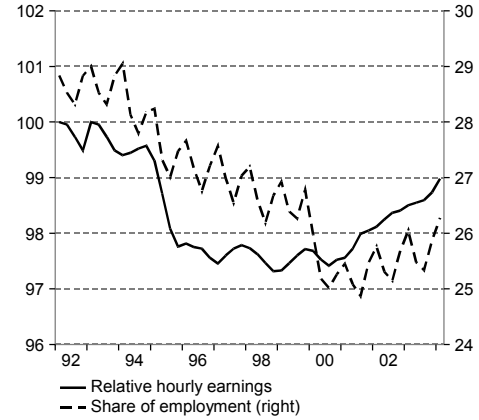
Swedish wage formation has historically been strongly centralized. In the 1980's and early 1990's, there was considerable decentralization, which later in the 1990's was followed by greater co-ordination in wage formation (see the box captioned "Labour Negotiations and Wage Formation"). The higher degree of labour-market co-ordination, together with the growing credibility of the inflation target, led to a lower rate of wage increases in the late 1990's (see Diagram 10). It is reasonable to conclude that greater co-ordination of wage formation has produced a lasting reduction in unemployment. A natural consequence of stronger co-ordination has also been diminished variation in both negotiated and actual wage increases among the different areas of the labour market covered by collective bargaining (see Diagram 11).

It is difficult to determine how flexible the structure of relative wages in Sweden is and how it is affected by the system of wage formation. Diagrams 12 and 13 show that in the construction industry and in local government, there has been some connection between relative demand, measured as the proportion of employment, and relative wages. Moreover, in recent years there has been considerable decentralization of wage for-

[3] See, for example, Aidt, T. och Tzannatos, Z. *Unions and Collective Bargaining, Economic Effects in a Global Enviroment*, World Bank, 2002, and *Employment Outlook 2004*, OECD.

mation, in the county-council-district sector, among others.[4] At the same time, co-ordinated wage formation, where a large portion of the scope for wage increases is allocated at the central level, can easily mean inflexible relative wages. For wage formation to contribution to low unemployment and high GDP, there must be considerable flexibility in the development of wages, both between and within different areas of collective bargaining, combined with an overall wage tendency that is not inflationary even with low unemployment.

Diagram 13 Local Government
Index 1992 first quarter =100, share of total number employed, quarterly values



Sources: National Mediation Office and NIER.

Flexibility Affects Equilibrium Unemployment

The flexibility of the labour market and the functioning of wage formation are reflected in so-called equilibrium unemployment. The NIER's analysis distinguishes between short-term and long-term equilibrium unemployment (see Figure 2). Short-term equilibrium unemployment is the unemployment rate within some years that is compatible with an inflation rate of 2 percent, given the disturbances currently affecting the economy, such as cyclically high unemployment. Long-term equilibrium unemployment is the unemployment rate toward which the economy gravitates in the long run, with existing rules and institutions, provided there are no new disturbances.

If actual unemployment is less than short-term equilibrium unemployment, a labour shortage will arise in certain industries and regions, leading to acceleration in wages and prices. The Riksbank will respond by raising the repo rate to curb demand and thus inflationary pressure. Conversely, if actual unemployment exceeds short-term equilibrium unemployment, there will be idle labour that can be employed without wage formation leading to an unsustainable inflation trend.

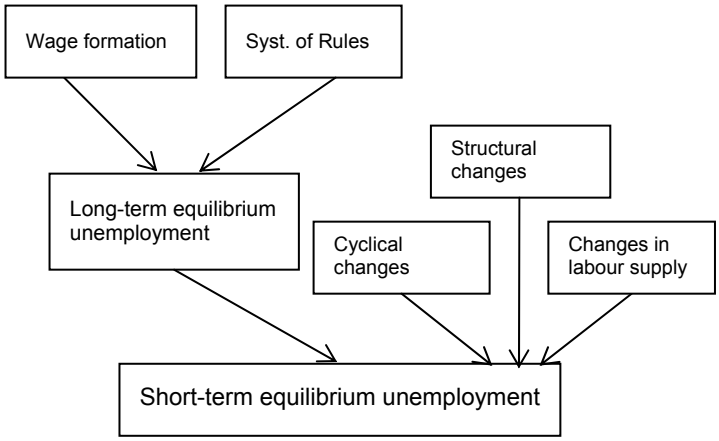
Long-term equilibrium unemployment is determined primarily by structural factors on the labour market, such as institutions and systems of rules, and by the functioning of wage formation (see Figure 2). In the box captioned "Equilibrium Unemployment," a theoretical framework is presented in which long-term equilibrium unemployment is determined by wage formation and by the matching of unemployed persons with unfilled vacancies. In this theoretical framework, higher replacement rates and longer benefit periods for unemployment insurance, as well as higher income taxes, normally lead to greater wage demands and thus to higher long-term equilibrium unemployment. Replacement levels in alternative income-support systems, such as sickness benefits, have similar effects. The reason is that the incentives to avoid unemployment through moderation in wage increases are weaker when unemployment is less costly for the

[4] See, for example, Calmfors, L and Richardson, K. "Marknadskrafterna och lönebildningen i landsting och regioner" (Market Forces and Wage Formation in County Council Districts and Regions), Report 2004:9, IFAU (Institute for Labour Market Policy Evaluation).

wage earners concerned. Moreover, higher unemployment compensation and income taxes tend to reduce search intensity in case of unemployment. Thus, the higher equilibrium unemployment is a consequence of changes in both wage formation and matching.

It is unclear how strengthening employment security affects equilibrium unemployment. On the one hand, it becomes more costly for firms to dismiss staff, thus tending to reduce unemployment. On the other hand, higher costs of dismissing staff make it riskier to employ them, thus tending to increase unemployment. It is also unclear how labour-market programmes affect equilibrium unemployment. More extensive programmes can reduce the incentive for restraint in wage demands by diminishing the risk of becoming officially unemployed. At the same time, retraining programmes, for example, which increase labour supply where there are shortages, can lead to more modest wage increases. The net effect can thus vary for different kinds of labour-market programmes.

Figure 2



Short-term equilibrium unemployment is also affected by the rate of change in the economy, for example changes in productivity and labour supply as well as cyclical changes (see Figure 2). Structural changes lead to higher short-term equilibrium unemployment since it takes time for individuals to relocate and retrain. The speed of this process depends, among other things, on the rate of change in relative wages. The higher rate of unemployment can persist for several years. Generally, more rapid structural change means that matching job seekers with available vacancies will be more difficult; in part for this reason, shortages – accompanied by increases in wages and prices – will arise at a higher level of unemployment.

Similar reasoning is applicable to changes in labour supply. An increase in the labour supply, like a change in its composition, can lead to higher equilibrium unemployment. For exam-

ple, a large increase in the number of young, inexperienced persons on the labour market will tend to make the process of matching job seekers with vacancies less effective, contributing to higher short-term equilibrium unemployment. In the long run, however, the larger labour supply will lead to a corresponding increase in employment; in other words, long-term equilibrium unemployment will not be affected.

Cyclical variations can also affect short-term equilibrium unemployment. Researchers normally point to two kinds of reasons why a cyclical upturn in unemployment can be lasting.[5] One reason for higher short-term equilibrium unemployment is that persons unemployed for an longer period lose their skills and their foothold on the labour market, making it harder for them to compete there. This other is based on the assumption that wage formation is governed primarily by those who have jobs, the so-called "insiders". When employment decreases, there is a higher risk that "insiders" will lose their jobs. But once unemployment has stabilized at a higher level, those who are still employed do not perceive the risk of losing their jobs as particularly high. According to this theory, the risk of unemployment for an individual wage earner is linked more to changes in unemployment than to the level of unemployment. Therefore, consistently high unemployment need not have much effect on wages unless wage formation takes the situation of the unemployed fully into account. On that theory, wages are set at a level where those with jobs can keep them, but not low enough for persons who have lost their jobs to return to employment to a sufficient extent.

[5] See, for example, Blanchard, O. J. "Wage bargaining and unemployment presistence", *Journal of Money, Credit and Banking,* 23, 1991, and Bean, C. "European Unempolyment: A Survey", *Journal of Economic Literature,* 32, 1993.

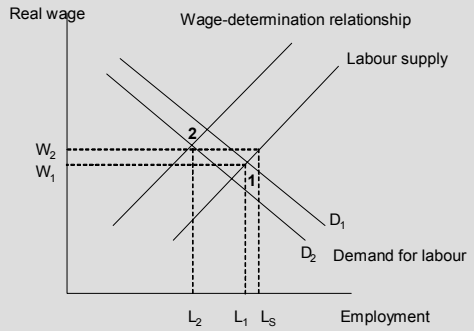
Equilibrium Unemployment

In this box, a model is described for determining the long-term equilibrium unemployment rate used in the KIMOD,[6] the NIER's macroeconomic model. In this model, there are two explanations why equilibrium unemployment arises. The first approach focuses on imperfect competition on the labour and product markets. The second is a complement to the first in that it introduces the search processes of the labour market as an additional source of unemployment. According to this model, long-term equilibrium unemployment is determined by a number of different factors that affect pricing, wage formation, the recruiting behaviour of firms and the search behaviour of the unemployed.

Real wages and employment are governed by factors that include competitive conditions on labour and product markets. Figure 3 shows the relationship between the real wage and employment. The labour-supply curve shows how many persons are willing to work at different real wages. A higher real wage means that more are willing to work; in other words, the curve has a positive slope. The labour-demand curve, D_1, shows how much labour is demanded at different real wages. A higher real wage means that firms will have fewer employees; in other words, the curve has a negative slope. If both firms and wage earners act under perfect competition, the real wage and employment will be determined by the intersection of these two curves at Point 1. Employment will be L_1 and the real wage, W_1. In this model, supply and demand are equal; in other words, equilibrium unemployment is zero.

Reality deviates from perfect competition in a number of ways. A common assumption is that prices on goods markets are determined under monopolistic competition, which means that the individual firm has some influence on the price of its product. It also means that the firm will set a higher price than under perfect competition, thus tending to depress the real wage. In Figure 3, this effect is shown by the location of the demand curve for monopolistic competition, D_2, below the demand curve for perfect competition, D_1.

Figure 3 Real wage and employment



On the labour market, wages are usually set in negotiations between unions and employers. Unions have considerable influence on wages since they can use their collective bargaining power. This means that the so-called wage-determination curve is located above the labour-supply curve in Figure 3; in other words, wage earners require a higher wage than with perfect competition. The positive slope of the wage-determination curve reflects the fact that the higher employment is, the more the union can push up wages. A contributing factor is that an employee who becomes unemployed has a better chance of finding new work when employment is high.

Where the labour-demand and wage-determination curves intersect, at point 2, with employment of L_2 and a wage of W_2, there is equilibrium. Employment is lower than with perfect competition (see Figure 3). Whether the real wage is higher or lower depends, among other things, on whether the imperfections are greatest on the product or labour market. If the curves shift as in the diagram, the real wage will be somewhat higher than with perfect competition. At this wage, the labour supply is L_s, in other words, L_s persons are willing to work, resulting in equilibrium unemployment of L_s–L_2. Unemployment is thus higher and employment lower than under perfect competition as a consequence of imperfect competition on the product and labour markets.

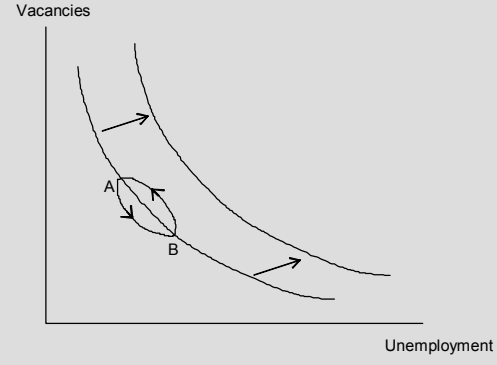
In the KIMOD, long-term equilibrium unemployment is also affected by the degree of difficulty in matching unfilled vacancies with job seekers. On the labour market, there are vacancies and unemployed persons at the same time. This situation reflects a process of constant matching, where new employment opportunities are created while other

[6] For a more rigorous analysis, see Lindén, J. "The labour market in KIMOD", Working Paper No. 89, 2004, NIER.

employment situations go out of existence, for instance when individuals leave their jobs or firms are closed down. The process of bringing together vacancies and unemployed persons takes time. Particularly during period of major structural change, the matching of job seekers and unfilled vacancies may be relatively time-consuming, one reason being a need to retrain unemployed persons.

The matching process on the labour market is often illustrated by the relationship between vacancies and unemployment, the so-called Beveridge curve (see Figure 4). The more vacancies there are, the greater the likelihood that a person will find work; in other words, the lower unemployment will be. The Beveridge curve therefore has a downward slope. Through studying the development of vacancies and unemployment, information can be obtained as to whether labour-market changes are cyclical or structural in nature. A cyclical change means that unemployment and vacancies move in opposite directions and after a transition period return to a given Beveridge curve. For example, decreasing demand in the economy leads to fewer vacancies, while unemployment rises. In Figure 4, this situation is shown by a downward movement from point A to point B along a given curve. When the economy begins to improve and demand starts rising, the number of vacancies increases and unemployment decreases, as shown by an upward movement back to point A. By contrast, when there is a structural change such as deterioration in the matching process due to diminished mobility of the labour force, for example, the Beveridge curve shifts outward. This means that a given number of vacancies is associated with higher unemployment.

Figure 4 Beveridge curve



The point where a given Beveridge curve corresponds to an equilibrium situation is determined through wage formation. The longer it takes for a firm to recruit appropriate labour, the greater the cost associated with hiring new personnel and the lower the assumed demand for labour. In Figure 5, the costs of matching lead to a shift in the labour-demand curve from D_2 to D_3. Long recruitment periods also make it more difficult to replace personnel that have left their jobs. Firms may then be forced to pay higher wages. This situation is shown in Figure 5, where the wage-determination curve shifts from the wage-determination relationship at point 2 to the relationship at point 3.

The intersection of the labour-demand and wage-determination curves shows equilibrium at employment level L_3 and wage level W_2. Employment is lower when costs of matching are introduced into the model; in other words, equilibrium unemployment is higher when so-called frictional unemployment is included. In combination with the given Beveridge curve, equilibrium unemployment reached in this manner also determines the equilibrium level of vacancies in Figure 4.

According to this theoretical framework, long-term equilibrium unemployment is set by underlying factors that govern pricing and wage formation, including the efficiency of matching between job seekers and unfilled vacancies. The real wage, however, is determined solely by pricing and wage formation, whereas vacancies are dependent on the efficiency of the matching process.

Figure 5 Real wage and employment with less efficient matching

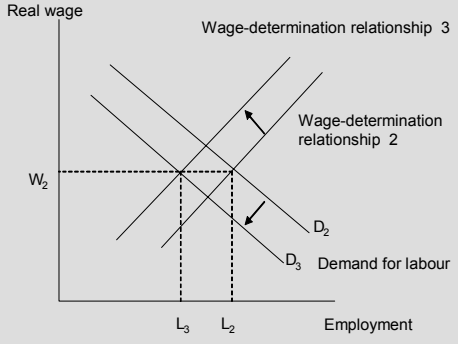
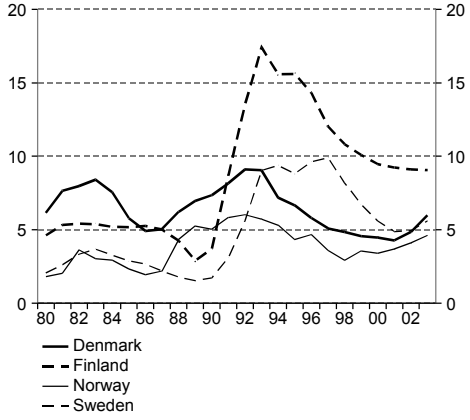


Diagram 14 Labour Supply and Number Employed
Millions

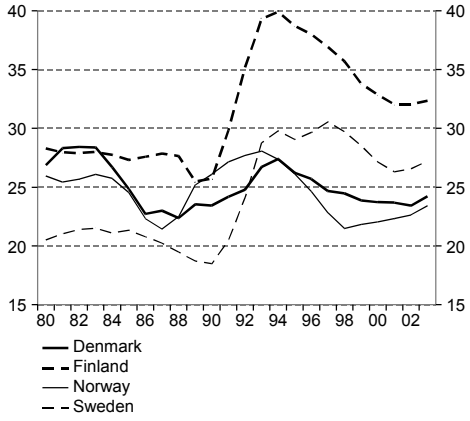
Source: Statistics Sweden.

Diagram 15 Unemployment Rate
Percent of labour force



Note: Unemployment according to ILO definition.
Source: OECD.

Diagram 16 Share of Population Aged 16–64 without Employment
Percent



Source: OECD.

Developments on the Swedish Labour Market

In the 1980's, Sweden had a low and stable unemployment rate of about 2 percent. At the same time, employment was continually rising thanks to the gradually increasing contribution of women to the labour supply (see Diagram 14). With the economic crisis of the early 1990's, however, conditions on the labour market changed dramatically. In 1990, 4.5 million persons were employed. Three years later, employment had plunged by more than 10 percent, and the unemployment rate had soared from around 2 to 8 percent.

When the economy expanded in the late 1990's, conditions on the labour market improved, and employment resurged. Unemployment went down in Sweden and has been comparable to that in the neighbouring Nordic countries of Denmark and Norway (see Diagram 15).[7]

The changes noted above concern the official unemployment rate, which is defined as the ratio between the number of unemployed persons and the labour force. In Sweden, the labour supply has shown a strong correlation with the cyclical phase of the economy (see Diagram 14). During periods of high unemployment, many persons see no point in looking for work. Quite a few choose studies or some other activity outside of the regular labour market. When demand for labour later picks up, a large number return to the labour market. Moreover, an increasing proportion of older persons leave the labour force early during periods of high unemployment. In addition, the number of participants in labour-market training programmes, who are not included in the labour force, is normally higher in economic downturns. Owing in part to these factors, the unemployment rare normally does not vary as greatly as employment.

The proportion of the population aged 16–64 who are not employed has risen to a persistently much higher level than in the 1980's. By comparison with other Nordic countries, Sweden and Finland show the highest proportions of nonemployed persons (see Diagram 16). The fact that the proportion of nonemployed has increased much more than the unemployment rate suggests that unemployment in Sweden has remained low from the 1990's on because a large proportion of those who have found it difficult to obtain work have left the labour force.

[7] Diagram 15 shows the unemployment rate as defined by the ILO. There are several other definitions of unemployment. For a person to be considered unemployed in the Labour Force Studies (LFS) of Statistics Sweden, three criteria must be met: an unemployed person must be willing to accept employment, be able to take a job and have actively looked for work in the past month. However, persons who state that they are full-time students are not regarded as unemployed even if these three criteria are fulfilled. On this particular point, unemployment according to the LFS differs from the ILO definition, whereby full-time students are also treated as unemployed if they meet the other criteria for that status.

In Diagram 17, persons outside the labour force have been classified into three groups according to their so-called principal activity: full-time students, sick persons and recipients of negotiated pensions, and others. Full-time students include participants in labour-market training programmes. Sick persons include individuals receiving disability pensions for health-related reasons. Other persons include, for example, homemakers and persons on leave. The group of full-time students shows a fairly clear cyclical pattern. The number of full-time students rose sharply in the early 1990's and dropped considerably during the economic upturn at the end of that decade. Any change in the number of full-time students, however, should be interpreted with caution since it is also affected by structural changes not directly related to the functioning of the labour market. One reason for the larger number of full-time students is that the demand for skilled labour has increased. This development, in combination with the trend toward a larger number of places at educational institutions, has contributed to longer periods of study and to a higher proportion of students at colleges and universities.

A more worrisome tendency is the marked increase in the number of sick persons and individuals on negotiated pensions. One explanation is that many persons registered as chronically ill, particularly in recent years, have left the labour force by becoming disability pensioners (see Chapter 3, "The Long Term Labour Supply").

Diagram 17 Persons Outside the Labour Force, Grouped by Primary Activity
Millions

Source: Statistics Sweden.

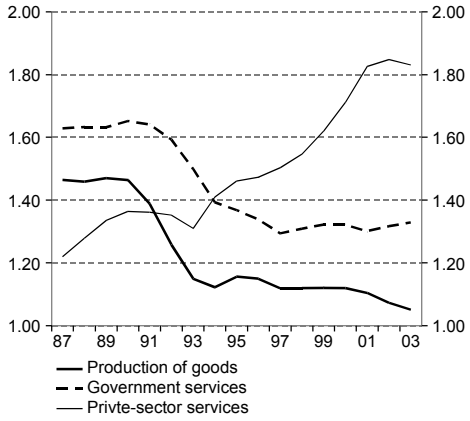
Structural Change and Labour Shortage

Particularly during periods of rapid structural change, it is important that the labour market function flexibly to assure sufficient mobility between industries, regions and occupations. Otherwise, there is a risk that unemployment and shortages will arise at the same time. Diagram 18 shows the development of unemployment and vacancies in a so-called Beveridge curve (see the box captioned "Equilibrium Unemployment" for a description of this relationship). In the 1980's, clear cyclical movements can be observed around a given Beveridge curve. In the early 1980's there was a drop in vacancies and a rise in unemployment; in the economic upswing in the second half of the 1980's, vacancies increased and unemployment decreased. This pattern reflects cyclical variations. With the economic crisis at the outset of the 1990's, however, the tendency was more dramatic. Between 1991 and 1995, the unemployment rate shot up by almost 5 percentage points, while the number of vacancies was virtually unchanged. This development can taken to mean that the matching of unemployed persons and unfilled vacancies became less efficient, or in other words that the Beveridge curve shifted outward. This interpretation is supported by subsequent developments. After the mid-1990's, vacancies have increased, but

Diagram 18 Beveridge Curve 1980–2003
Percent of labour force

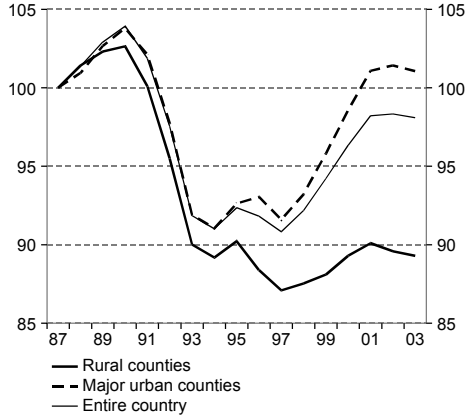
Source: Statistics Sweden.

Diagram 19 Number Employed in Different Industries
Millions



Source: Statistics Sweden.

Diagram 20 Number Employed
Index 1987=100



Note: The rural counties are Norrbotten, Västerbotten, Jämtland, Västernorrland, Gävleborg, Dalarna and Värmland. The major urban counties are Stockholm, Skåne and Västra Götaland.
Source: Statistics Sweden.

unemployment is higher than in the 1980's for the corresponding level of vacancies.

One factor that may help to explain the shift in the Beveridge curve is that the rate of structural change in the economy has gone up. Increased structural change makes is harder to match persons looking for work with available vacancies, limiting growth in employment and contributing to higher unemployment. Diagram 19 illustrates how employment in Sweden has developed in different industries between 1987 and 2003.[8] Structural change has meant less employment in the manufacture of goods and more in private-sector output of services. Structural change from production of goods to production of services was relatively slow at the end of the 1980's. One contributing factor was that the devaluations in the early 1980's and the international economic upswing toward the end of that decade favoured firms exporting manufactured goods, thus running counter to the shift from production of goods to production of services during that period. In the 1990's the rate of change was higher. Particularly in manufacturing, firms were forced out of business or into streamlining their operations during the economic slump of the early 1990's, and most of the increase in employment in the late 1990's was in private-sector services.

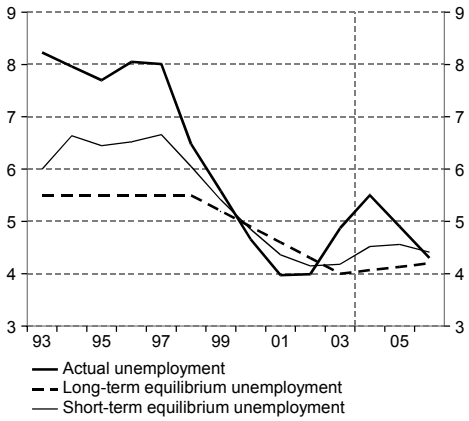
Greater Regional Imbalance

In the economic slump of the early 1990's, employment decreased and unemployment rose drastically in all regions (see Diagram 20). In 1991, the highest unemployment rate, about 5 percent, was in Norrbotten County. Two years later, the lowest unemployment rate, in Kronoberg County, was more than 6 percent. In the second half of the 1990's, the labour market improved, and employment went up. The increase in unemployment, however, was unevenly distributed throughout the country. Employment rose primarily in private-sector services in the major urban areas. This tendency was one reason why Stockholm, for instance, had a severe labour shortage and relatively low unemployment at the end of the 1990's, while in the forest counties vacancies were few and unemployment remained high. This suggests that regional imbalance may be a further reason why matching of job seekers and available vacancies did not function so well in the 1990's, thus curtailing the improvement in employment and contributing to higher unemployment.

[8] The sharp decrease in the number of employees in the general-government sector in the first half of the 1990's was due in part to the privatization of state-owned companies. For example, more than 50 000 postal employees changed from the government sector to the private sector in 1994.

The NIER's Assessment of Short Term and Long Term Equilibrium Unemployment

Diagram 21 Unemployment Rate
Percent of labour force



Sources: Statistics Sweden and NIER.

Both short-term and long-term equilibrium unemployment vary over time as the economy is subjected to different kinds of disturbances and structural conditions on the labour market change. Diagram 21 shows the NIER's overall assessment of short- and long-term equilibrium unemployment during the period 1993–2006. That assessment is based on various types of evaluations in regard to the functioning of the labour market and wage formation, the economic analyses presented in the box captioned "Three Econometric Estimates of Equilibrium Unemployment" and other indicators such as the responses to the questions on labour shortages in the Business Tendency Survey. [9]

The long-term equilibrium unemployment rate in the period 1993–1997 is judged to have been 5.5 percent. In accordance with the estimates in the box captioned "Three Econometric Estimates of Equilibrium Unemployment," the short-term equilibrium unemployment rate during this period is judged to have been somewhat higher. One reason is that because of the economic slump at the outset of the 1990's, in combination with rapid structural change, shortages accompanied by increases in wages and prices arose at a higher level of unemployment.

A number of factors suggest that both short-term and long-term equilibrium unemployment rates decreased from 1997 to 2003. First, the Industrial Agreement, together with subsequent agreements of this kind in other areas, are interpreted to mean that in wage formation more consideration will be given to the general economy, for instance by combining strong central co-ordination with relatively flexible local wage formation. Second, many persons have left the labour force as disability pensioners. This tendency has contributed to lower equilibrium unemployment since those who were unemployed before being granted a disability pension generally had relatively little chance of finding work. For example, many individuals have moved from unemployment to sick-listing and then to a disability pension. Third, the effects of the economic crisis of the early 1990's have begun to subside. This development has contributed to a decrease in the short-term equilibrium unemployment rate since some of

[9] In assessing equilibrium unemployment and thus resource utilization, the NIER uses a measure of unemployment termed "expanded unemployment". In addition to "open unemployment", this measure includes so-called latent seekers of employment. The latter group consists of full-time students who have looked for work as well as persons who state that they are willing and able to accept employment but for some reason have not looked for work in the past month. Expanded unemployment better reflects the quantity of unused resources on the labour market. For pedagogical reasons, however, this report uses the short-term and long-term open equilibrium unemployment rate. These series have been constructed from the calculated short-term and long-term expanded equilibrium unemployment rates in 1993–2006 reduced by 2.5 percentage points, equivalent to the difference between the expanded and open unemployment rates in 2003.

those who became unemployed in the 1990's have found new jobs after relocation or retraining, while those with the weakest connection to the labour market have left the labour force.

Owing to the economic downturn in recent years, with actual unemployment increasing, the short-term equilibrium unemployment rate has been rising slightly in 2003 and 2004. It is currently estimated at 4.5 percent, with a forecast decrease to 4.3 percent toward the end of 2006.

Based on a demographic projection, both short-term and long-term equilibrium unemployment are expected to go up slightly in the next few years. A large part of the explanation is that the foreign-born, who have higher unemployment, will constitute a growing proportion of the population aged 16–64 (see Chapter 3, "The Long Term Labour Supply").

Three Econometric Estimates of Equilibrium Unemployment

How well the labour market is functioning is reflected in so-called equilibrium unemployment, i.e. the unemployment rate consistent with 2-percent inflation. The NIER uses two different measures of equilibrium unemployment, the short-term and long-term equilibrium unemployment rates. Short-term equilibrium unemployment is the unemployment rate consistent with 2-percent inflation over a period of several years, given the disturbances currently affecting the economy. Long-term equilibrium unemployment is the unemployment rate toward which the economy gravitates in the long run under existing rules and institutions, provided no new disturbances occur (see the section headed "Flexibility Affects Equilibrium Unemployment" for a more detailed discussion).

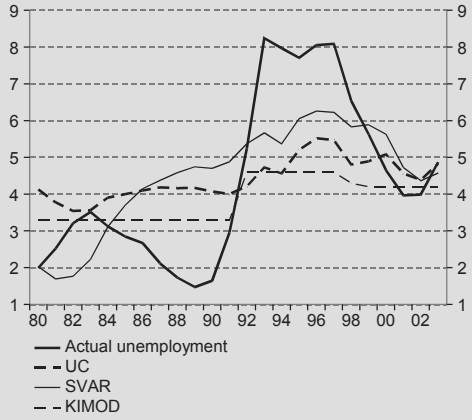
This box presents three economic estimates of equilibrium unemployment in Sweden during the period 1980–2003.[10] The three estimates yield rather similar results and are important supporting documentation for the NIER's overall assessment of short- and long-term equilibrium unemployment and thus of resource utilization in the economy.

In the so-called UC model,[11] unemployment is divided into a cyclical and a structural component. The cyclical component is the portion of unemployment correlated with changes in the inflation rate. Short-term equilibrium unemployment is the portion of unemployment compatible with unchanged inflation.[12]

In the so-called SVAR model,[13] short-term equilibrium unemployment is estimated with an economic model containing equations for supply, demand and the setting of prices and wages, as well as five kinds of disturbances: productivity, labour supply, demand, wage levels and profit margins. The method consists in calculating how high unemployment would have been in the absence of certain disturbances. In this model, short-term equilibrium unemployment is determined to be the unemployment rate that would prevail in the absence of disturbances from demand, wage levels and profit margins.[14]

In the third model, long-term equilibrium unemployment is estimated with the aid of the search and wage-formation model used in the NIER's KIMOD model.[15] In this model, long-term equilibrium unemployment is determined by underlying factors that govern pricing and wage formation and by the efficiency of matching between job seekers and available vacancies.

Diagram 22 Different Estimates of Equilibrium Unemployment
Percent of labour force



Sources: Statistics Sweden and NIER.

The first two methods provide relatively similar estimates of short-term equilibrium unemployment, while the third yields a less varied and on average somewhat lower estimate of long-term equilibrium unemployment (see Table 1 and Diagram 22). For most of the 1980's, actual unemployment was lower than both short-term and long-term equilibrium unemployment. Especially toward the end of the 1980's and in the early 1990's, actual unemployment was considerably lower. Actual unemployment, as well as short-term and long-term equilibrium unemployment, rose in the first half of the 1990's as a result of the severe economic crisis and rapid structural change. Since the end of the 1990's, both short-term and long-term equilibrium unemploy-

[10] The models have been estimated for both open and expanded unemployment (see Footnote 9 for a discussion of the difference between the two concepts of unemployment). Since the results are rather similar, only those for the open unemployment rate are presented.
[11] Unobserved Component Model.
[12] See Apel, M. and Jansson, P. "System Estimates of Potential Output and NAIRU", Working Paper No. 41, 1997, Sweden's Riksbank, for a detailed description of the method.
[13] Structural Vector Autoregressive Model.
[14] See Fabiani, S., Oneto, G. and Sestito, P. "The sources of unemployment fluctuations: An empirical application to the Italian case" Working Paper No 29, 2000, ECB, for a more detailed description of the model.
[15] See Lindén, J. "The labour market in KIMOD", Working Paper No. 89, 2004, NIER.

ment have dropped, for reasons that include increasing ill health and improved wage formation (see the section headed "Flexibility Affects Equilibrium Unemployment" for a more detailed discussion).

Table 1 Unemployment Rate

Percent of labour force

	1980–91	1992–98	1999–03
Short-term equilibrium unemployment			
SVAR	3.5	5.8	5.0
UC	4.0	4.9	4.7
Long-term equilibrium unemployment			
KIMOD	3.3	4.6	4.2
Actual unemployment	**2.4**	**4.6**	**4.6**

Sources: NIER and Statistics Sweden.

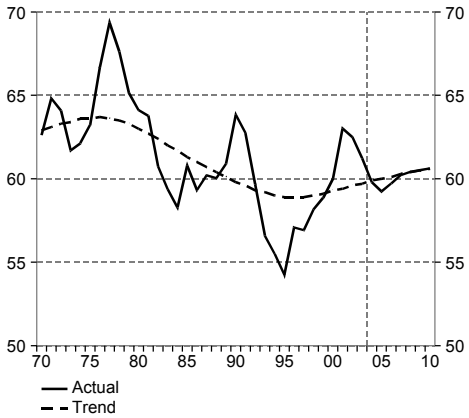
The fact that the two estimates of short-term equilibrium unemployment differ indicates that the results are sensitive to the choice of methods used, the specifications of the model and the assumptions otherwise made. In addition, unemployment in Sweden has developed in a rather special way. For a long time, the unemployment rate was around 2 percent; it then shot up in the early 1990's and thereafter dropped toward 4 percent. This path of development makes it difficult to make econometric estimates of stable relationships between a limited number of explanatory factors and calculated equilibrium unemployment. Estimates of short-term and long-term equilibrium unemployment should therefore be interpreted with caution.

2 Conditions for Wage Formation in the Business Sector

The margin for wage increases in the business sector is limited by the Riksbank's inflation target and the rate of return required by the international capital market. The inflation target means that consumption prices will increase by an average of 2 percent per year. The required rate of return means that investment in the Swedish business sector must be sufficiently profitable to compete internationally for investment capital. For wage formation, these two restrictions mean that payroll capacity (capacity to meet payroll costs, i. e. to pay wages and collective contributions) is limited. If the return on capital is on a par with the rate of return required internationally, labour costs can in principle increase only if the labour force becomes more productive or if prices in the business sector, measured as so-called value-added prices, go up. Under certain conditions, the rate of return required by international capital markets determines the labour-cost share of value added (see the box captioned "Payroll Capacity, Return on Capital and Labour Cost Share"). The labour-cost share is the mirror image of the profit share; in other words, if the labour-cost share increases, the profit share decreases. A high labour-cost share, in relation to its long-term equilibrium level or to other countries, may indicate that return on capital is too low. If so, labour costs must increase more slowly than payroll capacity in the business sector so that return on capital and labour-cost share can adjust to their equilibrium levels. For a transitional period, labour costs may increase more or less rapidly than payroll capacity, meaning that the labour-cost share varies (see Diagram 23). For the tendency to be sustainable, however, and with a required rate of return that is constant over time, labour costs must develop at the same rate as payroll capacity over a longer period.

This chapter analyzes first whether the Swedish business sector currently provides the internationally required rate of return on capital or whether an adjustment in labour costs is necessary to meet that condition. It then analyzes the long-term development of productivity and the value-added price. These analyses lead to a determination of the long-term payroll capacity of the business sector.

Diagram 23 Labour Cost Share – Business Sector
Percent of value added

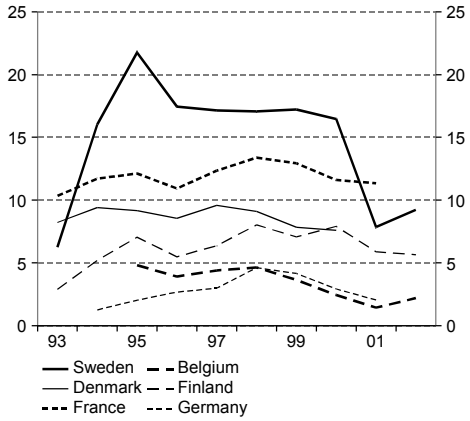


Note: Trend calculated with an HP filter.
Sources: Statistics Sweden and NIER.

International Conditions

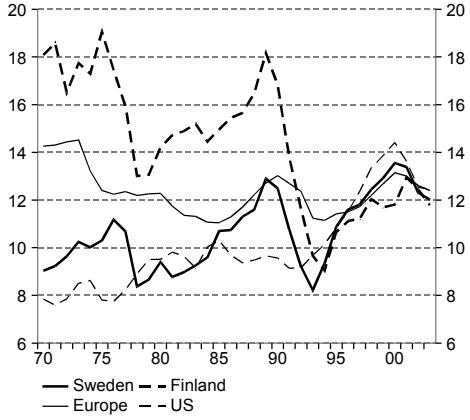
The business sector in Sweden is highly dependent on what happens in other countries. This is true not only for firms operating on goods markets where there is international competition; it also applies to other firms, such as those in various service industries, which are dependent on capital investment. Investors today have ample opportunities to invest capital where it earns

Diagram 24 Return on Capital – Manufacturing
Percent



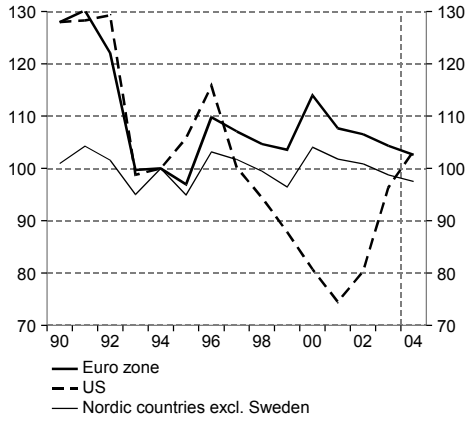
Source: OECD.

Diagram 25 Gross Fixed Capital Formation excl. Housing – Business Sector
Percent of value added



Source: OECD.

Diagram 26 Relative Unit Labour Costs in Common Currency – Business Sector
Index 1994=100



Source: OECD.

the best return, in a broad sense. Thus, investment in Sweden must offer a rate of return no lower than that of an equally risky investment abroad.

This section explores whether the return on capital in the Swedish business sector provides the internationally required rate of return, or in other words whether the level of labour costs is currently in balance or needs adjustment. Also provided is an assessment whether there are tendencies toward a change in the trend of this required rate of return, that is, whether the required rate will change between now and the year 2010. Four indicators are studied: profits in relation to the stock of capital, investment in relation to value added, unit labour cost in comparison with other countries and labour-cost share in proportion to value added.

Four Indicators of Return on Capital

The first indicator concerns the actual return on capital in Sweden and comparable countries. Diagram 24 shows the gross operating surplus (profit) in the manufacturing sector in relation to the stock of capital according to the National Accounts. By this indicator, return on capital in Swedish manufacturing in 2001 and 2002 was high compared to the rest of Europe but low compared to the Swedish average for 1993–2000. The comparison with other countries, however, is highly uncertain, one reason being difficulties in measuring the stock of capital.

A second indicator, and one with fewer problems of measurement, is the volume of investment in relation to output. If the rate of return were lower than in other countries for an extended period, the result would be less investment. Diagram 25 shows that investment in the Swedish business sector in recent years is at roughly the same level as in other countries. This suggests that the return on capital does not differ markedly from the internationally required level, or in other words that the level of labour costs is in balance.

A third indicator is the relative unit labour cost in the Swedish business sector. This indicator measures how Swedish labour costs, adjusted for productivity and the exchange rate, have developed in relation to labour costs in other countries (see also the section headed ”Wages, Labour Costs and Competitive Situation” in Chapter 5). The relative unit labour cost in 2004 is fairly close to the average for the period with a floating exchange rate, i. e. after 1992, compared to the euro zone and the US as well as the other Nordic countries (see Diagram 26). This indicator also shows that the current return on capital does not deviate markedly from the internationally required level.

A fourth indicator is the current labour-cost share in Sweden compared to other countries and previous years. One advantage of this indicator is that there are comparable data at the industry

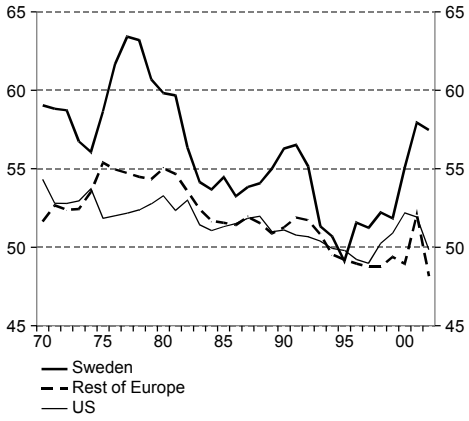
level and that it is not necessary to estimate the stock of capital, which is difficult to measure.

The labour-cost share in the business sector is shown in Diagram 27 for Sweden, the rest of Europe and the US.[16] Since the end of the 1970's, the trend in that share has been declining in all three areas. Possible explanations are an increasingly large stock of capital in relation to output, an increasingly high required rate of return and diminishing employee bargaining power. The declining trend has not been as clear since the mid-1990's. Though surrounded with considerable uncertainty, the assessment is that the declining trend has ceased and that the labour-cost share will vary around a constant equilibrium level in the future.

The labour-cost share was significantly higher in Sweden than elsewhere in the 1970's and 1980's. In the early 1990's, it dropped to the international level, but it has subsequently increased again and was considerably higher than in other countries in 2002. The increase is largely the result of rising labour-cost shares in the construction industry, and in trade, hotels and restaurants, where factors like the stock of capital in relation to output, as well as the degree of competition, can vary greatly from one country to the next. Given these conditions, international comparability is limited (see Diagram 28).[17]

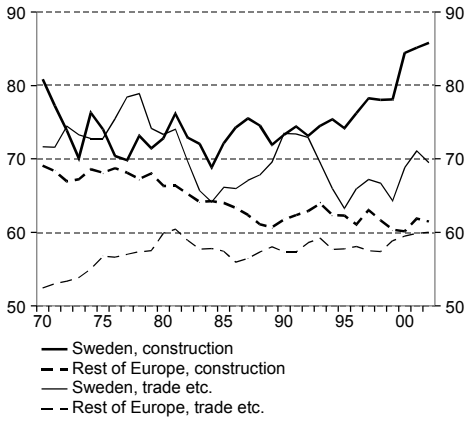
International comparisons are easier for manufacturing since production technology, like the degree of competition, is more similar from one country to the next. In the 1970's the labour-cost share was substantially higher in Sweden than elsewhere, leading to adjustment by devaluation of the Swedish krona in 1976, 1977, 1981 and 1982 (see Diagram 29). Large wage increases at the end of the 1980's resulted in an unsustainably high labour-cost share and thus a weakening of the krona when Sweden switched to a floating exchange rate in 1992. The upturn in 2001–2002 is explainable by the weakness of the telecommunication-products industry in these years. In 2002 the labour-cost share in Swedish manufacturing was high compared both to other countries and to the average for the latest ten-year period.

Diagram 27 Labour Cost Shares – Business Secor
Percent of value added



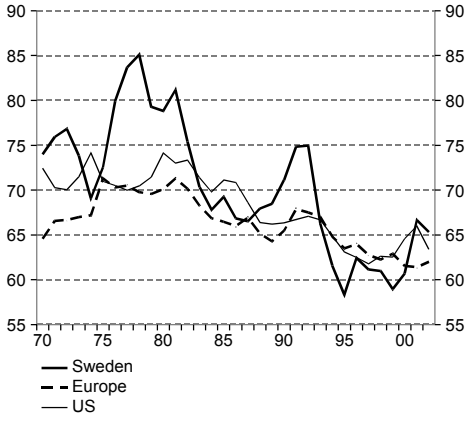
Source: OECD.

Diagram 28 Labour Cost Shares – Construction and Trade, Hotels and Restaurants
Percent of value added



Source: OECD.

Diagram 29 Labour Cost Shares – Manufacturing
Percent of value added



Source: OECD.

[16] Here data from the OECD *STructural ANalysis (STAN) database*, June 2004, are used. It should be noted that the labour-cost share is measured in different ways in the OECD database and in the Swedish National Accounts. The level in Diagram 23 is consequently 5 percentage points higher on average than in Diagram 27. The level for the rest of Europe is an average for Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands and the United Kingdom.

[17] For these industries, which are not directly exposed to international competition, the labour-cost share may differ from the international level without return on capital being too low. The reason is that prices can be correspondingly higher so that the profit level is still in line with the internationally required return on capital. In the construction industry, the level in Sweden differs conciderably from that in Europe, but equally high labour-cost shares are reported for the construction industry in Canada and Japan. The high labour-cost shares relative to Europe in trade, hotels and restaurants may be due to relatively low wage differentials in Sweden, meaning that wages like prices in these low-wage industries may be high compared to the European average.

Diagram 30 Labour Cost Shares –- Manufacturing excl. Telecommunication Products
Percent of value added

Source: OECD.

With the telecommunication-products industry excluded, however, the labour-cost share was relatively low (see Diagram 30).[18]

The conclusion is that in 2002 the labour-cost share was at a sustainable level in Swedish manufacturing aside from the telecommunication-products industry. Thus, this fourth indicator also suggests that return on capital in Sweden does not deviate markedly from the internationally required level, at least if the telecommunication-products industry is excluded.

In summary, the four indicators discussed above show that the return on capital in Sweden in 2002–2004 is not substantially different from the internationally required rate. Labour costs are thus at a balanced level. The labour-cost share for the business sector as a whole was 62.5 percent in 2002 and 61.2 percent in 2003, and is forecast to decrease to 59.8 percent in 2004 when profits in the telecommunication-products industry return to normal (see Diagram 23). Given these circumstances, it is assumed that the equilibrium level of the labour-cost share in the Swedish business sector will be constant at 61 percent in 2004–2010. In the main scenario presented in Chapter 6 for the development of the economy until 2010, the labour-cost share adjusts to this equilibrium level by 2010.

[18] Sales revenue in the telecommunication-products industry decreased radically in these years, while wage costs did not go down so much. The labour-cost share then rose sharply, particularly in Sweden. In combination with programs to improve efficiency, the recovery that has already occurred in the industry and that can be expected to continue means that the labour-cost share will go down again.

Payroll Capacity, Return on Capital and Labour Cost Share

This box first sets forth the conditions that must be present for equal labour-cost shares in two countries to be a good indication that the return on invested capital is the same in those countries. The box also explains what factors affect the payroll capacity of firms if return on capital is given and constant over time. Here a mathematical model is used which is consistent with fundamental economic theory and which also provides the basis for the National Accounts.

Labour Cost Share as an Indicator of Return on Capital

The value added (at so-called factor prices) by a firm's output is divided between the production factors of labour and capital. Formally, this relationship is usually expressed as

$$pY = wL + rK,$$

where pY is value added, wL is labour costs (i. e. wages and collective contributions) and rK is operating surplus. Value added in real terms is designated by Y, the number of work hours used in production by L and the firm's real capital by K. The value-added price, the hourly cost of labour and the return per unit of capital are designated, respectively, by p, w and r.[19] The labour-cost share (α) is then

$$\alpha = \frac{wL}{pY}.$$

This expression can be rewritten as[20]

$$\alpha = 1 - \frac{r}{p}\left(\frac{K}{Y}\right),$$

which states that the labour-cost share is determined by the capital-output ratio (K/Y), assuming the return on capital (r/p) is given.

The capital-output ratio naturally differs between individual firms and countries. It may be reasonable to assume at the outset, however, that the manufacturing industry in the OECD countries compared in this section has access to the same production technology, and that firms can make equally good use of this technology. In international comparisons of the manufacturing industries as a whole, it may then be reasonable to assume that the capital-output ratio does not differ significantly in the long run. This means that if the return on capital is set by the international capital market, the labour-cost shares will be equal in the long run. The condition that must be present for the labour-cost share to be a good indicator of the return on capital (r/p) in different countries is thus that the capital-output ratios there may be assumed to be at the same level.

Payroll Capacity at a Given Rate of Return

If the conditions stated above are met, and there is an internationally given return on capital, the labour-cost share is also given. If in addition the economy is in long-term equilibrium and the return on capital is constant over time, the labour-cost share is also constant over time. The payroll capacity of firms then increases by the sum of the firm's price increases and growth in productivity.

This can be explained formally if the expressions noted above are written as

$$w = p\alpha\left(\frac{Y}{L}\right).$$

If the labour-cost share is given, then

$$\frac{\Delta w}{w} = \frac{\Delta p}{p} + \frac{\Delta\left(Y/L\right)}{\left(Y/L\right)},$$

in other words, labour costs increase by the sum of the growth rates for the value-added price and labour productivity.

The payroll capacity of firms thus rises by the rate of price increases plus the rate of productivity growth if the required return on capital is given and constant over time.

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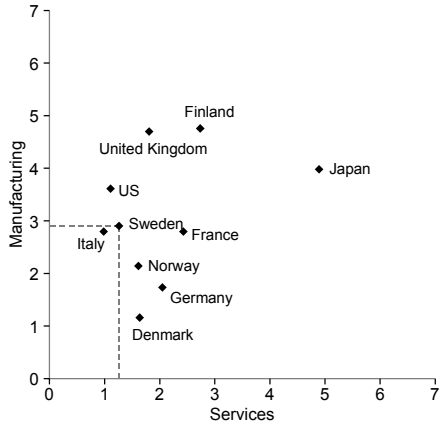
[19] The letter r actually designates the price (in SEK) paid by the firm to rent a unit of capital; r/p is this price in real terms. This is equal to the return to investors.

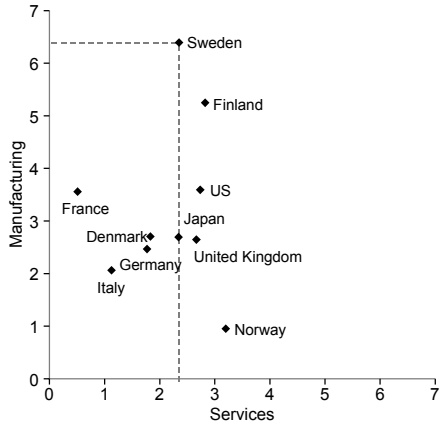
[20] $\alpha = \frac{wL}{pY} = \frac{pY - rK}{pY} = 1 - \frac{rK}{pY}$

Diagram 31 Productivity – Business Sector 1981–1990
Annual percentage change



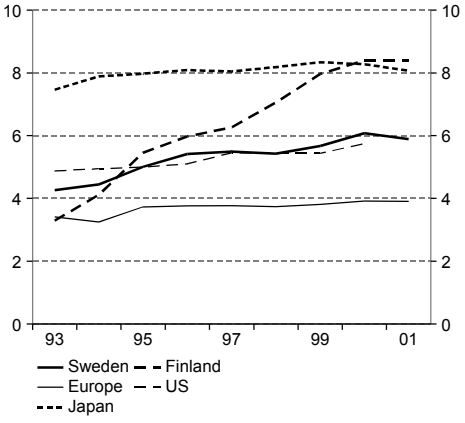
Note: Value added per employee.
Source: OECD.

Diagram 32 Productivity – Business Sector 1991–2001
Annual percentage change



Note: Value added per employee.
Source: OECD.

Diagram 33 Number Employed in Telecommunication Products Industry, Share of Total for Manufacturing
Percent



Note: Europe excl. Finland and United Kingdom.
Källa: OECD.

Labour Productivity

With a given labour-cost share, the payroll capacity of firms rises by the sum of the increase in value-added price and the growth in labour productivity (see the box captioned "Payroll Capacity, Return on Capital and Labour Cost Share"). Thus, the development of productivity is an important factor in forecasting and determining the rate of wage increases.

Strong Swedish Productivity Growth in an International Perspective

In the 1990's, the productivity of the business sector increased much faster in Sweden than in other countries (see Table 2).[21]

Table 2 Productivity – Business Sector
Annual percentage change

	1981–90	1991–01
Sweden	**2.1**	**3.3**
Denmark	1.7	2.2
Finland	3.2	3.3
France	2.7	1.2
Germany	1.5	1.9
Japan	4.3	1.7
United States	1.5	2.5

Note: Business sector excl. agriculture, forestry, fisheries and real estate. Labour productivity measured as value added per employee.
Source: OECD.

Diagrams 31 and 32 show the growth in labour productivity in manufacturing and in the service industries of the business sector in the 1980's and 1990's.[22] As can be seen, productivity in Swedish manufacturing rose rapidly in the 1990's, compared both to the 1980's and to other countries. Part of the explanation is that Sweden is overrepresented in the telecommunication-products sector, where the productivity tendency has been extremely strong. The same is true for Finland, which also has a large telecommunication-products sector (see Diagram 33).

Productivity growth in service industries was also high in Sweden in the 1990's, compared both with the 1980's and with other countries. One explanation may be the massive IT in-

[21] It is difficult to compare productivity between countries over time, particularly if the comparison is between different sectors of the economy. First, the definitions in the National Accounts may vary between countries. Second, the size of the general-government sector's commitments may make it hard to compare productivity growth, for instance in the business sector. For example, the degree to which health care is in private hands varies from country to country; thus, it is included in the business sector in some countries and in the general-government sector in others.

[22] Labour productivity measured as value added per employee. Measured per hour, the differences are somewhat less.

vestment in Sweden. Another may be that the service sector has been more exposed to competition in Sweden than in many other countries. It should be emphasized, however, that productivity in the service sector is difficult to measure.

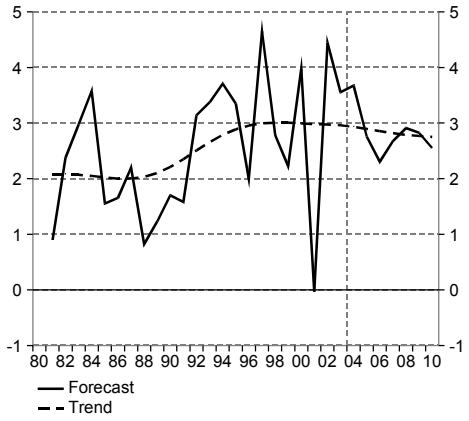
An important question is whether Sweden will continue to show higher productivity growth than other countries. The answer will depend largely on whether Sweden will remain overrepresented in the telecommunication-products sector and whether the strong productivity growth in that sector will persist. The value-added price of telecommunication products has fallen sharply because of the adjustments for quality made by Statistics Sweden to compensate for the higher capacity of newer telecommunication products compared to older ones. This means that the productivity growth measured will be relatively high, even if the increase in the nominal value-added price is only modest. For the period until 2010, there is no reason to believe that the technological development of telecommunication products will cease or that Sweden will no longer be overrepresented in telecommunication products. Therefore, productivity growth in Sweden will probably be higher than in other countries in the next few years as well.

Swedish Productivity Growth

The high productivity growth of recent years in Sweden has had strong cyclical elements (see Diagram 34), but has also raised the question whether the growth trend for productivity is higher than in previous assessments. This year the principal explanation for the extremely strong growth in manufacturing is the recovery in the telecommunication-products sector. To assess the Swedish productivity trend until 2010, historical developments are analyzed with regard to what is permanent and what is temporary productivity growth.

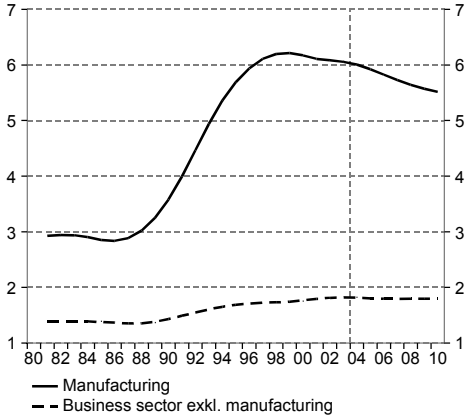
Compared to the 1980's, the growth trend in productivity is higher both in manufacturing and in most service industries (see Diagram 35 and Table3). One explanation may be that the business sector has become more exposed to competition than in the 1980's, particularly in trade and the consumption-goods industry, thus encouraging growth in productivity. The increase in productivity growth in business services in the last couple of years is due largely to the fact that the so-called services-price index, i.e. producer price index for services, has come into use; this index takes greater account of changes in productivity (see Diagram 36). The effect will be lasting, and as the services-price index is introduced in more areas, the productivity recorded will increase in more of the service industries. The net effect for the business sector as a whole, however, will be relatively minor (see the box captioned "The Value Added Price in the National Accounts").

Diagram 34 Labour Productivity – Business Sector
Annual percentage change, calendar-adjusted



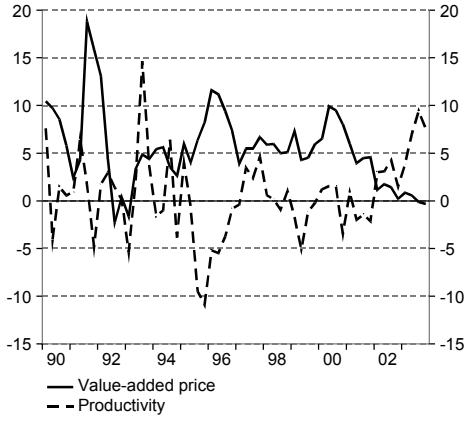
Note: Trend calculated with an HP filter.
Sources: Statistics Sweden and NIER.

Diagram 35 Trends in Labour Productivity
Annual percentage change



Note: Trend calculated with an HP filter.
Sources: Statistics Sweden and NIER.

Diagram 36 Business Services
Annual percentage change, quarterly values



Source: Statistics Sweden.

On the other hand, a portion of the rise in productivity growth since the 1980's is considered temporary. In the first half of the 1990's, productivity surged because of structural change and the elimination of low-productivity firms during the crisis of that decade. The second half of the 1990's featured the exceptionally rapid growth of the telecommunication-products sector, where productivity also showed an extremely strong increase. By comparison with this period, it is expected that productivity growth will be somewhat less and that this subsector will constitute a smaller share of the business sector. It is probable, moreover, that IT investment in the service industries gradually contributed to higher productivity growth in the 1990's. An example is the introduction of computerized cash registers. It is judged that the productivity gains from increased computerization have already been realized to a large extent. For that reason, productivity growth will be somewhat more subdued in the future. All factors considered, the trend rate of productivity growth in the business sector, excluding telecommunication products, is forecast to be 2.2 percent per year in 2004–2010.

With a relatively cautious assessment for the telecommunication-products sector, productivity in the business sector as a whole will increase by an annual average of 2.8 percent in 2004–2010.

Table 3 Development of Productivity – Business Sector

Annual percentage change

	1981–92	1993–03	2004–10	Long run
Business sector	2.0	3.1	2.8	2.4
Manufacturing	2.7	6.3	6.1	4.0
Business sector excl. manufacturing	1.4	1.9	1.7	1.8
Business sector excl. telecommunication products		2.4[1]	2.2	2.2
Manufacturing excl. telecommunication products		4.1[1]	3.7	3.3

[1] 1994–2003.

Note: Labour productivity measured as value added per hour worked.

Sources: Statistics Sweden and NIER.

In the long run, the importance of the telecommunication-products sector is expected to diminish, whereas the services sector will become increasingly significant, a development that will mean lower growth in productivity. The long-term growth rate for business-sector productivity is estimated at 2.4 percent.

The Value Added Price in the National Accounts

The value added in the business sector, according to the National Accounts (NA), is calculated as the difference in value between the goods and services produced (gross output) and the consumption of inputs, i.e. the goods and services consumed in producing output. The latter may include, for example, rent for facilities, expendable supplies and energy. This consumption accounts for more than half the value of the gross output of the business sector (see Table 4). Value added is thus the net output of the business sector and is divided mainly between labour costs and gross surplus (profit).

Statistics Sweden gathers data on prices of goods and services so that gross output and consumption of inputs can be calculated in both current and constant prices. Value added in constant prices is calculated as the difference between gross output and consumption of inputs in constant prices. The ratio between value added in current prices and in constant prices provides an implicit price index, the so-called value-added price. This means that a rising price of gross output (product price) will increase the value-added price. Since consumption of inputs is deducted from gross output in computing value added, a rising price of inputs consumed (input price) means a lower value-added price. This year product prices are expected to go up by 1.8 percent, but input prices to rise almost a percentage point faster. Consequently, the value-added price will increase by only 0.6 percent (see Table 4).

Table 4 Value Added – Business Sector

Billions of SEK and percentage change

	Current prices		Constant prices[1]		Percentage change, 2004		
	2003	2004	2003	2004	Value	Volume	Price
Gross output	3 741	3 954	3 741	3 885	5.7	3.9	1.8
Consumption of inputs	2 102	2 232	2 102	2 174	6.2	3.4	2.7
Value added	1 639	1 722	1 639	1 711	5.1	4.4	0.6

[1] Reference year 2003.

Sources: Statistics Sweden and NIER.

Gross output, consumption of inputs and value added are first calculated in current prices. The separation into change in volume and change in price is done with the aid of a price index based on responses to separate questionnaires: the *Producer Price Index*. For a given development expressed in current prices, the development of volume is thus affected by the estimated development of prices. If the value-added price increases more slowly, the growth in volume, and thus in productivity, will be higher, and *vice versa*.

For many products, rapid changes in product quality make it difficult to estimate the development of prices, which should apply for comparable goods and services. If the content of a good or service, i. e. its quality, changes, the price should be adjusted to a level appropriate to unchanged quality. This principle follows international conventions for calculating the development of prices and thus of volumes in the National Accounts. The calculations, however, are uncertain, and the methods differ considerably between countries and industries, as well as over time.

For Sweden, telecommunication products are a relevant instance where quality has rapidly improved and the price is difficult to estimate. In practice, quality-related adjustments for these products have meant declining prices. A recently observed measurement problem in this regard concerns the development of prices for electronic components (SNI321). These are almost exclusively imported and are consumed as inputs in the telecommunication-products sector and elsewhere. If quality improvements in electronic components have been underestimated, as has been maintained recently, the development of prices of imported inputs has been overstated. This means in turn that value added in constant prices and thus productivity growth in the Swedish business sector have also been overstated. [23] It is important to remember that the development in current prices is not affected by this problem of measurement. Thus, payroll capacity is not affected, either. The development of Sweden's terms of trade with other countries (i. e. the price of exports divided by the price of imports) would improve to exactly the same extent. Thus, Sweden's purchasing power in real terms would be unaffected.

Another industry where measurement of prices is difficult – and very important – is business services. For the past few years, Statistics Sweden has been working to develop direct measures of prices for industries that produce business services. In the business-services industry, the so-called services-price index, i.e. producer price index for services, has replaced the development of wages as the deflator for calculating growth in value added in constant prices. So far, the services-price index has been introduced in such areas as computer and related activities and legal services. With the new price index, the value-added price increases much more slowly than before, when the wage index was used (see Diagram 36). This means that value added in constant prices, and thus productivity, according to the NA is now increasing much more rapidly. In the future, more service-price indices will be introduced, further increasing measured productivity growth in business services. Just as with electronic compo-

[23] According to Edqvist, H. "Det svenska IKT-undret – myt eller verklighet?" (The Swedish IT Miracle – Myth or Reality), *Ekonomisk Debatt,* 5, 2004, Statistics Sweden underestimates quality improvements in electronic components, thereby overestimating annual productivity growth in manufacturing by 1–2 percentage points in 1997–2000.

nents, however, the tendency in current prices, and thus payroll capacity, is not affected by this change.[24] Nevertheless, these changes in method are of major importance in forecasts and comparisons between countries and over time.

[24] Furthermore, most of the output of the business-services industry is used as inputs in the rest of the business sector. The introduction of the services-price index then means that the consumption of inputs measured in the rest of the business sector will be increasing more rapidly and thus that value added in constant prices will be increasing more slowly. The net effect on GDP growth in constant prices is therefore likely to be limited.

Diagram 37 Producer and Consumer Prices
Annual percentage change, quarterly values

Source: Statistics Sweden.

Relative Prices and Terms of Trade

The tendency of the long-term payroll capacity of firms is determined by the development of productivity and of value-added prices. The Riksbank's target is for consumption prices to increase by 2 percent per year. This section analyses the degree of increase in value-added prices that is compatible with an annual increase of 2 percent in consumption prices. Value-added prices measure the prices of everything produced by the business sector, including goods and services for consumption as well as those used in investment and exports. To the extent that there are long-term differences between changes in the value-added prices of the business sector and in consumption prices, these differences must be considered in assessing the development of the payroll capacity of firms.

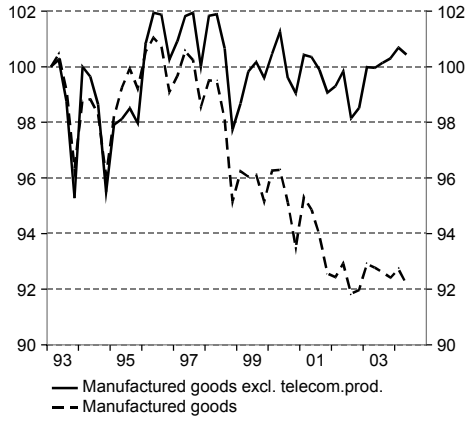
Since the early 1990's, underlying consumption prices as measured by the UND1X have increased faster than the value-added price of the business sector (see Diagram 37). The difference in the last 11 years has averaged 0.8 percentage point (see Table 5) and depends on several factors. These include variations in the effect of changes in terms of trade (i. e. prices of exports divided by prices of imports) and in the exchange rate, differences in product mix and differences in calculation methods. Of these factors, the one with the greatest impact since 1993 has been the terms of trade.

Continued Deterioration in Terms of Trade

If productivity in the business sector increases, the real scope for wages will increase to the same degree, assuming given terms of trade. However, if the terms of trade deteriorate at the same time, payroll capacity will be reduced. For example, if the price of Swedish exports falls, the profitability of exporting firms will decrease, and there will be downward pressure on wages in the export sector. Lower wages in that sector will then spread to the rest of the economy.

The decline in Sweden's terms of trade since the mid-1990's is due primarily to the fact that in relation to other countries it has a large telecommunication-products sector where prices have dropped sharply. At the same time, productivity growth has surged in this sector, offsetting the effect of declining prices on the payroll capacity of firms. Aside from the telecommunication-products sector, the terms of trade for manufactured goods have been virtually unchanged since the mid-1990's (see Diagram 38). Sweden's terms of trade will probably continue to deteriorate because of the country's large telecommunication-products sector. In 2004–2010, however, it is estimated that domestic demand will increase strongly, pushing up costs in the export sector. As a result, exporting firms will charge higher prices than they would otherwise, limiting both exports and the decrease in

Diagram 38 Terms of Trade
Index 1993=100, quarterly values



Note: Terms of trade = price of exports/price of imports.
Source: Statistics Sweden.

the terms of trade. On average, the terms of trade are expected to deteriorate by 0.3 percent per year, mostly because of decreasing prices of telecommunication products.

Prices to Producers Increasing Less Than to Consumptions

The deterioration in terms of trade is one of the principal explanations why value-added prices have been increasing more slowly than consumption prices since 1993. The reason is that prices of exports are included only in the value-added price, whereas prices of imports have their greatest effect on the UND1X, 30 percent of which consists of imported goods and services. When the terms of trade worsen, value-added prices will normally increase more slowly than the UND1X.

Unexpected short-term variations in the exchange rate have historically had a greater impact on value-added prices than on the UND1X. With the weakening of the Swedish krona in the 1990's, value-added prices therefore increased more than the UND1X, partly compensating for the negative contribution from the deterioration in the terms of trade.

Table 5 Prices

Annual percentage change and difference in percentage points, respectively

	1981–92	1993–03	2004–10	Long run
Value-added price, business sector	6.7	1.3	1.4	1.9
Terms of trade	0.3	–1.2	–0.3	0.0
Exchange rate	2.7	2.2	–0.5	0.0
Consumption prices according to UND1X	6.8	2.1	1.8	2.0
Difference between value-added price and UND1X	–0.1	–0.8	–0.4	–0.1
Contribution to difference[1]				
Terms of trade and exchange rate	0.2	–0.5	–0.2	0.0
Product mix	–0.1	–0.1	–0.1	–0.1
Differences in method	–0.2	–0.2	0.0	0.0

[1] Because of rounding, the sum of contributions may not equal the total difference.
Sources: Statistics Sweden and NIER.

In 2004–2010, the combination of weaker terms of trade and a stronger krona will give rise to an estimated annual difference of –0.2 percentage point between the development of value-added prices and UND1X inflation.

Services account for a larger share of consumption than of production. With the weaker productivity tendency in the services sector, there is thus an additional difference between the development of value-added prices and UND1X inflation. This

difference has been present in the past and will continue, contributing –0.1 percentage point per year to the total difference between the development of value-added prices and UND1X inflation.

For the period through the end of 2004, different calculation methods will give rise to a difference between the increase in value-added prices and UND1X inflation. In the calculation of UND1X inflation, consideration is not given to changes in consumption behaviour due to changes in relative prices; for example, consumptions increase their consumption of goods and services with more slowly rising prices. Owing to differences in methods, average UND1X inflation is 0.2 percentage point higher per year than the increase in value-added prices, where this type of effect is included.

Beginning January 1, 2005, however, a new method of calculating UND1X inflation will be used. In this method such effects are considered (see the box captioned "Changes in Methods of Calculating Inflation and the CPI" in *The Swedish Economy –June 2004*). The change in method means that the methods used in calculating changes in consumption prices and in value-added prices will be more similar. Since the Riksbank has chosen to keep the inflation target at 2 percent, the UND1X will be allowed in practice to increase somewhat faster than if the method of calculation had not been changed. Consequently, in the long run the payroll capacity of firms will also increase by 0.2 percentage point per year compared to what it would have been with no change in the method of calculation. Thus, the contribution from the difference in method will no longer be present.

In the long run, UND1X inflation is expected to be in line with the Riksbank's target of 2 percent. Both the terms of trade and the exchange rate are assumed to be constant. Since consumption is also expected to have a larger proportion of services than production in the long run, value-added prices will increase at a rate 0.1 percentage point less than the UND1X, or by 1.9 percent per year (see Table 5).

In 2004–2010 the average rates of increase in both the UND1X and value-added prices will be slightly less than their long-term rates of increase. Because of low resource utilization and low prices of imports, UND1X inflation is currently modest, but it will gradually approach 2 percent in the next few years.

Payroll Capacity in the Business Sector

If the labour-cost share is unchanged, labour costs will increase by the sum of the rates of increase in productivity and in the value-added price. In industries with relatively high growth in productivity, the rate of price increases tends to be relatively low. Thus, payroll capacity in different industries increases at approximately the same rate, particularly in the long run (see

Table 6). Consequently, the change in payroll capacity can in principle be derived either from the entire business sector or from portions of it. For example, the higher productivity growth in the telecommunication-products sector did not lead to a corresponding increase in payroll capacity since the value-added price decreased. For this reason, the development of payroll capacity for the forecast years can be calculated for the business sector as a whole.

Table 6 Payroll Capacity – Business Sector, 1994–2003

Annual percentage change

	Value-added price	Productivity	Payroll capacity
Business sector	1.1	3.1	4.2
Business sector excl. telecom products	1.9	2.4	4.3
Manufacturing	–1.4	6.2	4.8
Manufacturing excl. telecom products	1.0	4.1	5.1
Business sector excl. manufacturing	2.2	1.8	4.0

Sources: Statistics Sweden and NIER.

During the period 2004–2010, business-sector productivity is forecast to rise at an annual rate of 2.8 percent (see Table 3), while the rate of increase in value-added prices is forecast to be 1.4 percent (see Table 5). Thus, payroll capacity in the business sector, given a constant labour-cost share, will go up by 4.2 percent per year. During this period, productivity growth is expected to be higher, but the increase in prices lower, than in the long run (see Table 7). All factors considered, payroll capacity is anticipated to increase somewhat more slowly during 2004–2010 than in the long run.

Table 7 Payroll Capacity – Business Sector

Annual percentage change

	1981–92	1993–03	2004–10	Long run
Productivity	2.0	3.1	2.8	2.4
Value-added price	6.7	1.3	1.4	1.9
Payroll capacity	8.7	4.4	4.2	4.3

Sources: Statistics Sweden and NIER.

Based on the four different indicators presented in the beginning of this chapter, the assessment is that the return on capital in the Swedish business sector in 2002–2004 does not deviate markedly from the internationally determined rate – in other words, labour costs are at a balanced level – and that the equilibrium level of the labour-cost share in 2004–2010 will remain constant at 61

percent. Since the labour-cost share was 61.2 percent in 2003, this means that labour costs on average can increase at the same rate as payroll capacity, or by 4.2 percent per year in 2004–2010, without the labour-cost share deviating from its equilibrium in 2010. Given such a tendency, the return on capital, and thus labour costs in the Swedish business sector, will also be at internationally competitive levels in the final year of the period, 2010. With the development forecast for 2004–2010, the labour-cost share will be 61 percent in 2010; thus, the return on capital and labour costs will be internationally competitive in that year (see Chapter 6, "The Main Scenario for Wage Formation, 2004–2010").

3 The Long Term Labour Supply

The supply of labour in the long term is of central importance. Together with long-term equilibrium unemployment, it determines the level of employment and is thus crucial for GDP and welfare in the long run (for a discussion of the factors that determine equilibrium unemployment, see Chapter 1, ”The Swedish Labour Market”).

The long-term development of the labour supply, in regard both to number of persons and to number of hours worked, is highly influenced by the tendency and composition of the population. In the working-age population (ages 16–64), both labour-force participation and average hours worked are lower in the younger and older age groups, owing to studies and retirement on disability pensions for example, than in age group 25–54. In the future, the composition of the working-age population will feature a decreasing proportion of persons aged 25–54 and an increasing proportion of persons born abroad. Both these factors will negatively affect growth in labour supply. If the foreign-born are not integrated into the labour market to a higher extent, there will be little if any increase in employment and hours worked in coming decades.

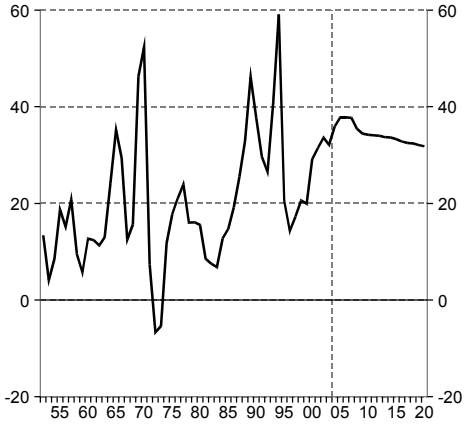
The trend described in this chapter deviates from the NIER’s forecast, which is presented in Chapter 6, ”The Main Scenario for Wage Formation in 2004–2010”. In the main scenario, consideration is also given to cyclical variations in such factors as labour supply and unemployment.

Changing Age Distribution and Higher Proportion of Persons Born Abroad

In the next five years, the working-age population in Sweden will increase by an average of some 33 000 persons per year, according to the population forecast by Statistics Sweden. Thereafter, the tendency will stagnate, and from 2010 to 2013, the population aged 16–64 will decrease.

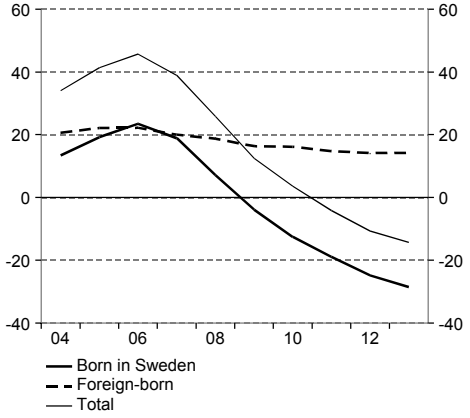
In the Swedish population, the number of persons born abroad is continually increasing. Statistics Sweden assumes in its population forecast that net immigration of foreign-born persons will average about 35 000 per year. Immigration to Sweden is influenced by many factors, such as the system of regulations for migration and the networks built up by persons in countries with substantial emigration and in Sweden through previous immigration. The net immigration of foreign-born has shown an increasing trend in the last 50 years (see Diagram 39). The assumptions of Statistics Sweden regarding immigration are based

Diagram 39 Net Immigration of Foreign Born
Thousands



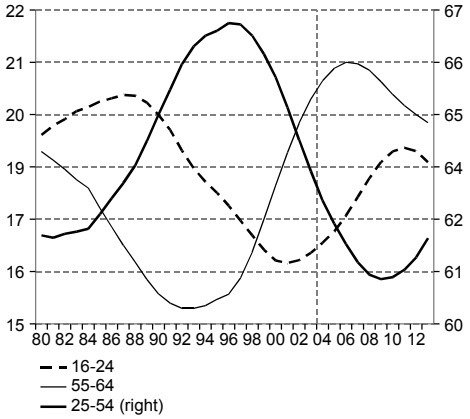
Source: Statistics Sweden.

Diagram 40 Population Aged 16–64
Change in thousands



Sources: Statistics Sweden and NIER.

Diagram 41 Population in Different Age Groups
Percent of population 16–64



Source: Statistics Sweden

on long-term net immigration equal to the average for the last 20 years.[25]

The number of foreign-born persons of working age is expected to increase by an average of 17 000 persons annually in the next ten years, but the number of persons born in Sweden to decrease beginning in 2009 (see Diagram 40). Thus, the proportion of foreign-born in the working-age population will rise. In total, the proportion of persons born abroad is forecast to go up from 14.6 percent in 2003 to 17.3 percent in 2013.

The age distribution of the population is changing. The proportion in age group 16–24 will increase until 2011 and decrease slightly thereafter. The proportion in age group 25–54 will decrease until 2009 but then increase somewhat until 2013, whereas the proportion in age group 55–64 will initially increase and subsequently decrease (see Table 8 and Diagram 41).

With the declining proportion in age group 25–54 and the rising proportion of foreign-born, the effect on labour supply will be negative.

Table 8 Population of Working Age (16–64)
Level in thousands of persons and percent of total population

	2003	2003	2008	2010	2013
Total					
16–24	945	16.6	18.2	18.8	18.6
25–54	3 615	63.4	61.1	61.1	61.9
55–64	1 141	20.0	20.7	20.1	19.5
Born in Sweden					
16–24	830	14.6	16.1	16.8	16.6
25–54	3 037	53.3	50.0	49.5	49.7
55–64	999	17.5	18.0	17.3	16.4
Born abroad					
16–24	115	2.0	2.1	2.1	2.0
25–54	578	10.1	11.1	11.5	12.3
55–64	142	2.5	2.7	2.8	3.0

Source: Statistics Sweden.

Weak Labour Force Trend

In the NIER's calculations of the labour market trend, projections are made for labour supply, equilibrium unemployment and average hours worked in light of changed demographic conditions. Here the working-age population is divided into 56

[25] See "Sveriges framtida befolkning 2003–2020. Svensk och utländsk bakgrund" (Sweden's Future Population 2003-2020. Swedish and Foreign Backgrounds), Demografiska rapporter 2003:5, Statistics Sweden.

different groups according to age, gender and country of birth.[26] For each subgroup the proportion in the labour force is assumed to remain constant at its level in 2002, a relatively normal year from a cyclical standpoint. Since the composition of the working-age population is changing, the proportion of the working-age population in the labour supply also changes in this projection.

In addition to purely demographic changes, it is assumed that the labour-market situation of the foreign-born will improve somewhat. This development is foreseen even though immigration will mean that many persons will have spent limited time in Sweden. In the late 1980's and early 1990's, the number of immigrants in Sweden was comparatively high. The extremely weak labour market in the first half of the 1990's made integration of immigrants more difficult. Immigration is assumed to be lower in the next ten years than in the period 1988–1994, while the labour market is expected to be more normal, helping to increase the labour-force participation of the foreign-born. It is therefore assumed that from 2002 to 2013 the difference in labour-force participation between persons born in Sweden and those born abroad will decrease by 10 percent in each subgroup.

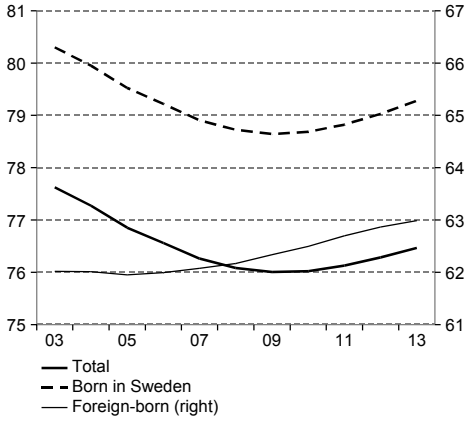
The labour supply is dependent on the degree to which persons of working age are outside the labour force, for example because of studies or illness. From the mid-1990's on, there has been a sharp increase in total ill health, and the demographic trend, with more older persons in the labour force in the next few years, is expected to entail a continued increase in ill health (see Diagram 42). Total ill health includes persons in the labour force and absent from work because of sickness, as well as sick persons outside the labour force. In the past year, the number of new full-time sick-listings decreased, tending to reduce sickness absence in the labour force. This development is expected to continue. But sickness absence is going down primarily because many chronically sick-listed persons are leaving the labour force and granted sickness and activity allowances (previously termed "disability pensions") instead. This development will contribute to a continued increase in the number of sick persons outside the labour force in the next few years. In addition to the demographic tendency, it is assumed that the number of sick persons outside the labour force will increase by 30 000 between 2004 and 2007. Thereafter, with the changing composition of the population, total ill health will continue to increase, though at a declining rate, until 2010, after which it will begin decreasing slightly.

Total labour-force participation will decrease until 2009 despite somewhat better integration (see Diagram 43). In total, the labour supply is forecast to show a trend with an average annual

Diagram 42 Ill Health
Thousands

Sources: Statistics Sweden and NIER.

Diagram 43 Labour Force Participation – Trend
Percent of each population group



Sources: Statistics Sweden and NIER.

[26] The population is divided into seven age groups: 16–19, 20–24, 25–34, 35–44, 45–54, 55–59 and 60–64 as well as four groups according to country of birth: Sweden, Nordic countries other than Sweden, the EU25 except for Sweden and Finland, and the rest of the world.

increase of 0.15 percent in 2003–2013. The working-age population will increase by an average of 0.33 percent per year, but the increase in labour supply will be slowed by a changing composition of the population and a higher proportion of foreign-born. (see Table 9).

Table 9 Trend in the Labour Force and Contribution of Various Components

Average annual percentage change and annual contribution to trend

	2003–13
Labour force	0.15
Contribution from	
Change in population	0.33
Change in composition of population	–0.08
Increase in proportion of foreign-born	–0.14
Other factors	0.03

Source: NIER.

Little Longer Term Increase in Number Employed and Hours Worked

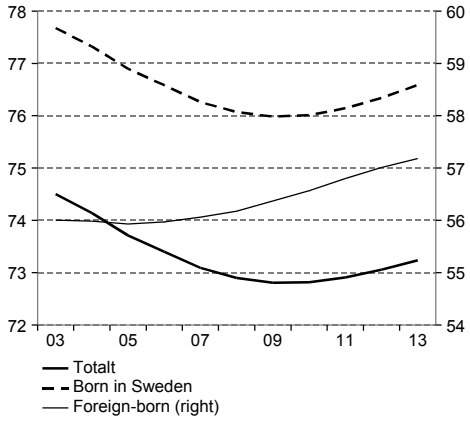
The changed composition of the population is also affecting the development of equilibrium unemployment. Based on a purely demographic projection, the long-term equilibrium unemployment rate is forecast to increase by 0.3 percentage point from 2002 to 2013. The reason is largely that persons born abroad, who are overrepresented among the unemployed, will increase as a proportion of the working-age population. Greater integration of the foreign-born through a relatively increasing labour supply, as well as declining unemployment, will limit this negative effect on the long-term equilibrium unemployment rate to 0.2 percentage point.

Given the trend in labour supply and the development of long-term equilibrium unemployment, the employment rate will show little improvement, aside from cyclical variations, in the next ten-year period. The explanation is that population groups with a low employment rate will increase in proportion to the total population of working age. The overall employment ratio will drop from 74.5 percent in 2003 to 73.2 percent in 2013 (see Diagram 44), whereas the number of persons employed will increase by an annual average of 0.1 percentage point.

With a purely demographic projection, the trend in average hours worked, i. e. the number of hours worked per person employed, is slightly negative. Age groups with fewer average hours worked are increasing in proportion to the population aged 16–64. It is also assumed that average hours worked will decrease because of certain negotiated reductions in work hours equivalent to 0.05 percentage point per year. A countereffect is declining sickness absence, which increases average hours

Diagram 44 Employment Rate – Trend

Percent of each population group



Sources: Statistics Sweden and NIER.

worked since persons absent from work because of illness are regarded as employed. Overall, average hours worked are forecast to remain unchanged on average in 2003–2013. In combination with employment as described above, this means that hours worked will increase by an annual average of 0.1 percentage point (see Diagram 45 and Table 10).

The number of hours worked per capita will follow a declining trend during the period (see Diagram 46), when the population as a whole will be growing faster than the population aged 16–64. Compared with a situation where the number of hours worked remains constant, this means lower GDP and thus less scope for household and general-government consumption. The growing proportion of persons over 65 will oblige the general-government sector to provide a higher level of government services and transfer payments. This development will entail financing problems for the general-government sector since the tax bases are growing relatively slowly because of the weak tendency in hours worked, which is analyzed more closely in Chapter 6, "The Main Scenario for Wage Formation in 2004–2006".

Table 10 Labour Market Trend

Annual percentage change

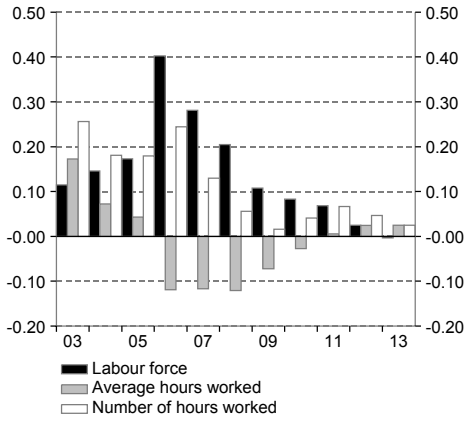
	2003	2004	2005–07	2008–10	2011–13
Labour force	0.11	0.15	0.28	0.13	0.03
Long-term equilibrium unemployment[1]	4.0	4.1	4.1	4.2	4.2
Employed	0.08	0.11	0.24	0.11	0.03
Average hours worked	0.14	0.04	–0.10	–0.09	0.02
Number of hours worked	0.26	0.18	0.18	0.04	0.05

[1] Percent of labour force.

Sources: Statistics Sweden and NIER.

Diagram 45 Trends in Labour Supply

Percentage change



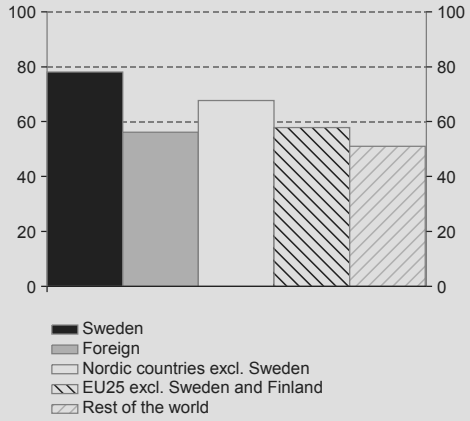
Sources: Statistics Sweden and NIER.

Diagram 46 Number of Hours Worked per Capita

Note: For the period after 2002, the trend is shown, i.e. excl. cyclical variations.

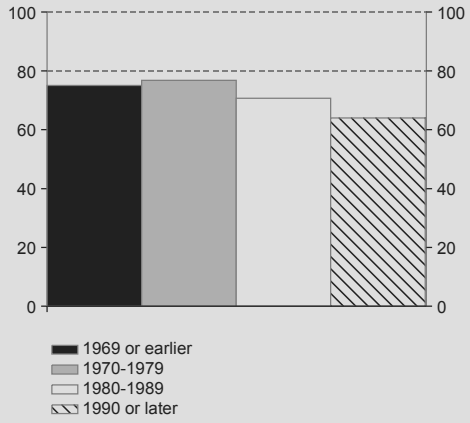
Sources: Statistics Sweden and NIER.

Diagram 47 Employment Rate by Country of Birth, 2002
Percent of each population group



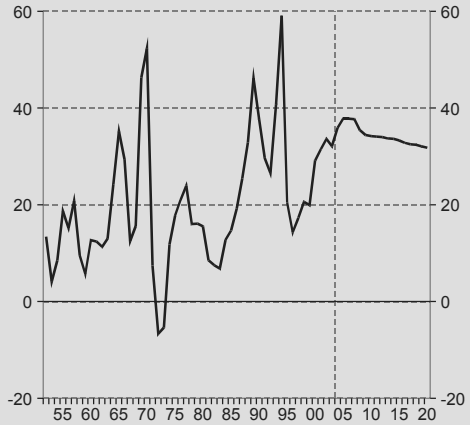
Source: Statistics Sweden.

Diagram 48 Employment Rate by Year of Immigration, 2002
Percent of each population group



Source: Statistics Sweden.

Diagram 49 Net Immigration of Foreign Born
Thousands



Source: Statistics Sweden.

Effects of Further Improving Integration of the Foreign Born

There are considerable differences in the employment rate of the Swedish population in regard both to age and to country of birth (see Table 11 and Diagram 47).

Table 11 Employment Rate
Level in thousands of persons and percent of population

	2003	2003	2008	2010	2013
Born in Sweden					
16–24	399	48.1	47.0	47.7	49.7
25–54	2 671	87.9	87.7	87.7	87.7
55–64	710	71.1	69.5	69.8	70.3
Born abroad					
16–24	37	32.4	34.5	35.5	35.8
25–54	360	62.2	62.6	62.8	63.2
55–64	71	49.9	47.6	47.0	46.7
Total					
16–24	436	46.2	45.5	46.4	48.2
25–54	3 030	83.8	83.1	83.0	82.8
55–64	781	68.4	66.7	66.5	66.6

Sources: Statistics Sweden and NIER.

The employment rate is lower for younger and older persons than for persons aged 25–54, and lower for persons born abroad than for those born in Sweden. It is lowest for persons born outside Europe and lower for those born outside the Nordic countries than for native Nordics. For the foreign-born, there are also substantial differences in the employment rate according to the duration of residence in Sweden (see Diagram 48). The less time that foreign-born individuals have lived in Sweden, the lower their employment rate tends to be. It obviously takes a long-time for immigrants to enter the Swedish labour market. Over time, immigration has varied in character, a factor that also makes a difference in the employment rate. Net immigration was especially high in 1964–1970, when it consisted largely of immigrant workers from Finland and southern Europe. Net immigration was also high in 1988–1994, when it consisted largely of asylum seekers from the Middle East and the Balkan region.

Since the 1950's, net immigration to Sweden has also increased gradually in periods other than those of unusually high immigration. In the next ten years, net immigration of foreign-born persons is expected to average 35 000 per year (see Diagram 49). The increase in the foreign-born population thus provides a substantial addition to a group that currently shows a much lower employment rate than persons born in Sweden.

In the above description of the labour-force trend, there is some improvement in the situation of the foreign-born on the

labour market. This means that the employment rate of the foreign-born increases through both higher labour-force participation and lower unemployment. In this box, a scenario is analyzed in which there is greater improvement in the integration of persons born abroad. The scenario is based on the assumption that the differences in labour-force participation between Swedish- and foreign-born in 2002 are halved in each subgroup in the next ten years. By contrast, the trend shows a 10-percent reduction in these differences. With this improved integration, the total labour force increases by an additional 92 000 persons by 2013 (see Diagram 50), meaning that the labour force grows by an average of 0.20 percentage point more per year compared to the trend (see Table 12). Thus, the issue of increasing the integration of the foreign-born on the Swedish labour market is highly relevant to the growth of the labour force, especially after a number of years.

Further improved integration will also push down long-term unemployment compared to the trend. This means that employment will increase 0.23 percentage point faster per year and that the number employed in 2013 will be 107 000 higher than the trend. Despite higher employment, however, the Government's and Parliament's target of 80 percent for regular employment will not be met (see Diagram 51).

Table 12 Improved Integration

Annual percentage change, average difference per year

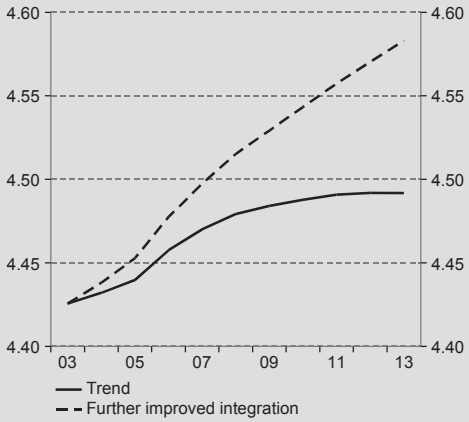
	2004–13
Labour force	0.20
Long-term equilibrium unemployment[1]	–0.41
Employed	0.23
Average hours worked	0.00
Number of hours worked	0.25
Productivity	0.00
GDP	**0.25**

[1] Difference in percentage points, 2013.
Source: NIER.

Given the trend in average hours worked, the number of hours worked will increase by 0.25 percentage point more on average per year. With the trend in productivity, this would mean that annual GDP growth averaged 0.25 percentage point higher than otherwise. The assumption of unchanged productivity may be an overestimate since those who have not been employed, regardless of ethnic background, tend initially to have lower productivity than those who have been employed. Even assuming somewhat lower productivity, though, more improved integration would increase the scope for household and general-government consumption and strengthen general-government finances.

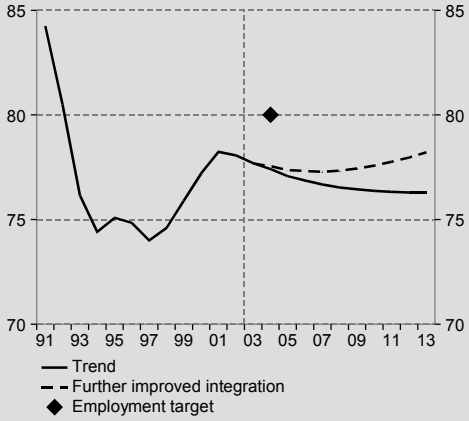
With further improved integration, there would be more hours worked per capita than with the trend (see Diagram 52), meaning that GDP per capita would not be limited so much. In

Diagram 50 Labour Force
Millions of persons



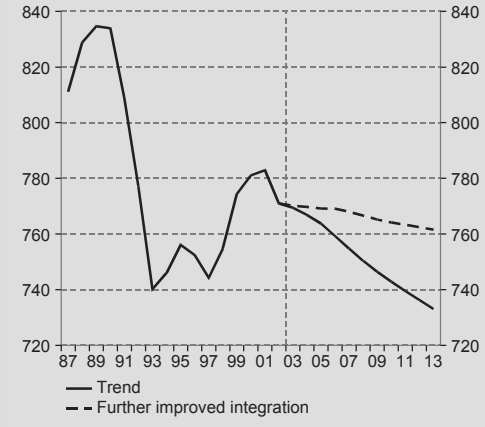
Sources: Statistics Sweden and NIER.

Diagram 51 Regular Employment Rate
Percent of population aged 20-64



Note: For the period after 2002, the trend is shown i.e. excl. cyclical variations.
Sources: Statistics Sweden and NIER.

Diagram 52 Number of Hours Worked per Capita



Note: For the period after 2002, the trend is shown, i.e. excl. cyclical variations.
Sources: Statistics Sweden and NIER.

the scenario of further improved integration, the level of GDP is estimated to be SEK 76 billion higher in 2013 at today's price level. Higher GDP means more revenue from employer contributions, income taxes and value-added taxes as well as less expenditure for items like labour-market benefits. Compared with the trend, general-government finances are strengthened in 2013 by a total of SEK 53 billion at today's price levels. Compared with the main scenario, further improved integration thus creates a margin of SEK 53 billion for unfinanced tax cuts or increases in expenditure.

Ways to Increase the Labour Supply

The number of hours worked is critical to the future development of the Swedish economy. Demographic factors indicate that the number of hours worked per capita will decrease (see Diagram 52). Such a tendency would have a negative effect on growth.[27]

Structural factors like changes in the age, health and education of the population have a considerable impact on the trend in the labour force and thus on the number of hours worked. Both the Government and Parliament, as well as the parties on the labour market, can help in various ways to counter the decrease in the number of hours worked per capita.

Improved integration would provide a positive contribution to total labour supply and thus to higher GDP and the future scope for consumption. The results in the box above show that halving the current differences in employment rates between the Swedish- and foreign-born over a ten-year period would raise annual GDP growth by 0.25 percentage point and provide additional scope of SEK 53 billion at today's price level for unfinanced tax reductions or increases in expenditure.

Other factors that would increase the labour supply in a similar fashion are measures to reduce total ill health, raising the average retirement age and increasing the throughput rate in the educational system. Steps to increase average hours worked per person employed, such as avoiding agreements that reduce work hours instead of raising wages, result in more total hours worked in the economy and thus in higher GDP, as well as increasing the scope for unfinanced tax cuts or additional expenditure.

[27] For further discussion of the long-term consequences of a lower labour supply, see Braconier, H., Hjelm, G. and Nilsson, J. "Arbetsutbud och offentliga finanser" (Labour Supply and General Government Finances), *Ekonomisk debatt*, 4, 2004 and "Samhällsekonomiska effekter av en allmän arbetstidsförkortning" (Economic Effects of a General Reduction in Work Hours), NIER 2002.

4 Conditions for Wage Formation in the General Government Sector

In the spring of 2005, negotiations are planned for new labour contracts covering nearly a million local-government employees. The negotiations will take place in a steadily improving economy. The situation on the Swedish labour market will have stabilized, and unemployment will have begun to decrease. Employment, on the other hand, is expected to increase rather slowly next year as well.

In a somewhat longer-term perspective, the general-government sector will be facing recruitment problems. Since the demand for government services is estimated for purely demographic reasons to increase in the next ten years, the number of employees in the general-government sector is expected to increase more than the aggregate labour supply. Employment in the business sector will thus have to decrease.

In the next ten years, almost a third of current employees in the general-government sector will leave the labour market, and most of them will begin receiving retirement or disability pensions. The majority of the large generation born in the 1940's will leave the labour market during this period. The effect on the general-government sector will be particularly noticeable since a relatively high percentage of general-government employees belong to this generation. In addition, a high proportion of general-government employees are women, who tend to start receiving disability pensions earlier than men.

Tax Revenue Will Determine the Scope for Wages in the General Government Sector

A natural starting point in assessing the margin for wages in the general-government sector is to assume unchanged tax rates. If the expenditure of the general-government sector is financed by a constant proportional income tax, then tax revenue will increase with total income from work. If other general-government expenditure increases at the same rate and the proportion of employees in the general-government sector is kept constant, hourly labour costs in that sector can increase at the same rate as in the business sector. This is true even though productivity growth in much less in the general-government sector. The scope for wages provided by higher productivity growth in the business sector can thus be said to spill over to government employees. To the extent that wages in the general-government sector increase more rapidly than in the business sector, however, higher tax rates, a slower rate of increase in other expenditure or a decreasing proportion of general-government employees will be necessary.

The reasoning presented above is applicable if business-sector employees are fully compensated for their increased pro-

ductivity in the form of higher wages that in turn generate higher tax revenue. If a portion of the productivity increase is used to reduce work hours, tax revenue will increase more slowly. With a given tendency in number of hours worked in the general-government sector, this will result in a smaller margin for wage increases in the general-government sector than if work hours in the business sector had not been reduced.

An excessive rate of wage increases in the business sector, for instance because of unexpectedly high demand, will result in high inflationary pressure. The Riksbank will respond by raising the repo rate. The tighter monetary policy will curb demand and push up unemployment, slowing in turn the rate of wage increases and inflation. Interest rates can then be lowered, and the economy can achieve equilibrium.

A direct relationship like the one between wage increases and the Riksbank's repo rate does not exist for the development of wages in the general-government sector. Since this sector does not sell its output to a market, a higher rate of wage increases there will not lead to consumption-price inflation. Government services are largely free of charge to the user and are financed by taxes. Therefore, such services are not considered in the Consumption Price Index, which only includes prices of goods and services paid for directly by the consumption.[28] A higher rate of wage increases in the general-government sector leads instead to increases in taxes or contributions, or to cutbacks in government activities and employment.

This means that wages in the general-government sector can rise more rapidly without higher inflation, provided that the wage tendency in the business sector is not affected. Such a development can be most appropriately viewed as a redistribution of purchasing power, through higher taxes for example, among different groups of wage earners without affecting demand in general.

In several ways, however, an excessive rate of wage increases in the general-government sector can conflict with the inflation target. First, an unfinanced wage increase that creates a deficit in general-government finances can stimulate demand and thus put upward pressure on the inflation rate. Second, generous wage increases for government employees, like raising taxes to finance these increases, lead to larger wage increases in the business sector. This indirect effect is greater if business-sector employees and their unions do not generally accept a higher rate of wage increases in the general-government sector than in the business sector.

[28] However, certain administratively set prices, like charges for water and garbage removal, television licences, prices of tickets in public transport, etc. are included in the CPI and thus affect the inflation rate.

Demand for Hours Worked in the General Government Sector

Diagram 53 Proportion of Hours Worked – General Government Sector
Percent

Sources: Statistics Sweden and NIER.

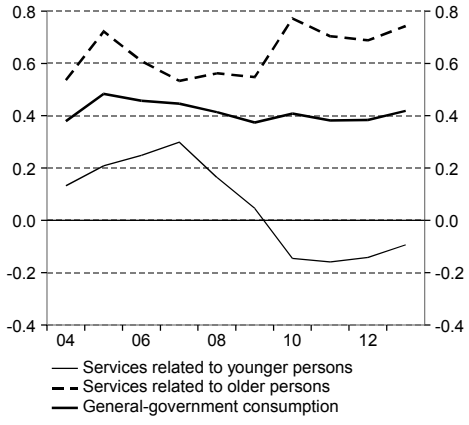
The proportion of hours worked in the general-government sector has varied by a couple of percentage points over the past two decades (see Diagram 53). It increased in the 1980's, but decreased rather strongly in the 1990's, primarily because of expenditure cutbacks but also through privatizing certain government operations and putting them under corporate management. The tendency in coming years is difficult to assess. On the one hand, there is downward pressure on taxes from increased internationalization, making it harder to finance government services with taxes. On the other hand, there is a considerable demand for welfare services, which will tend to increase as the population grows older and wealthier.

In this report, the number of hours worked in the general-government sector is projected on the basis of current consumption patterns and the expected future change in the population. This entails an assumption of unchanged staffing intensity in general-government operations, which may overstate or understate the future tendency. GDP is expected to go up by more than 2 percent per year, and the accompanying increase in incomes should reasonably lead to higher demand for welfare services as well. However, unchanged staffing intensity can lead to improved quality in certain sectors. For example, major operations can be replaced by keyhole surgery, and newer pharmaceuticals can replace more expensive treatment methods. Ultimately, the level of government services, like their financing through charges or taxes, is a political question on which the NIER expresses no judgment. Rather, the projection in the main scenario is an assumption based on technical calculations.

The demographic projection of the demand for government services is illustrated in Diagram 54. Demand is projected for services related to younger and older persons, respectively. Services related to younger persons include childcare, schools and higher education. Services related older persons include care of the elderly, home-help service etc. The main reason why demand for services related to younger persons will be increasing in coming years is that the children born during the "baby boom" of the late 1980's will be passing through the educational system. After 2008, demand for these services will decrease. Services related to older persons are expected to show a relatively stable rate of increase between 0.6 and 0.8 percent in the next ten years. The overall rate of increase in demand for government services is forecast at about 0.4 percent per year.

Since general-government output is labour-intensive and growth in the general-government sector is assumed in the National Accounts to be zero, the number of hours worked will also increase by roughly 0.4 percent annually. Compared with today, this means that there will be no change in staffing intensity, in other words, that the number of teaching hours per child

Diagram 54 Demand for Government Services
Annual percentage change



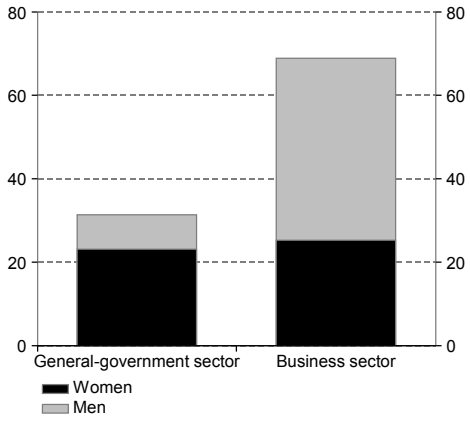
Source: NIER.

and the number of home-help hours for each older person will remain the same.

With the total number of hours worked in the economy as a whole up by 1.0 percent between 2003 and 2013 (see Chapter 3, ”The Long Term Labour Supply”) and the number of hours worked in the general-government sector rising by 4.6 percent, the proportion of hours worked in the general-government sector will increase (see Diagram 53). However, since the increase will be relatively modest, that proportion is forecast to be 29.6 percent in 2013. The change of 1.0 percentage point is considerably less than the decrease in 1993–2001. A higher proportion of hours worked in the general-government sector will entail increased costs, particularly in local government, equivalent to an additional 1 percentage point in the local-government tax rate compared to a situation of no change in the general-government share of employment.

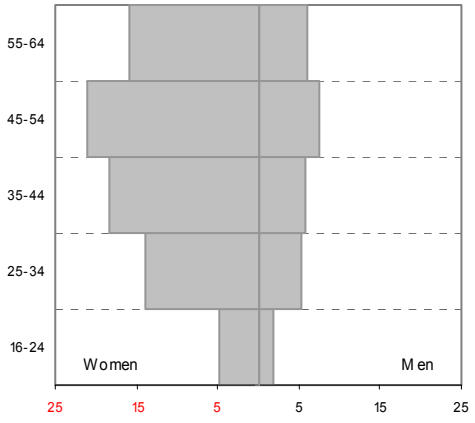
A larger proportion of public services may be produced by the business sector in the future. To the extent that these services continue to be financed by tax revenues, the analysis above does not change in any significant way. The same transfer of employees to the production of welfare services will have to take place, but then between industries in the business sector.

Diagram 55 Employment by Sector and Gender, 2003
Share of total number employed, percent



Source: Statistics Sweden.

Diagram 56 Employment by Age Group – General Government Sector, 2003
Share of total number employed in general-government sector, percent



Source: Statistics Sweden.

High Proportion of Government Employees Retiring

In the next ten years a decreasing proportion of the population will be employed and a greater burden of support borne by those who work (see Chapter 3, ”The Long Term Labour Supply”). Total demand for labour, however, will develop in line with supply since the Riksbank will see that resource utilization does not reach an untenable level. As a result, there will be no general shortage of labour. However, in view of the composition of the labour force, a large proportion of employees will soon be retiring. It will thus be necessary to recruit a relatively large number of new employees to the general-government sector.

Of the total number of persons employed in Sweden, more than 31 percent work in the general-government sector, and the remaining 69 percent in the business sector (see Diagram 55). The proportions of women and men in the respective sectors differ considerably. The general-government sector employs 48 percent of women, but only 16 percent of men. This difference is due mainly to the fact that the general-government sector includes many occupations, like health care, child care and teaching, traditionally held by women.

The largest group of general-government employees, accounting for some 28 percent of employees in that sector, consists of persons aged 45–54 (see Diagram 56). In the youngest age group (16–24) there are relatively few employees in the general-government sector compared to the business sector. One reason is that many duties in the general-government sector call

for upper-secondary or post-secondary education. Even in the youngest age group, however, more women than men apply for work in the general-government sector. In age group 55–64, employment decreases. In the business sector, employment is more evenly distributed among age groups than in the general-government sector. The proportion in age group 25–34 is relatively high, but age group 35–44 is largest (see Diagram 57). In the business sector, too, the proportion is lower for age group 55–64.

In the next ten years, 373 000 persons, or 28 percent of government employees, will leave the labour market, primarily through retirement on old-age or disability pension (see Table 13). Since the current proportion of labour-market newcomers who enter the general-government sector is lower than the proportion of retirees from it each year, it will be necessary to attract a higher share of labour-market newcomers to the general-government sector (see Diagram 58). Currently, 22 percent of all employees in age group 20–24 work in the general-government sector. If this share should be the same for new entrants to the labour market in the next ten years, with no change in net flows between sectors, the number of new employees in the general-government sector would be only 235 000. The number of government employees would thus decrease until 2013 (see Diagram 59 and Table 13).

Table 13 In- and Outflow of Employees

Thousands of persons

	Total	General-government sector	Business sector
Employed in 2003	4 248	1 334	2 914
Number retiring[1]	997	373	623
New employees[1, 2]	1 051	235	816
Net flow between sectors[1]	0	195	–195
Employed in 2013	4 302	1 391	2 911

[1] Shows cumulative change in 2004–2013.

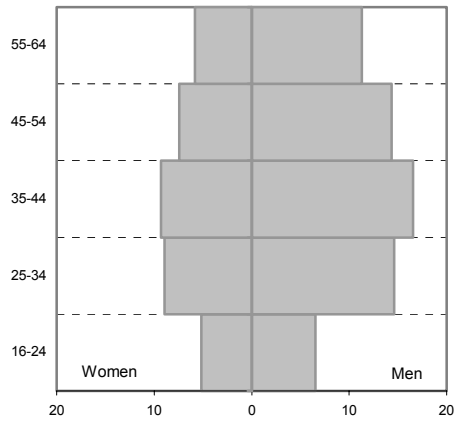
[2] Given the assumption that 22 percent of new entrants to the labour market are employed by the general-government sector.

Sources: Statistics Sweden and NIER.

To maintain the current level of government services, it will be necessary to hire a sufficient number of new employees in the general-government sector to compensate for the number retiring and also to achieve an annual increase of 0.4 percent in the number of hours worked. On these assumptions, there will be a total shortfall of 195 000 persons, equivalent to some 7 percent of business-sector employees, to be recruited to the general-government sector from the business sector. Alternatively, the need for labour can be met if more than the assumed 22 percent of new entrants to the labour market begin working in the general-government sector. To achieve a labour supply consistent

Diagram 57 Employed by Age Group – Business Sector, 2003

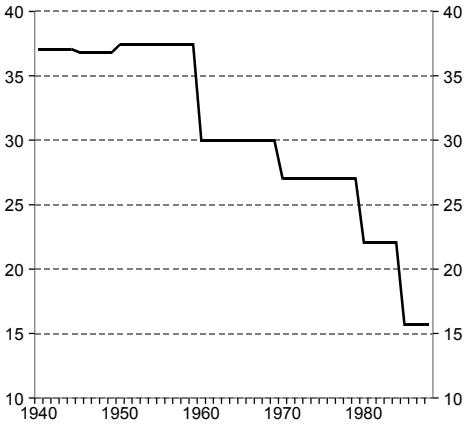
Share of total number in business sector, percent



Source: Statistics Sweden.

Diagram 58 Employment by Year of Birth – General Government Sector

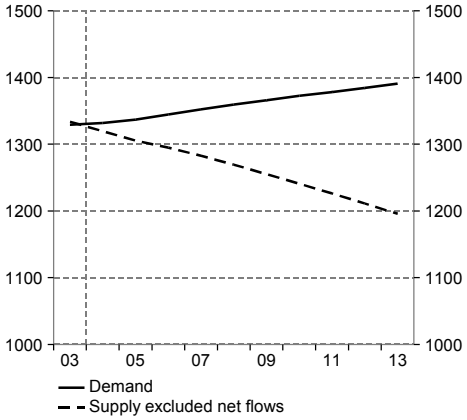
Share of total number employed, by year of birth, percent



Source: NIER.

Diagram 59 Supply of Labour and Demand for Labour – General Government Sector

Thousands



Sources: Statistics Sweden and NIER.

with the demand for labour, some 55 percent of all new entrants to the labour market would have to begin working in the general-government sector in the absence of a net flow of employees to that sector from the business sector. This calculation applies to the situation in the country as a whole. Thus, the need for labour may be greater or less at the regional level. A reasonable forecast is that the recruitment needs of the general-government sector will be met both by a flow of employees from the business sector and by a higher proportion of new entrants to the labour market in the general-government sector.

Higher Labour Supply in the General Government Sector With a Change in Relative Wages

Historically, wages in the general-government and business sectors have followed a similar tendency in a slightly longer-term perspective (see Diagram 60). However, the wage trend in the business sector has tended to be more cyclically affected than in the general-government sector. Thus, wages in the general-government sector have tended to decrease relative to the business sector when the labour market has been tight, and to increase when labour has been more readily available. Also, in the slack economy of the past few years, wages have risen faster in the general-government sector than in the business sector; this tendency could cease when the labour market improves. In the next ten years, however, the increased demand for labour in the general-government sector relative to the business sector will put upward pressure on wages of government employees.

Diagram 60 Hours Worked and Wages
General-government sector relative to business sector

Sources: Statistics Sweden, National Mediation Office and NIER.

At the same time, there is an offsetting structural component in the development of relative wages. In the general-government sector, wage levels generally increase with age and occupational experience. Consequently, as older government employees retire and are replaced by younger ones, the average wage in the general-government sector will tend to decrease, creating a somewhat higher-than-average margin for wage increases at the individual level. All factors considered, relative wages of government employees as a group will increase in the coming year but remain unchanged thereafter.

From a general economic standpoint, it is desirable to increase the labour supply in the Swedish Economy (see Chapter 3, ”The Long Term Labour Supply”). Average hours worked for government employees are somewhat lower than in the business sector, even when demographic factors are considered. For this reason, there is probably some scope for increasing the work input of existing staff, for example by moving from part-time to full-time employment.

It is hardly realistic to expect that the majority of young people entering the labour market in the next few years will begin working in the general-government sector. However, to achieve any increase in the number of new government employees, there

must be sufficient educational capacity. Therefore, a net flow of established employees from the business sector to the general-government sector will probably be necessary. In certain occupational groups, retraining would probably not be required for such a transfer, whereas other kinds of work in the general-government sector call for many years of training. Much will therefore be required, both quantitatively and qualitatively, in terms of labour-market policy as well as adult education.

5 The Labour Market Situation in 2004

The collective-bargaining agreements for local-government employees will be renegotiated in the spring of 2005. These negotiations will be held when the outlook for the Swedish economy is somewhat brighter than in 2004, when wages were negotiated for the business sector.

The Swedish economy is currently in a recovery phase. Demand and output are rising rapidly, and the labour-market situation has stabilized. As a rule, an improved economy affects the labour market in the form of higher employment, though only after a certain time lag. However, productivity growth has been abnormally high, while sickness absence has decreased. These developments have made higher output possible without a corresponding increase in the employment, thus delaying the impact more than normally. Resource utilization has gone up in the past year, but is still relatively low.

The rate of wage increases in the business sector has gradually declined in recent years, primarily because of a weak labour market. Wages have increased somewhat more rapidly in the general-government sector than in the business sector, a normal difference in an economic downturn.

Labour costs in Sweden are roughly on a par with those in other Nordic countries and the US, but higher than in the euro zone. Historically, labour costs have increased at about the same rate as in the other Nordic countries and the US, but much more rapidly than in the euro zone. However, Swedish competitive strength has generally been maintained thanks to higher growth in productivity.

Inflation is currently low because of high productivity growth, moderate wage increases, low resource utilization and low imported inflation. Expectations regarding both inflation and wage increases have dropped to relatively low levels in the past year.

Labour Market

Weak Labour Market

The economic downturn in recent years, with modest GDP growth, has left its imprint on the labour market. The number of hours worked, like the number of persons at work, has been dropping since early in 2001 (see Diagram 61). At the same time, there has been a decrease in average hours worked, due primarily to rising absenteeism but also to a decrease in normal hours worked and in overtime. In the second quarter of this year, the actual number of hours worked per week was lower by over an hour than in the peak year of 1999, despite a rise in average hours worked in the past year. For a considerable time, em-

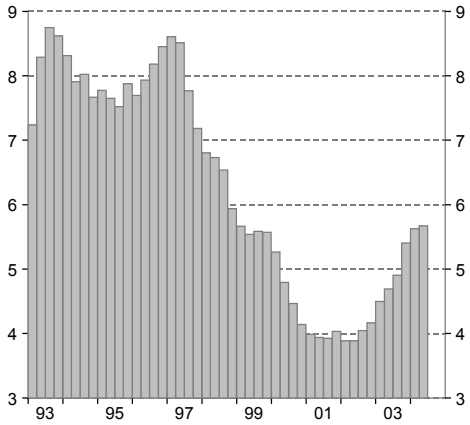
Diagram 61 Hours Worked and Number of Persons at Work
Billions and millions, respectivley, seasonally adjusted quarterly values

Source: Statistics Sweden.

Diagram 62 Employment and Number of Persons at Work
Millions, seasonally adjusted quarterly values

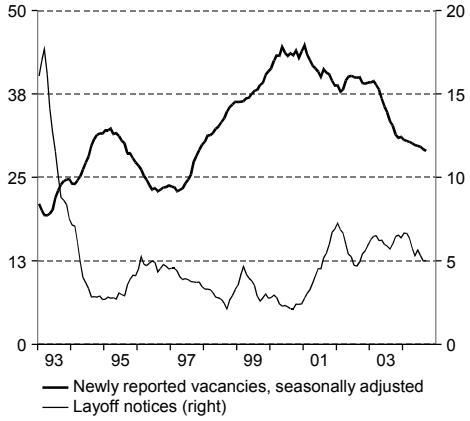
Source: Statistics Sweden.

Diagram 63 Unemployment Rate
Percent of labour force, seasonally adjusted quarterly values



Source: Statistics Sweden.

Diagram 64 Layoff Notices and Unfilled Vacancies
Thousands, monthly values



Note: 6-month moving average.
Source: Labour Market Board.

ployment was sustained by high absenteeism, since both absent persons and their substitutes are classified as employed. However, employment began dropping in the autumn of 2003 (see Diagram 62). This year's surge in output has been made possible primarily by higher productivity and an increase in average hours worked. It is normal in an economic upswing for the number employed to increase with a certain time lag.

The supply of labour was up strongly last year despite slack demand for labour. In addition to the increase in the working-age population, the cutbacks in labour-market programmes have provided the principal contribution to the increase. The larger labour supply, in combination with weak demand, resulted in a higher unemployment rate. Unemployment has been increasing since mid-2002 (see Diagram 63) and in August was 5.3 percent, adjusted for normal seasonal variations. In recent months, the increase in unemployment has levelled off, largely because the number of places in labour-market programmes has been increased, a tendency that is expected to continue next year.

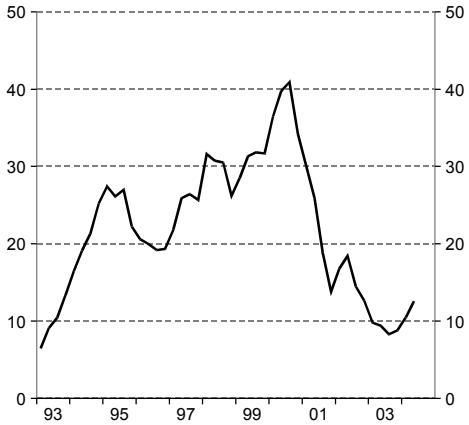
The weak demand for labour is reflected in the statistics on vacancies reported to the country's employment offices (see Diagram 64). The number of newly reported vacancies has decreased sharply in most industries, and in the past year there was a larger decrease in general-government operations. In the past half-year, though, it has slowed, indicating that the labour-market situation is stabilizing. The number of layoff notices began rising again in the summer of 2002 and remains high. So far this year, more than 40 000 persons have received notice. The number has moderated somewhat in manufacturing and other business activities, but has increased considerably in general-government operations and construction. A higher number of layoff notices have also been reported in portions of the private services sector, such as transport and communications, as well as in trade.

Low Resource Utilization

At the outset of the economic downturn, profitability deteriorated in the business sector. Employment was curbed by efforts of firms to improve profits through radical cost-cutting and extreme restraint in hiring. Since the second half of last year, business-sector output has picked up, but with productivity and average hours worked increasing so strongly, the demand for labour is still low. Although the proportion of firms reporting labour shortages has risen in the past year, it remains relatively low (see Diagram 65). The picture in manufacturing and the service industries is similar. The principal factor limiting the output of firms is still demand, not the supply of labour or other factors of production. In large portions of the business sector, resource utilization is low, though rising.

The NIER's overall assessment of resource utilization is summarized by the so-called output gap. The output gap is the difference between actual and potential output, with the latter reflecting the level of output compatible with low and stable inflation. The output gap is currently judged to be negative (see Diagram 66). Pressure on prices and wages from demand is thus low. As the production capacity of the economy is put to use in the next few years, the output gap will close.

Diagram 65 Shortage of Labour – Business Sector
Proportion of firms, percent, quarterly values



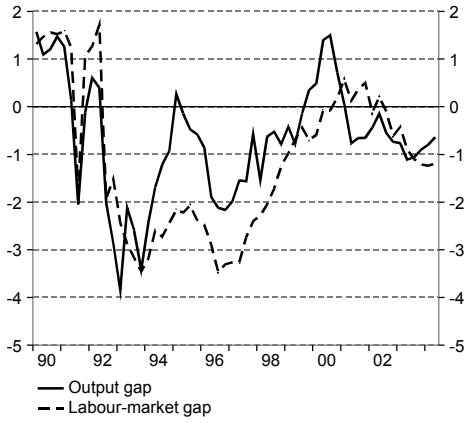
Note: Weighted aggregate measure based on industries in Business Tendency Surveys.
Source: NIER.

Wages, Labour Costs and Competitive Position

Wage Increases Curbed by Weaker Labour Market

New collective-bargaining agreements have been reached this year, covering business-sector employees for the period 2004–2006. The negotiations were influenced by the economic slump, and relatively substantial consideration was given to the general economy. In consequence, the agreed annual rate of wage increases averaged 0.4 percentage point less than for the previous contract period of 2001–2003. This autumn, new agreements will be negotiated for the central-government sector; these are expected to follow the lead of the business sector and thus to result in somewhat more modest settlement levels than those for the previous contract period (see the box captioned "Labour Negotiations and Wage Formation"). Throughout the economy, the rate of increase in hourly earnings slowed last year and will continue doing so this year because of the weak labour market (see Table 14 and Diagram 67). Based on the new agreements, business-sector wages are forecast to increase by 3.1 percent this year, 0.6 percentage point less than the average rate of increase in the previous contract period (see Diagram 68).

Diagram 66 Output Gap and Labour Market Gap
Percent of potential GDP and potential hours worked, respectively, quarterly values



Note: The labour-market gap is calculated as discrepancy in number of hours between actual and potential hours worked.
Source: NIER.

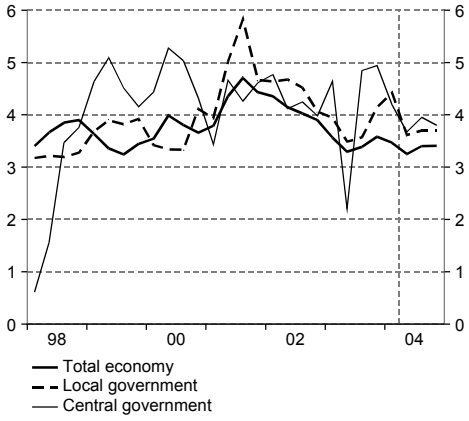
Table 14 Hourly Earnings According to Short Term Wage and Salary Statistics

Annual percentage change

	2001	2002	2003	2004[1]
Manufacturing	3.7	4.1	3.2	3.1
Construction	4.9	3.7	3.8	3.2
Services	4.4	3.8	3.2	3.1
Business sector	*4.2*	*3.9*	*3.2*	*3.1*
General-govt sector	4.7	4.4	3.9	3.9
Total	**4.3**	**4.1**	**3.5**	**3.4**

[1] NIER's forecast.
Sources: National Mediation Office and NIER.

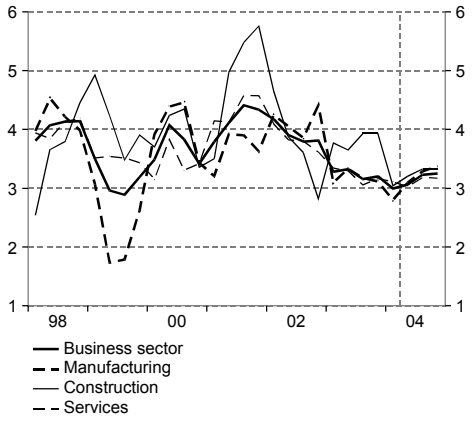
Diagram 67 Hourly Earnings – Business Sector, General Government Sector and Total
Annual percentage change, quarterly values



Sources: National Mediation Office and NIER.

The total hourly labour cost to employers, according to the LCI for business-sector employees, rose by an average of 3.1 percent

Diagram 68 Hourly Earnings – Business Sector
Annual percentage change, quarterly values



Sources: National Mediation Office and NIER.

in the first quarter of this year[29]. The extension of employer responsibility for sick pay from two to three weeks effective July 1 of last year contributed to the increase in labour costs that year. This year the effect will be partly offset by a reduction of 0.12 percentage point in employer contributions, but labour costs in the business sector will still increase somewhat more than hourly earnings (see Table 15).

Labour costs in the business sector, according to the National Accounts (NA), will increase this year by 2.5 percent.[30]

Table 15 Hourly Cost of Labour – Business Sector, According to Labour Cost Index (LCI) and National Accounts (NA)

Annual percentage change

	2001	2002	2003	2004[1]
LCI	4.9	3.5	4.5	3.2
NA	6.0	4.2	2.8	2.5

[1] NIER's forecast.

Sources: Eurostat, Statistics Sweden and NIER.

[29] LCI is short for *Labour Cost Index*, which in Sweden is based on the Short-term Wage and Salary Statistics. The LCI was established by EU decree and is expected to be fully harmonized between countries in 2005.

[30] For a review of the differences between various measures of hourly earnings and labour costs, see the box captioned "Wages and Statistics" in *Wage Formation – Economic Conditions in Sweden 2003*, NIER.

Labour Negotiations and Wage Formation

This past spring and summer, new wage settlements were reached for almost 1.4 million employees in the business sector. Negotiations on other agreements are still in progress, as this is the case for most of the services sector, including postal and transportation employees, for example. The contracts for the central-government sector, covering some 200 000 employees, will also be renegotiated during the autumn. The local-government sector will renegotiate its agreements in March 2005, but no demands have yet been presented.

In the 1970's and 1980's, both the rate of wage increases and the rate of inflation were high in Sweden compared with its principal competitor countries. This tendency was incompatible with the fixed exchange rate in effect at that time and led to several devaluations. The changeover in the early 1990's to a system with a flexible exchange rate, an independent central bank and an inflation target of 2 percent has provided a different set of conditions for wage formation. The scope for wage increases is now dependent on the inflation target and the development of productivity in the economy. High wage increases that threaten to bring higher inflation are countered by the Riksbank, which raises the repo rate, pushing up unemployment and curbing the rise in wages. The economic crisis of the early 1990's and these new conditions have changed the way that the labour-market parties view wage formation. With the 1991 stabilization agreements of the Rehnberg Commission, work was begun on reducing the rate of wage increases in the economy (see Table 16 and Diagram 69). After the high settlements reached in the 1995 negotiations, the parties in Swedish manufacturing industry initiated discussions on rules to govern wage formation, leading to the Industrial Agreement of 1997. This agreement provides that negotiations in Swedish manufacturing sector are to be based on the macroeconomic conditions prevailing at the time of negotiations. To assist the parties in the negotiations, there is a neutral chairman appointed by the Industrial Committee. Similar co-operative agreements have been reached in other sectors covered by collective bargaining. The purpose of these agreements is to ensure that the rate of wage increases is appropriate to the economic situation so that wage earners will obtain increases in real wages ers will obtain increases in real wages without higher inflation. The wage settlement reached in manufacturing is also regarded as the norm for the rest of the labour market, thus helping to limit the rate of wage increases throughout the economy.

Table 16 Hourly Earnings, 1980–2003, According to Short Term Wage and Salary Statistics

Annual percentage change

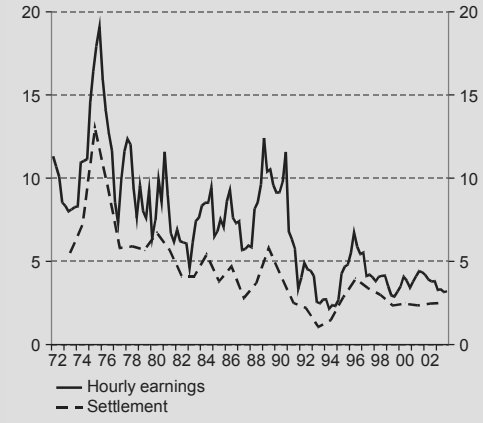
	80–90	91–94	95–97	98–00	01–03
Manufacturing	7.8	4.1	5.5	3.5	3.7
Construction	8.2	1.8	3.8	3.9	4.2
Services	8.2	4.1	4.6	3.7	3.8
Business sector	*8.0*	*3.8*	*4.8*	*3.6*	*3.8*
Genl-govt sector	7.8	3.9	4.2	3.6	4.3
Total	**7.9**	**3.8**	**4.6**	**3.6**	**4.0**

Source: National Mediation Office.

The first negotiations within the framework of the Industrial Agreement were held in 1998. Even though the economy was then on its way up, the resulting wage increases averaged over a percentage point less than in the 1995 agreement. In the 2001 negotiations, the rate of wage increases was somewhat higher because of the strongly expanding economy, but was still lower than in 1995–1997 and approximately half the rate in the 1980's.

Diagram 69 Hourly Earnings – Business Sector

Annual percentage change, quarter



Source: National Mediation Office.

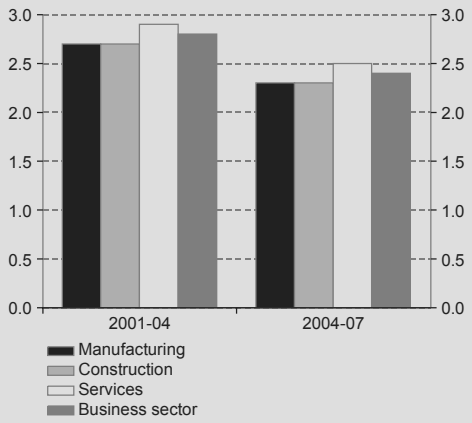
Probably the Industrial Agreement and equivalent agreements in other sectors, and possibly also the institution of the National Mediation Office, have meant that the labour-market parties have paid more attention to the cost of high unemployment to the economy in general. This changed perspective, combined with a soft labour market, has resulted in

relatively modest wage increases in this year's negotiations as well.[31] Moreover, the number of labour disputes has been fairly limited.

Modest Wage Increases in the Business Sector

The weak labour market has left its imprint on this year's labour negotiations, contributing to generally lower wage settlements than in the 2001 negotiations. During the spring, growth began to pick up, but the labour market is still weak. The increase in output has been achieved primarily through higher productivity and more hours worked, whereas employment has continued to decrease. That tendency, together with rising unemployment early in the year, has curbed this year's negotiated wage increases. In the next two years, negotiated wages will rise somewhat faster. Lower inflationary expectations have also helped to reduce the rate of wage increases. For the business sector as a whole, the average negotiated rate of wage increases has been reduced by 0.4 percentage point per year for the current contract period compared to the previous three-year period (see Diagram 70).

Diagram 70 Negotiated Increases in Hourly Earnings, Current and Previous Contract Period
Annual percentage change



Sources: National Mediation Office and NIER.

The old contract for the manufacturing sector expired on March 31 of this year, and the principal new contracts in this area had been negotiated well before this date. In those portions of the business sector where agreements were reached after the one in manufacturing, the negotiated settlements were roughly the same as for manufacturing, reflecting the view of the agreement for manufacturing as a norm for wage formation. For virtually all workers in different areas of manufacturing, the negotiated wage increases total 6.8 percent for a three-year period, roughly the same as in the preceding three-year agreement. On the other hand, reductions in work hours are more limited; they totalled 1.5 percent in the previous agreement, but only 0.5 percent in the current one. With the more limited reductions in work hours, the total negotiated settlements for workers in manufacturing have averaged 0.4 percentage point less than in the previous three-year agreement. The agreements for white-collar employees in manufacturing are also for three years and provide in many cases that 0.5 percent of the scope for wages can be devoted to reduction of work hours or provisions for pensions. However, the differences in negotiated settlements between various manufacturing industries are greater for white-collar employees than for blue-collar employees. Weighted by the number of persons covered by each agreement, the negotiated settlements, including reductions in work hours, for white-collar employees in manufacturing total 6.2 percent. The lower settlements for white-collar employees than for blue-collar employees in manufacturing have historically been offset by higher wage drift for white-collar employees. In the previous contract period, the earnings of white-collar employees increased by an average of 1.3 percentage points more than the earnings of blue-collar employees even though the negotiated settlements averaged 0.3 percentage point less. For manufacturing as a whole, the average annual negotiated settlement, including any reduction in work hours, was 0.4 percentage point lower than in the previous contract period (see Diagram 70).

For construction workers, negotiations have produced settlements in line with those reached for workers in manufacturing. Including reductions in work hours, the settlement level has been lowered by almost a half percentage point per year compared with the previous contract period. Also in the service industries as a whole, the settlements reached have been in line with the increases in manufacturing. On the other hand, the differences

[31] Many labour contracts are based on local wage formation, either with wage increases that apply only if settlements cannot be reached ("stupstockar"), or with no centrally specified wage increases at all. For this reason, it is difficult to interpret the negotiated rate of wage increases.

between industries are greater here than in manufacturing. The negotiated settlements for workers in trade was somewhat higher than for workers in manufacturing. On average, however, the new settlements for trade are about 0.5 percentage point less per year than those in the previous agreements. In other sectors of services, such as business services, credit institutions and transport, there are agreements that expire later in 2004. For the agreements concluded so far this year, the average annual settlement is 2.3 percent, or 0.4 percentage point less than for the previous contract period.

In a Weak Labour Market, Smaller Increases in Hourly Earnings

In *Wage Formation – Economic Conditions in Sweden 2003*, the NIER's forecast was that the wage settlements negotiated in 2004 would be 0.3 percentage point less than those in the 2001 agreements. The reduction desirable from a general economic standpoint was estimated at 0.7 percentage point per year. A decrease of this order would reflect better-functioning wage formation for the economy and thus correspond to a lower equilibrium unemployment rate.

The assessment in last year's report was based on a relatively weak economy. Growth was low, unemployment was rising and inflationary pressure was limited. The forecast for the coming year was relatively gloomy as well. When labour negotiations began in the first quarter of 2004, the labour-market situation had deteriorated even more than previously forecast, thus changing the conditions for the agreements. The reduction of 0.4 percentage point in the negotiated settlements is admittedly somewhat more than was anticipated in *Wage Formation – Economic Conditions in Sweden 2003*, but this outcome is considered primarily a result of an unexpectedly weak labour market at the time of negotiations, rather than an indication of better-functioning wage formation with a correspondingly lower equilibrium unemployment rate.

Diagram 71 Consumption Real Wage and Product Real Wage
Annual percentage change

Sources: Statistics Sweden and NIER.

Consumption Real Wage Increasing More Slowly Than Product Real Wage This Year

The consumption real wage, which measures the real hourly income of a wage earner after taxes, decreased by a half percent last year, primarily because of higher local-government taxes (see Table 17). The product real wage measures the real hourly labour cost of firms and increased by more than one percent last year. In preceding years, the consumption real wage increased faster than the product real wage, mainly because of lower income taxes (see Diagram 71).

Table 17 Consumption and Product Real Wage
Annual percentage change and contribution in percentage points.

	2001	2002	2003	2004[1]
Consumption Real Wage	**4.5**	**5.6**	**–0.5**	**1.2**
of which contribution from:				
Nominal wage	4.6	4.2	3.4	3.1
Income tax[2]	2.4	3.4	–1.4	–0.3
Consumption prices	–2.4	–1.8	–2.5	–1.5
Product Real Wage	**3.0**	**2.6**	**1.1**	**1.9**
of which contribution from:				
Nominal wage	4.6	4.2	3.4	3.1
Collective contributions[3]	0.8	0.1	0.3	–0.1
GDP deflator	–2.3	–1.6	–2.5	–1.1

[1] NIER's forecast.

[2] A positive contribution from income taxes means a reduction in income taxes.

[3] A positive contribution from collective contributions means an increase in contributions.

Note: The consumption real wage is the net wage of the consumer after consideration for income taxes and the level of consumer prices (deflator for household consumption). The product real wage is the wage paid by the employer after consideration for collective contributions and the level of value-added prices (GDP deflator).

Sources: Statistics Sweden and NIER.

This year the consumption real wage is increasing somewhat more slowly than the average for recent years, one reason being that local-government taxes have been raised by an average of 0.34 percentage point. The product real wage is increasing somewhat faster than the consumption real wage this year, largely because the GDP deflator is increasing less strongly than consumption prices. In the proposed budget for 2005, income taxes will be lowered next year by the equivalent of half of the final step to compensate for the individual contribution to the pension system. The forecast increase of 0.1 percentage point in local-government taxes will work in the opposite direction.

Higher Labour Costs in Sweden Than in the Euro Zone

The international competitiveness of Swedish firms depends on the development of labour costs, together with productivity and prices, relative to other countries (see Chapter 2, ”Conditions for Wage Formation in the Business Sector”). The desirable way to measure labour costs is by the hourly wage rate. Since statistics on labour costs are unavailable for many countries, the cost of labour per employee must often be used international comparisons; in this measure, consideration is not given to average hours worked.

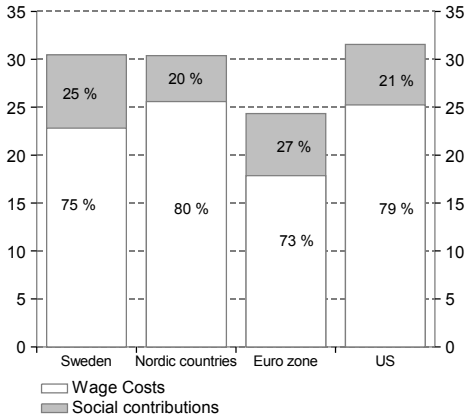
Table 18 Actual Labour Cost per Employee – Business Sector, 2003

In Swedish currency (SEK)

	Labour cost	of which wage costs	of which collective contributions
Sweden	30 461	22 806	7 655
Nordic countries excl. Sweden	30 390	25 583	4 807
Euro zone	24 328	17 869	6 459
United States	31 557	25 255	6 302

Note: The OECD statistics on labour costs are based on the National Accounts of each country. The definition includes collective contributions but not wage-dependent taxes on output. The Nordic countries include Denmark, Finland and Norway.
Source: OECD.

Diagram 72 Actual Labour Cost per Employee, 2003, Separated Into Wage Costs and Collective Contributions – Business Sector
Thousands of SEK

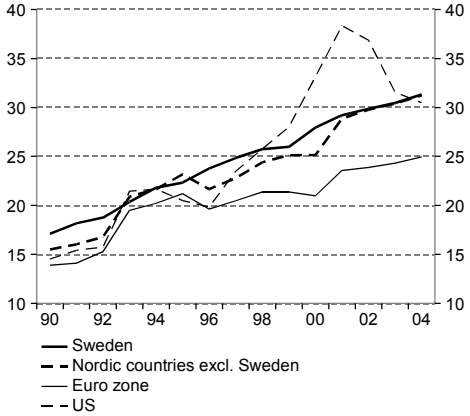


Note: Nordic countries excl. Sweden.
Källa: OECD.

Table 18 shows the actual labour cost per employee in Sweden and in some regions of importance from the standpoint of competition. The average labour cost per employee in the business sector is the same in Sweden as in other Nordic countries and the United States, but higher than in the euro zone. Of the total labour cost per employee in Sweden, collective contributions account for 25 percent, somewhat more than in other Nordic countries and the US, but less than in the euro zone (see Diagram 72).

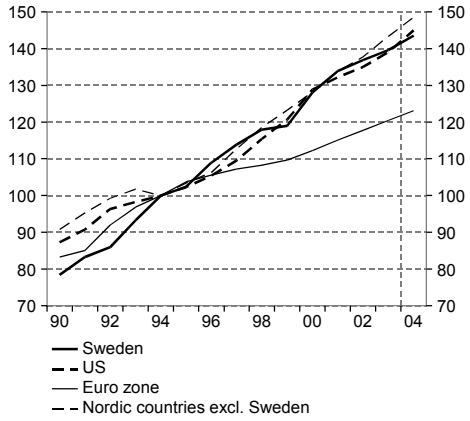
Viewed over a longer period, labour costs per employee have been approximately the same in Sweden as in other Nordic countries, but higher than in the euro zone, a difference that has increased in recent years (see Diagram 73). Compared to the US, labour costs were somewhat higher in Sweden in the early 1990’s, but considerably lower around the turn of the millenium, when the dollar was extremely strong in relation to the Swedish krona.

Diagram 73 Actual Labour Costs
Thousands of SEK



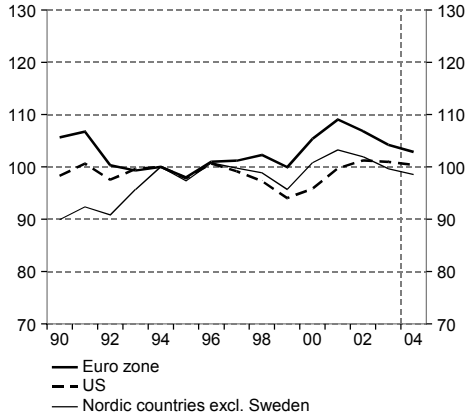
Source: OECD.

Diagram 74 Nominal Labour Costs per Employee, National Currency – Business Sector
Index 1994=100



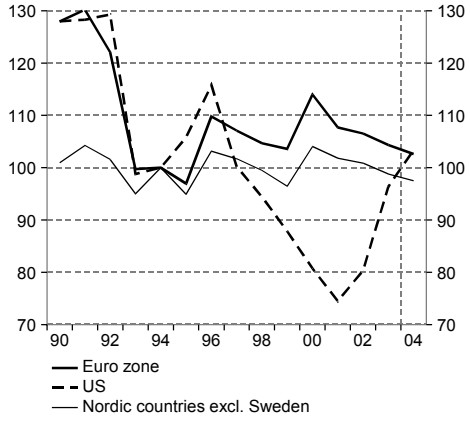
Source: OECD.

Diagram 75 Relative Unit Labour Costs, National Currency – Business Sector
Index 1994=100



Source: OECD.

Diagram 76 Relative Unit Labour Costs, Common Currency – Business Sector
Index 1994=100



Source: OECD.

Relative Cost Situation Balanced When Measured in a Common Currency

The Swedish business sector was not competitive at the outset of the 1990's, as is evident, for instance, in the substantial depreciation of the krona after the changeover to a floating exchange rate at the end of 1992. A relevant initial point for the analysis of the competitive situation is therefore some time after that transition.

Compared with 1994, labour costs per employee, measured in national currency, have increased at approximately the same rate in Sweden as in other Nordic countries and the UN, but considerably faster than in the euro zone (see Diagram 74). From the standpoint of competitiveness, a larger increase in labour costs need not be a problem in itself if it results from correspondingly higher growth in productivity. Through comparing the development of labour costs per unit of output in Sweden relative to other countries, or so-called relative unit labour costs, differences between Sweden and other countries in regard to the increase in labour productivity are also considered. This year, relative unit labour costs in national currency are the same as in 1994 compared to other Nordic countries and the US (see Diagram 75). However, they have varied in particular years of the period; given the similar development of labour costs, these variations arose from differences in productivity growth. In 1996-2000 productivity growth was high in Sweden compared to other Nordic countries and the US, as is reflected in decreasing relative unit labour costs. In 2001, on the other hand, productivity growth was negative in Sweden, though it has subsequently risen again (see the section headed "Labour Productivity" in Chapter 3). Compared to the euro zone, relative unit labour costs in Sweden are only marginally higher in 2004 than in 1994, even though Swedish labour costs have increased much faster. The reason is that productivity growth has been much higher in Sweden than in the euro zone during the entire period.

In assessing the actual tendency in the competitiveness of the Swedish business sector, consideration must also be given to changes in exchange rates; this is done by measuring relative unit labour costs in a common currency (see Diagram 76). It is then clear that Sweden's relative unit labour cost as expressed in a common currency has been stable in relation to other Nordic countries and to the euro zone since 1994. The variation in relation to the US, by contrast, has been substantial, the reason being changes in the value of the dollar.

In summary, the conclusion from Diagram 76 is that at the current exchange rate the cost situation in 2004 appears to be relatively balanced in Sweden compared to other countries. This conclusion is quite consistent with the analysis of internationally required rates of return (see the section headed "International Conditions" in Chapter 2). The documentation presented is one of several indicators which taken together provide a basis for the

NIER's overall assessment of the cost situation in the Swedish business sector in 2004 (see Chapter 2).

Inflation – Development and Expectations

Modest Increase in Consumption Prices

When comprehensive labour negotiations began in the spring of 2004, inflation had been gradually declining since early in 2002. For both domestic and imported goods and services, price increases had become more limited (see Diagram 77). With strong productivity growth and modest wage increases, the tendency in costs was subdued. These factors, together with slight demand-related inflationary pressure and low resource utilization, have considerably slowed the pace of domestically generated inflation. Modest price increases in internationally traded goods and gradual appreciation of the krona have contributed to lower prices of imported goods and services.

Because of all these developments, CPI inflation, adjusted for energy prices, gradually decreased from almost 3 percent at the outset of 2002 to a mere 0.1 percent in the second quarter of 2004 (see Diagram 78). CPI inflation including energy prices, which was more than 3 percent in the first quarter of 2003, had dropped by a full 3 percentage points a year later. In the second quarter of this year, there was a slight rise in CPI inflation, primarily due to higher prices of oil products.

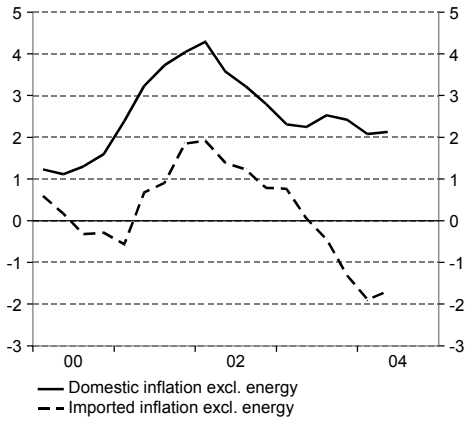
Expectations of Inflation and Wage Increases

The expectations of different actors regarding future prices and wages affect the actual development of prices and wages and are therefore one of the many elements on which the NIER's forecasts are based.

The inflation rate expected in one year, as measured through various surveys, is now 0.5 percentage point lower than when labour negotiations started in the spring of 2004. There is an exception for inflationary expectations in the Business Tendency Survey, which were already low a year ago. The labour-market parties have shown the greatest decrease in inflationary expectations, while household expectations have been more stable (see Diagrams 79 and 80).

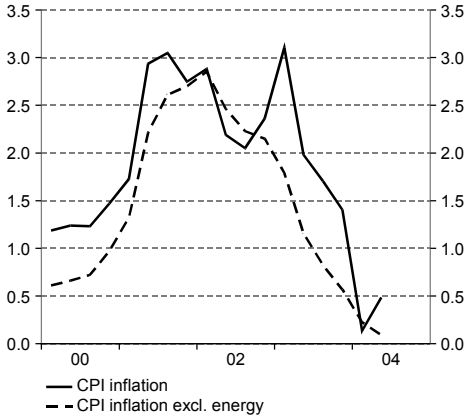
The inflation rate expected in two years has also decreased in the past year (see Table 19). As with the expectations for the rate in one year, the labour-market parties have shown the greatest decrease in inflationary expectations two years ahead.

Diagram 77 Inflation
Percent, quarterly values



Sources: Statistics Sweden and NIER.

Diagram 78 Inflation
Percent, quarterly values

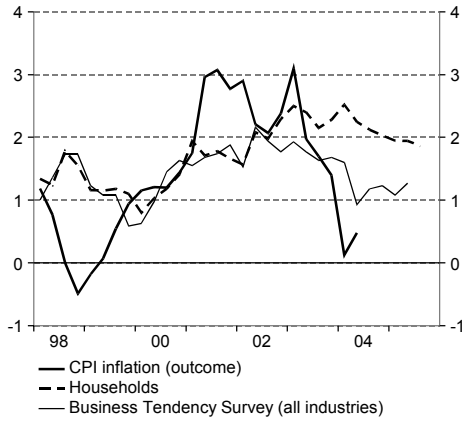


Sources: Statistics Sweden and NIER.

Diagram 79 Expectations of Inflation in One Year
Percent, quarterly values

Note: Expectations are for one year later.
Sources: Statistics Sweden and Prospera.

Diagram 80 Expectations of Inflation in One Year
Percent, quarterly values



Note: Expectations are for one year later.
Sources: Statistics Sweden and NIER.

Diagram 81 Expectations of Wage Increases in One Year
Percent, quarterly values

Note: Expectations are for one year later.
Sources: Prospera, National Mediation Office and NIER.

Table 19 Expectations of Inflation and Wage Increases
Percent per year

	2003		2004	
	1 yr.	2 yrs.	1 yr.	2 yrs.
Expected Inflation Rate				
Employer organizations (Prospera)	2.2	2.3	1.6	1.8
Employee organizations (Prospera)	2.1	2.2	1.7	1.9
Money-market operators (Prospera)	1.8	2.0	1.6	2.0
NIER Consumption Survey (HIP)	2.1		1.9	
Business Tendency Survey (all industries)	1.2		1.3	
Expected Inflation Rate				
Employer organizations (Prospera)	3.3	3.2	2.7	2.9
Employee organizations (Prospera)	3.2	3.2	2.8	2.9

Note: Expectations in 2003 and 2004 are measured in the third quarter of each year and refer to the inflation rate and wage increases expected one year and two years later. An exception is the inflationary expectations in 2004 according to the Business Tendency Survey, which were measured in the second quarter.
Sources: Aragon, Prospera, Statistics Sweden and NIER.

In the third quarter, the labour-market parties expected that wages would be rising by 2.9 percent two years later. These expectations were somewhat lower than in the same quarter of 2003, particularly in regard to the expected rate of increase in one year (see Diagram 81).

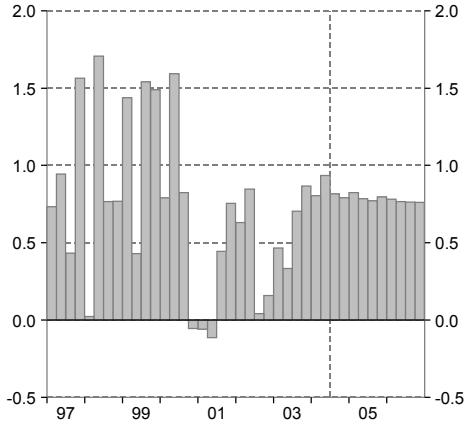
In summary, inflationary expectations have become more subdued in the past year. Expectations regarding wage increases have also been lowered; the explanation may be that the settlements reached in the spring of 2004 are less than those for the previous contract period, 2001–2003 (see Table 19). Expectations are also lower than in the NIER's forecasts of wage increases in 2004–2006.

6 The Main Scenario for Wage Formation in 2004–2010

After a period of lacklustre growth, the Swedish economy began expanding in the summer of 2003 (see Diagram 82). Though employment continued to decrease, it has now stabilized and is expected to pick up around year-end (see Diagram 83). As in previous economic upturns, there is a certain time lag before employment begins rising.

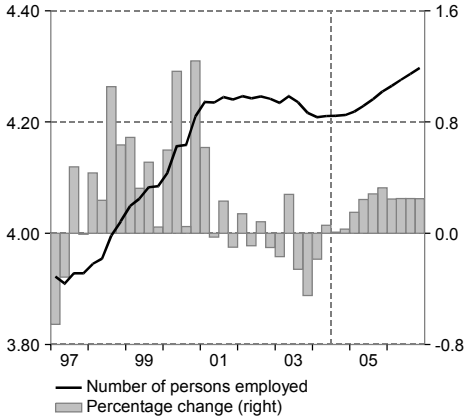
After the severe crisis of the early 1990's, the Swedish economy has been relatively strong. Both labour productivity and employment have developed favourably over the past decade, and productivity has continued to surge in the last two years despite the weak economic tendency. All these developments taken together indicate that the productivity growth rate sustainable in the long run has increased, and it is now considered to be much higher than in the 1980's; see also Chapter 2, "Conditions for Wage Formation in the Business Sector". Continued relatively strong productivity growth in the next few years will contribute to rapid growth in GDP, while unemployment recedes toward its equilibrium level. The labour supply, however, will be limited by demographic factors and thus tend to curb GDP growth. The high growth in productivity will provide scope for a comparatively rapid rise in real wages. A more subdued tendency in wages, however, would lead to lower equilibrium unemployment and thus make it possible to achieve permanently higher employment. For a more detailed analysis, see the box captioned "The NIER's Recommendations for the 2005 Labour Negotiations".

Diagram 82 GDP
Percentage change, seasonally adjusted quarterly values



Sources: Statistics Sweden and NIER.

Diagram 83 Employment
Millions and percentage change, seasonally adjusted quarterly values



Sources: Statistics Sweden and NIER.

Development of Demand

World Economy Continuing to Strengthen

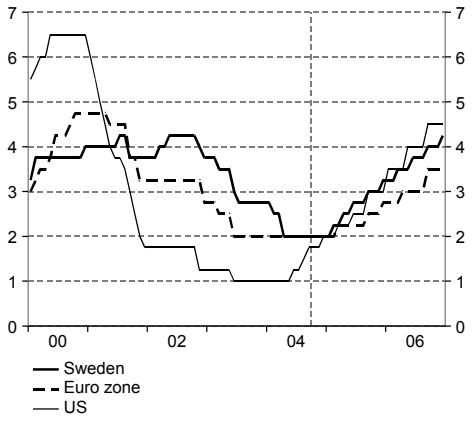
International economic recovery is continuing despite soaring oil prices this year. In countries where recovery began early, like the US, the UK and parts of Asia, growth has already culminated. The euro zone is still lagging behind, although the upturn is beginning to gain momentum there as well (see Diagram 84). In summary, the international economic recovery is now entering a more subdued phase, while also becoming more widespread geographically.

The rapid recovery around the end of last year was partly a reaction after the war in Iraq and the SARS epidemic and thus temporary to some extent. The high growth has also been promoted by an expansionary economic policy in a number of countries, the US not least. Resource utilization has now begun rising in many parts of the world. The first steps toward a less

Diagram 84 GDP in Other Countries
Annual percentage change

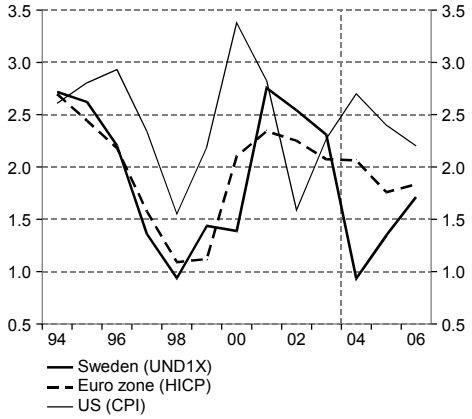
Sources: OECD, Eurostat, Bureau of Economic Analysis and NIER.

Diagram 85 Policy Interest Rates
Percent



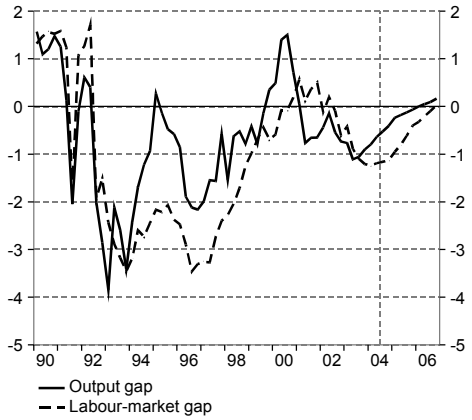
Sources: The Riksbank, ECB, Federal Reserve and NIER.

Diagram 86 Inflation
Annual percentage change



Sources: Statistics Sweden, Eurostat, Bureau of Labor Statistics and NIER.

Diagram 87 Output Gap and Labour Market Gap
Percent of potential GDP and potential hours worked, respectively, quarterly values



Note: The labour-market gap is calculated as the difference between the actual and potential level of hours worked.
Source: NIER.

expansionary economic policy have therefore been taken in several countries, including the US, Canada, the UK and some of the new EU countries, where central banks have raised their policy interest rates during the year (see Diagram 85). In the US and elsewhere, fiscal policy is also expected to assume a somewhat tighter stance in the next few years to remedy large budget deficits. A more restrictive US fiscal policy will tending to weaken the dollar and reduce the massive deficit in the current account.

For the development of the Swedish economy, however, the euro zone matters more since it receives the bulk of Swedish exports. In the euro zone, the economic upturn has not advanced so far, but growth will continue to increase in 2005 and 2006 (see Diagram 84). In some euro-zone countries, such as France and Spain, consumption and investment are rising relatively fast, but in Germany the upturn so far has been due solely to increasing exports. The strong tendency in the German exporting industries, however, is expected to begin spreading to the rest of the economy. The labour-market situation will then improve and in combination with continued low interest rates will stimulate growth in consumption.

Although inflation in the euro zone is currently somewhat higher than the ECB's target, the slack labour market and low level of resource utilization mean that there is little underlying inflationary pressure (see Diagram 86). The ECB is therefore expected to maintain a low official interest rate for a while yet (see Diagram 85). With the relatively sluggish pace of recovery, resource utilization will not return to a normal level until 2007, when the ECB's official interest rate will also be back to normal.

The Economy in Sweden Has Begun to Pick Up

GDP growth began picking up in the second half of 2003 and was 0.8 and 0.9 percent, respectively, in the first and second quarters of 2004 (see Diagram 82). In the first half of 2004, GDP was 3.7 percent higher than in the same period last year. Exports continued surging, and there was also an upturn in investment. Since summer last year, GDP growth has been higher than potential growth, i.e. the growth trend compatible with stable inflation; for this reason, resource utilization has gone up (see Diagram 87). So far, however, there has been no increase in employment, though labour productivity has been rising rapidly and the number of hours worked has stopped decreasing.

The surge in Swedish exports since summer last year has stimulated manufacturing output. The unexpectedly strong productivity tendency has made it possible to achieve higher output in the manufacturing sector without increasing the number of employees, but with continuing improvement in this sector, employment will go up. Household consumption has also been rising recently at a rather rapid rate. Nevertheless, demand for

services has not been increasing fast enough for employment to go up in the service industries. One factor stimulating household consumption is that the Riksbank has lowered the repo rate in several steps in recent years (see Diagram 85).

Table 20 Supply and Demand – Sweden

Annual percentage change, constant prices

	2003	2004	2005	2006	2007	2008–10
GDP	1.6	3.8	3.3	2.8	2.4	2.1
Household consumption expenditure	1.9	2.2	3.1	3.4	3.5	3.4
General-government consumption expenditure	0.6	1.1	1.7	0.6	0.4	0.4
Gross fixed capital formation	–2.0	2.9	6.5	8.3	8.7	3.4
Stockbuilding[1]	0.2	–0.3	0.4	–0.1	0.0	0.0
Exports of goods and services	5.5	10.9	7.9	6.4	4.8	5.0
Imports of goods and services	5.0	6.8	9.9	8.2	7.6	6.2
Net exports[1]	0.6	2.2	–0.1	–0.2	–0.8	–0.3
Current account[2]	5.6	7.1	6.8	5.9	4.9	4.1

[1] Change in percent of GDP for the previous year.

[2] In percent of GDP, current prices.

Sources: Statistics Sweden and NIER.

With global GDP growth decreasing and the Swedish economy approaching full capacity utilization, growth in exports will subside in 2006 and 2007. Thereafter, exports are forecast to grow at a somewhat slower rate than the world market. Investment, which usually lags behind in economic upturns, will speed up and increase by more than 8 percent per year in 2006 and 2007 (see Table 20). Household consumption will also be increasing vigorously throughout the period until 2010. Underlying this development will be several factors. Household income will be rising rapidly in 2005–2006 as employment goes up while income taxes are reduced and transfer payments increased. Together with continued low inflation, these developments will cause a relatively substantial rise in real disposable income. In addition, demographically based net lending will go down in the later years of the period as the number of persons in upper middle age decreases. As a result, consumption will be growing faster than GDP, and the foreign-trade surplus will decrease, though from a very high level (see Table 20 and Diagram 88).

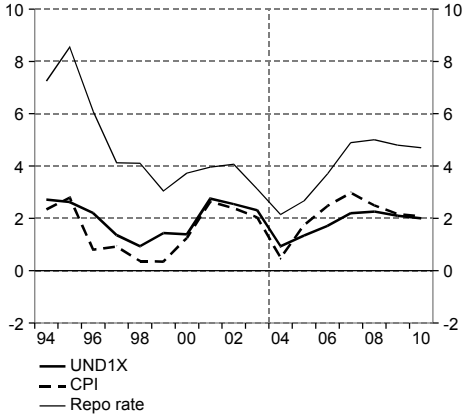
Diagram 88 Net Exports

Percent of GDP

Sources: Statistics Sweden and NIER.

Diagram 89 Inflation and Repo Rate

Percent

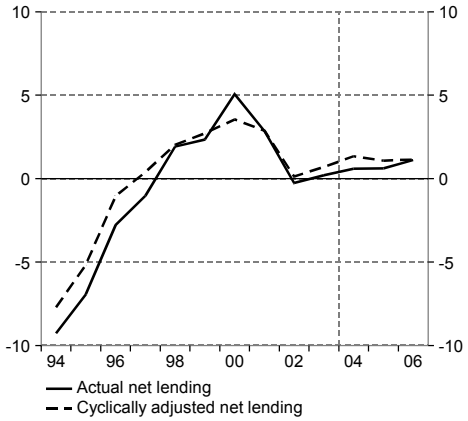


Sources: Statistics Sweden, The Riksbank and NIER.

Inflationary Pressure to Remain Low

The strong tendency in productivity and more moderate increases in labour costs have contributed to low cost pressure in the business sector. Since these developments will continue in the coming year, inflation will rise only slowly despite the improved economy (see Diagram 89). Consequently, the Riksbank should not begin raising the repo rate until the first quarter of 2005. Thereafter, the repo rate should be increased relatively

Diagram 90 Net Lending – General Government Sector
Percent of GDP



Sources: Statistics Sweden and NIER.

rapidly until 2007 and somewhat further in 2008. With this monetary policy, inflation as measured by the UND1X can be expected to meet the target of 2 percent in 2007 and then to rise a little more before gradually dropping back to 2 percent.

General Government Finances to Miss Target

Parliament and the Government in Sweden have set a target for general-government net lending of 2 percent of GDP on average over a business cycle. Since 2002, net lending has been below the target, and the economic slump is only part of the explanation (see Diagram 90). With the economy now improving, net lending is also on the rise, but because of unfinanced expenditure increases and tax cuts in the central-government budget bill for 2005, net lending will be only 1.1 percent of GDP in 2006. Cyclically adjusted net lending will be slightly higher than actual net lending this year and next year, but the same as actual net lending in 2006.

Table 21 Key Numbers for Sweden
Annual percentage change and percent, respectively

	2003	2004	2005	2006	2007	2008–10
CPI	2.0	0.5	1.7	2.5	3.0	2.2
UND1X	2.3	0.9	1.3	1.7	2.2	2.1
Repo rate	3.1	2.1	2.7	3.7	4.9	4.8
General-government net lending[1]	0.2	0.6	0.6	1.1	1.4	1.9
Output gap[2]	–1.0	–0.6	–0.2	0.1	0.2	0.1
Real disposable income	0.2	1.3	2.1	2.4	2.3	2.3
Household net-lending ratio[3]	8.3	7.0	6.1	5.6	4.5	2.4

[1] In percent of GDP.
[2] Percent of potential GDP.
[3] Net lending in percent of disposable income.
Sources: Statistics Sweden, the Riksbank and NIER.

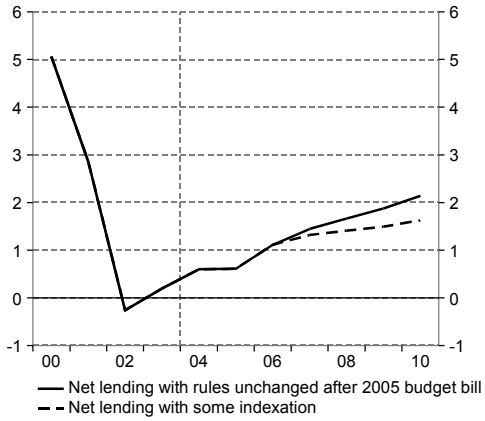
It is assumed that after 2006 general-government consumption will increase with demographically projected needs; thus, current staff intensity in government services will be maintained. Total general-government consumption and employment are forecast to increase by 0.4 percent per year in 2006–2010 (see Table 20). If general-government consumption were to increase faster than in the main scenario and more in line with the historical trend, net lending would decrease correspondingly. Then higher tax rates or reduced transfer payments would be required to achieve the targeted surplus, dampening household consumption. With the modest increase in general-government consumption in 2006–2010, general-government consumption as a share of GDP decreases from 27.9 percent in 2004 to 27.4 percent in 2010.

On the assumption of unchanged rules after the budget proposal for 2005 – i.e. no more unfinanced reductions in taxes or increases in expenditure – the net lending of the general-government sector is calculated to be 2.1 percent of GDP in 2010. In every year of the period 2002–2009, however, net lending is less than 2 percent (see Diagram 91 and Table 21). If the Government's and Parliament's target of a two-percent surplus is to be met on average 2006–2010 through permanent increases in taxes or reductions in expenditure 2006, such measures must be on the order of SEK 10 billion.

The assumption of unchanged rules in the main scenario means that aside from the existing indexation there will be no increases in child-care allowances, study allowances, the benefit ceiling in the systems of unemployment and health insurance and the guaranteed pension, for example. Such an assumption may prove rather unrealistic in the longer term since these welfare benefits would then decrease in relation to the average wage. If instead it is assumed that benefit levels and certain tax scales are continually reformed to follow the development of wages, net lending will then be 1.6 percent of GDP in 2010 (see Diagram 91). In this case, there would have to be corresponding permanent increases in taxes or cutbacks in expenditure in 2006 for the target to be met in 2006–2010.

A larger labour supply than in the main scenario would result in higher employment in 2010. One way to increase the labour would be by further improving the integration of persons born abroad (see the box captioned "Effects of Further Improving Integration of the Foreign Born" in Chapter 3) or by reducing ill health.[32] Then both GDP and the tax bases would be increased, thus strengthening general-government finances.

Diagram 91 Net Lending – General Government Sector
Percent of GDP



Sources: Statistics Sweden and NIER.

Employment and Output

Unemployment Dropping and Resource Utilization Rising

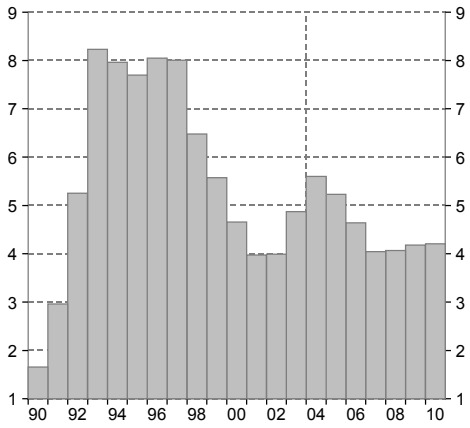
The so-called output gap, or the difference between actual and potential output, has been negative since 2001 (see Diagram 92). The high rate of GDP growth means that the output gap has been rising (becomes less negative) since the end of last year. This year GDP is expected to increase by a full 3.8 percent, but the increase will be due in part to an unusually large number of working days this year, which will contribute an estimated 0.6 percentage point to both actual and potential output. Adjusted for the number of working days, GDP is forecast to increase by

Diagram 92 Output Gap
Percent of potential GDP

Sources: Statistics Sweden and NIER.

[32] Lower equilibrium unemployment could also contribute to higher employment, an effect analyzed in *Wage Formation – Economic Conditions in Sweden 2003*, NIER.

Diagram 93 Unemployment Rate
Percent of labour force



Sources: Statistics Sweden and NIER.

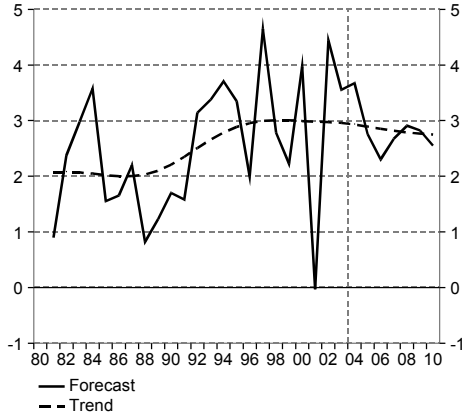
3.2 percent this year and by 3.3 and 3.1 percent, respectively, in 2005 and 2006 (see Table 22). With this strong growth, there will be an upturn in employment around year-end (see Diagram 83). The unemployment rate, however, is already decreasing this year owing to expansion of labour-market programmes. In the scenario, employment continues rising in 2006, when the output gap closes and the unemployment rate decreases to the estimated equilibrium level around 4.3 percent (see Diagram 93).

Table 22 Output and Employment – Sweden
Annual percentage change and percent, respectively

	2003	2004	2005	2006	2007	2008–10
GDP, basic prices[1]	1.5	3.2	3.3	3.1	2.3	2.0
Hours worked[1]	–1.1	0.3	1.1	1.2	0.3	–0.1
Labour productivity	2.6	2.9	2.1	1.9	2.0	2.1
Average hours worked	–0.8	0.8	0.5	0.2	–0.1	–0.1
Employment	–0.3	–0.5	0.6	1.1	0.3	0.0
General-govt. sector	0.9	0.5	1.1	0.6	0.5	0.5
Business sector and NPISH	–0.7	–0.9	0.4	1.3	0.3	–0.2
Unemployment rate	4.9	5.5	4.9	4.3	4.0	4.2

[1] Calendar-adjusted.
Sources: Statistics Sweden, the Riksbank and NIER.

Diagram 94 Labour Productivity – Business Sector
Annual percentage change, calendar-adjusted



Sources: Statistics Sweden and NIER.

Unemployment drops below its equilibrium level in 2007, when the output gap is positive. Thereafter, the economy adjusts toward equilibrium, with a successively diminishing gap and slightly rising unemployment. During the period 2008–2010 the labour-supply trend stagnates, with virtually no change expected in employment. The increases in general-government consumption and output require a slightly rising input of labour, which means that in the business-sector the tendencies both in number of hours worked and in employment are weaker than the averages for the economy as a whole (see Table 22). The tendency in business-sector productivity, which for cyclical reasons has been high in recent years, falls below the trend in 2006 and 2007 (see Diagram 94). Thereafter, productivity follows its growth trend, which is expected to be somewhat lower in the coming five years than in the last ten years, though still considerably higher than in the 1980's. The effect of all these factors is that GDP increases by an annual average of 2.0 percent in 2008–2010.[33]

[33] GDP from the output side and value added in the business sector and by public authorities are measured in basic prices, i. e. excluding taxes on products (primarily VAT) and product subsidies. GDP at market prices normally develops at the same rate as GDP at basic prices, but when the composition of demand varies, differences may arise. In the main scenario, household consumption, which is rather heavily taxed, increases faster than GDP, thus raising the rate of growth in GDP at market prices.

Wages, Labour Costs and Profits

Wage Increases to Accelerate in Business Sector

The rate of wage increases in the business sector has slowed in 2003 and 2004 but will pick up again next year (see Table 23). This development is due partly to the design of collective-bargaining agreements and partly to rising demand for labour that pushes wage increases above settlement levels. The upturn is occurring in all industries, but in 2005 it will be strongest in manufacturing and construction, where economic recovery has come farthest. In services, where growth in demand will not pick up substantially until next year, demand for labour and thus wage increases will be rising later on.

Table 23 Labour Costs and Wages

Annual percentage change

	2003	2004	2005	2006	2007
Business sector					
Hourly earnings[1]	3.2	3.1	3.4	3.8	4.9
Cost of labour[2]	2.8	2.5	3.4	4.0	5.2
General-government sector					
Hourly earnings[1]	3.9	3.9	3.9	3.9	4.1
Cost of labour[2]	5.8	4.0	3.9	4.2	4.4
Local government					
Hourly earnings[1]	3.8	3.9	4.0	4.0	4.1
Cost of labour[2]	5.6	4.3	4.0	4.3	4.4
Entire economy[3]					
Hourly earnings[1]	3.5	3.4	3.6	3.8	4.7
Cost of labour[2]	3.6	2.9	3.6	4.1	5.0

[1] Short-term Wage and Salary Statistics.

[2] National Accounts, calendar-adjusted.

[3] Including non-profit institutions serving households (NPISH).

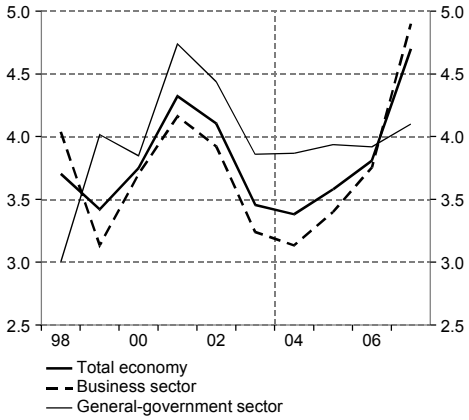
Sources: Statistics Sweden and NIER.

The rate of wage increases in the business sector shows a marked cyclical pattern, with a lower rate of increase in economic downturns and a higher rate in upturns, whereas wages in the general-government sector follow a steadier path (see Diagram 95). With the high level of resource utilization in 2007, wages are expected to increase faster that year in the business sector than in the general-government sector.[34]

In the spring of 2005, negotiations are scheduled for new collective-bargaining agreements in local government. There is considerable uncertainty about the duration of the contract period. In the current forecast, it is assumed that the contract will be for three years, with annual wage settlements of 2.3 percent.

Diagram 95 Hourly Earnings

Annual percentage change



Sources: Statistics Sweden and NIER.

[34] This autumn, new agreements will be negotiated for the central-government sector. These are expected to follow the example of the business sector and thus to provide for somewhat lower wage settlements than in recent years.

Additional central-government subsidies to local governments in 2005–2007 mean increased employment, raising the rate of wage increases in local government to some extent. In total, the annual rate of wage increases in local government is estimated to be 4 percent in 2005–2007, the same average rate of increase as in the business sector.

There will be an increasing need to recruit new staff in the general-government sector as a result of the large numbers retiring in the period ahead. In time, this development will push up wages in that sector, but with the offsetting factor of lower wage levels for the new employees than for those retiring (see also the analysis in Chapter 4, "Conditions for Wage Formation in the General Government Sector"). Thus, wages in the general-government and business sectors will follow the same tendency in the long run.

For social contributions, the same percentages are expected to remain in effect in the next few years. Parliament is planning to propose new rules this autumn for sick pay beginning next year. One possibility being considered is to reduce the period of employer responsibility for sick pay from three to two weeks. Instead, the employer would pay 15 percent of the sick employee's earnings after the first two weeks of sick-listing. Employers would be compensated for the net change through lower employer contributions. These changes have not been considered in the current forecast since they have not yet been presented in a formal proposal. In the NIER's opinion, the changes would have little net effect on labour costs in the economy as a whole. Nevertheless, labour costs are expected to increase somewhat faster than wages, according to the Short-term Wage and Salary Statistics, as has been the case on average in the past ten years. The explanation is partly that the Short-term Wage and Salary Statistics do not reflect the increasing proportion of white-collar employees with higher earnings per hour, a tendency that is expected to continue until 2010.[35]

The rate of increase in the consumption real wage, which measures the development of a wage-earner's real income after taxes, is going up again this year after decreasing last year because of higher local-government taxes and rising inflation. This year local-government taxes will not be raised so much, and next year total income taxes will be lowered slightly. In addition, the rate of inflation has dropped to a lower level this year, also contributing to a rising rate of increase in the consumption real wage. Thereafter, it is anticipated that income taxes will remain unchanged and inflation will be consistent with the Riksbank's target. Thus, the consumption real wage is expected to show a relatively strong tendency throughout the period 2006–2010 (see Diagram 96).

Diagram 96 Consumption Real Wage
Annual percentage change

Sources: Statistics Sweden and NIER.

[35] See the box captioned "Wages and Statistics" in *Wage Formation – Economic Conditions in Sweden 2003*, NIER

Labour Costs Increasing Faster

With the slack demand for labour, the level of wage increases has dropped. At the same time, labour productivity has been surging. Consequently, the labour-cost share of value added has been decreasing since 2001 (see Diagram 97). The analysis in Chapter 2, "Conditions for Wage Formation in the Business Sector," indicates that the labour-cost share, and real wages as well, were close to their equilibrium levels in 2003. The labour-cost share is expected to continue decreasing this year and next year as a result of relatively modest wage increases. The profit situation in the business sector will thus improve, and in 2005 the labour-cost share will be somewhat below its equilibrium level. Labour costs are forecast to go up by an annual average of 4.6 percent in 2006–2010, somewhat faster than payroll capacity (see Table 24). The labour-cost share will thus rise toward its estimated equilibrium level of around 61 percent in 2010.

Diagram 97 Labour Cost Share – Business Sector
Percent of value added

Sources: Statistics Sweden and NIER.

Table 24 Key Numbers – Business Sector
Annual percentage change and percent

	2003	2004	2005	2006	2007	2008–10
Productivity[1]	3.6	3.7	2.8	2.3	2.7	2.8
Value-added price	1.7	0.6	1.6	1.1	1.7	1.7
Payroll capacity	5.3	4.3	4.4	3.4	4.4	4.4
Labour costs[1]	2.8	2.5	3.4	4.0	5.2	4.6
Labour-cost share[2]	61.2	59.8	59.2	59.7	60.2	60.5

[1] Calendar-adjusted.

[2] Wages, collective contributions and earnings-dependent taxes on output as a percentage of value added at basic prices.

Sources: Statistics Sweden and NIER.

The development of business-sector labour costs as described in the main scenario is compatible with the Riksbank's inflation target and unemployment close to equilibrium in 2010. The labour-cost share is also close to equilibrium, meaning that real wages are at a level where the rate of return on capital is at par with the rate required internationally.

However, the calculations are of course uncertain, and the actual development of labour costs may well deviate from the forecast. For example, the equilibrium level of the labour-cost share may continue to decrease, requiring that the rate of increase in labour costs slow to a corresponding degree. In addition, disturbances can naturally occur, giving rise to greater variations in output, employment and labour costs than in the relatively steady tendency described in the main scenario. Another area of uncertainty is productivity growth, which may be either higher or lower than in the main scenario. As discussed in the box captioned "The NIER's Recommendations for the 2005 Labour Negotiations," higher employment and lower equilibrium unemployment, which would also benefit the economy in

general, would temporarily require a slower rate of increase in wages than in the main scenario.

The NIER's Recommendations for the 2005 Labour Negotiations

In the NIER's forecast, which is presented in this chapter (Chapter 6, "The Main Scenario for Wage Formation 2004–2010"), hourly labour costs in the economy as a whole will increase by an average of 4.2 percent per year in 2005–2007. This increase includes changes in legislated and negotiated collective contributions, reductions in work hours and changes in employer costs of sick-listing and rehabilitation. Hourly earnings in the economy as a whole, as measured in the Short-term Wage and Salary Statistics, will increase by 4.0 percent per year in 2005–2007.

The forecast reflects the development that is most likely in the NIER's opinion – strong economic recovery that is also compatible with the Riksbank's inflation target. On the other hand, the forecast does not describe the development that is optimal for the economy in general. This box is devoted to discussion on ways for the labour-market parties to help achieve higher employment and thus a higher standard of welfare in the future.

From a general economic standpoint, it is desirable that wage formation function in a way appropriate to a lower long-term equilibrium unemployment rate than the 4.2 percent on which the forecast is based. One way to improve the functioning of wage formation is through greater co-ordination of labour negotiations. This means that in wage formation the labour-market parties give even more consideration to the costs of high unemployment to the economy in general. Specifically, such consideration would be reflected in more modest wage increases at a given unemployment level compared to the forecast. In that case, labour costs would rise at a lower rate than forecast until unemployment had dropped to a lower level; thereafter, wages would increase at the same rate as in the main scenario. To achieve permanently lower unemployment, the NIER therefore recommends temporarily smaller wage increases than those forecast.

As was analyzed in Chapter 1, "The Swedish Labour Market," a higher degree of co-ordination in wage negotiations can contribute to lower equilibrium unemployment primarily by enabling the parties to give greater consideration to the economy as a whole. However, to the extent that more co-ordinated wage formation also reduced flexibility in wages, the effects for the economy in general would be less positive. Greater restraint in wage formation would then be counteracted by poorer matching on the labour market. It is therefore important that increased co-ordination not make it harder to achieve economically desirable adjustments in relative wages.

A more complete analysis of the consequences of greater co-ordination can be found in *Wage Formation – Economic Conditions in Sweden 2003*, NIER. Some of the principal conclusions are worth mentioning here as well. A higher degree of co-ordination means that the parties change their behaviour permanently so that the rate of wage increases at a given level of unemployment will be lower. In terms of the labour-market model described in the box captioned "Equilibrium Unemployment" in Chapter 1, this change means that the wage-determination curve shifts to the right, leading in turn to lower equilibrium unemployment and higher employment. Employment will tend to increase more than unemployment decreases. The reason is that more individuals attempt to enter the labour market now that there are more vacancies and fewer unemployed persons. In addition to higher employment and lower equilibrium unemployment, the long-term effects will include higher GDP and improved general-government finances. The resulting margin can be used to reduce taxes, to raise expenditure or to increase general-government net lending. In addition, hourly earnings will be permanently somewhat lower than otherwise, but the long-term rate of wage increases will not be affected since it is determined in principle by the inflation target and productivity growth. This rate of wage increases will thus prevail at a lower rate of unemployment than before. For wage earners as a group, the somewhat lower hourly earnings are more than compensated by higher employment and the scope provided by stronger general-government finances for lower taxes or higher general-government expenditure than in the main scenario.

A somewhat more modest rate of increase in wages than in the forecast would also speed cyclical economic recovery. This effect is achieved to some extent through higher demand for labour resulting from lower wages, bur primarily through lower inflationary pressure that permits the Riksbank to follow a more expansionary monetary policy. In the 2005 labour negotiations, however, the latter effect

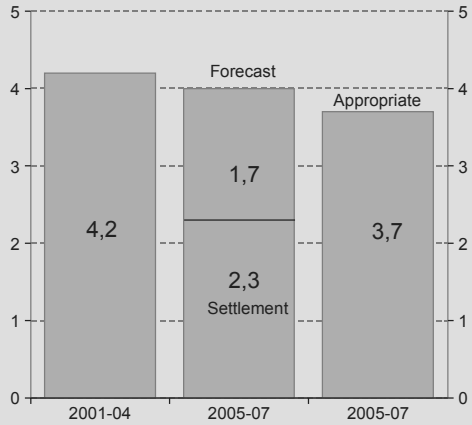
will be relatively minor since the negotiations primarily concern the local-government sector. As discussed in Chapter 4, "Conditions for Wage Determination in the General Government Sector," the development of wages in that sector has only a slight effect on consumption-price inflation. A lower rate of wage increases in the general-government sector impacts inflation only indirectly through a lower rate of wage increases in the business sector. However, a lower rate of wage increases in the local-government sector compared to the main scenario would improve local-government finances, enabling employment in local government to rise somewhat faster than in the main scenario.

In view of the general economic benefits of lower equilibrium unemployment and somewhat faster recovery of the labour market, the NIER recommended at the outset of the comprehensive labour negotiations in 2004 that the rate of wage increases in the business sector in 2004–2006 be reduced by 0.5 percentage point compared to the forecast. The 2005 negotiations cover a smaller portion of the labour market than in 2004, and the direct effect on inflation will be more limited. Moreover, there is relatively widespread consensus that the agreements in the business sector, and particularly in manufacturing, to some degree should set the norm for the agreements in other areas.

In view of the above, and of the agreements reached for 2004–2007, it is the NIER's opinion that it would benefit the economy as a whole for wage increases in local government to be 0.3 percentage point less than in the forecast for 2005–2007; in other words, the rate of increase should average 3.7 percent instead of the forecast 4.0 percent. Compared to the increases of 4.2 percent in 2001–2004, the new level recommended is 0.5 percentage point lower (see Diagram 98). The reduction can be achieved through lower wage settlements as well as more limited increases above the settlements.

Even after this reduction, however, the wage increases in local government in 2005–2007 will exceed the forecast increases in the business sector during the contract period 2004–2006.[36] Reducing the wage increases in local government would also lead to smaller increases for the business sector than in the forecast, to some extent through lower wage increases above current settlements, but primarily through lower settlements beginning in 2007. Thus, more modest wage increases in local government, reflecting lower equilibrium unemployment, would have no lasting effect on wages in local government compared to those in the business sector.

Diagram 98 Hourly Earnings – Local Government Sector
Annual percentage change



Note: Short-term Wage and Salary Statistics.
Sources: National Mediation Office and NIER.

[36] Here it is assumed that the contracts negotiated this autumn for the central-government sector will follow the example of the business sector and thus provide somewhat lower wage settlements than for the previous contract period. In other respects, the reasoning above in regard to further limitation of the wage increases in the business sector also applies to the central-government sector.