



# Wage Formation in Sweden

## Summary 2010

The **NATIONAL INSTITUTE OF ECONOMIC RESEARCH (NIER)** prepares analyses and forecasts of the Swedish and international economy and conducts related research. The NIER is a government agency accountable to the Ministry of Finance and is funded largely by the Swedish government. Like other government agencies, the NIER has an independent status and is responsible for the assessments that it publishes.

**Lönebildningsrapporten** is an analysis of the economic conditions for wage formation in Sweden. The **Report on Wage Formation** is a summary of Lönebildningsrapporten in English.

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# Preface

The Government has commissioned the NIER to prepare annual reports on the economic conditions for wage formation (bill 1999/2000:32, Wage Formation for Full Employment). The purpose of the report is to provide detailed factual documentation that will make it easier for the labour market parties and the National Mediation Office to reach a consensus on the economic conditions for wage formation and wage negotiations.

The preparation of this year's report was led by Juhana Vartiainen, Head of Division.

Stockholm, October 2010

Mats Dillén  
Director General



## Summary

After the 2010 pay negotiations, the rate of increase in earnings will slow down, particularly this year. The average increase in labour costs in 2010-2012 will probably end up in the interval of 1 percent to 2.5 percent per year, which the NIER considers optimal for output and employment. Wage formation will thus help soften the impact of the economic downturn. Labour productivity has fallen in 2007, 2008 and 2009, and much of the decrease in productivity will be lasting.

The NIER's analysis of various groups outside the ranks of the employed indicates that high minimum wages may constitute an obstacle to future increases in employment. This calls for caution in raising minimum wages and for policies that enhance individuals' skills and capabilities.

### 1.1 Labour Market and Wage Formation in the Economic Downturn

In the autumn of 2008, the Swedish economy entered a severe economic downturn. The crisis was brought on by a dramatic decline in the world economy, triggered in turn by an international financial crisis. Global output plummeted in 2009, and in many countries there was concern about a deflationary development. Both globally and in Sweden, the downturn in the economy has been accompanied by a shift to an expansionary monetary policy, with official interest rates close to zero, as well as various kinds of unconventional monetary policy measures. Since not even a maximally expansionary monetary policy was considered capable of preventing the dramatic global downturn, powerful fiscal policy measures have also been implemented to stimulate the economy, and action has been taken throughout the world to support the financial system.

In Sweden the decrease in output and employment was most evident in manufacturing, where output dropped by 18 percent in 2009. Service industries were not affected to the same extent. Employment and the number of hours worked did not fall to a degree matching the dramatic plunge in GDP. Thus, unemployment has also remained lower than was anticipated at the onset of the crisis. Beginning in the second quarter of 2009, GDP has been increasing once more, and the decline in employment ceased in the second half of 2009.

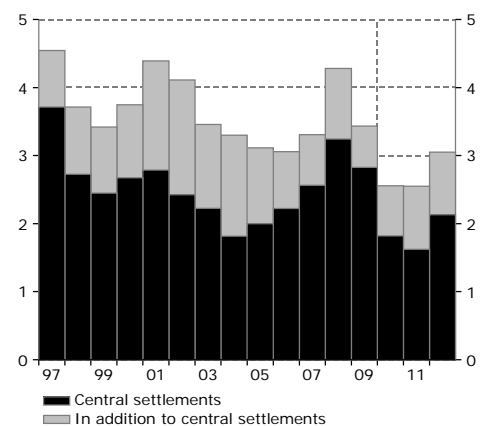
#### DILEMMA IN THE 2010 PAY NEGOTIATIONS

The dramatic downturn of the economy has posed a challenge to the bargaining parties in the 2010 pay negotiations. The 2007

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**Diagram 1 Hourly Earnings, Economy as a Whole**

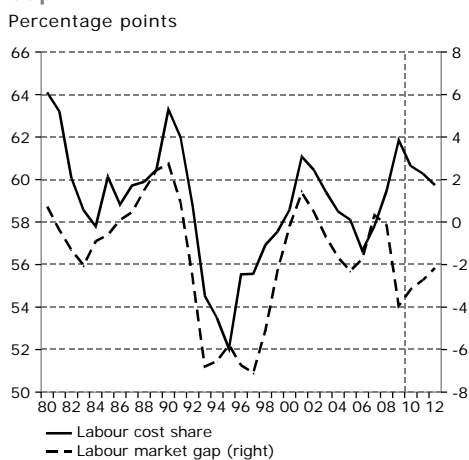
Annual percentage change



Note. Central settlements for 2010-2012 are forecast.

Sources: National Mediation Office and NIER.

**Diagram 2 Labour Cost Share, Business Sector, and Labour Market Gap**



Sources: Statistics Sweden and NIER.

negotiations were held at a time when the economy was expected to remain strongly expansionary, and they resulted in high centrally agreed pay settlements (see Diagram 1). But with the weak underlying tendency of productivity in 2007 and the drastic loss of demand in the wake of the financial crisis, business sector profitability declined substantially in 2007–2009. Under these new conditions, the central pay agreements reached in 2007 were no longer appropriate. The deterioration of business sector profitability was reflected in a marked increase in the labour-cost share of value added, while the labour market, which had up to 2008 been tight, was now facing a downturn (see Diagram 2).

In this special situation it was important for the parties in the 2010 pay negotiations to take the weakened profitability of the business sector into account and to agree on a lower rate of pay increases. Another factor, however, was that inflation had fallen to a lower level in 2008 and was expected to be less than the Riksbank's inflation target of 2 percent in every year of the period 2010–2012. With the Riksbank's repo rate already close to zero, and given the uncertainty about the effects of the unconventional monetary policy measures taken, too low a rate of increase in earnings and labour costs could limit price increases even more. This would lead to a higher real rate of interest that would delay economic recovery.

#### **REPORT ON WAGE FORMATION 2009: OUTPUT AND EMPLOYMENT WOULD BEST BE SUSTAINED BY MODEST BUT POSITIVE INCREASES IN LABOUR COSTS**

In these circumstances the NIER published its *Report on Wage Formation 2009*, which contained an analysis to determine what development of labour costs would be most favourable to output and employment in 2010–2012. In the NIER's assessment, an annual rate of increase in labour costs averaging between 1 and 2.5 percent during the period 2010–2012 would have the greatest beneficial effect on output and employment. A higher rate of increase in labour costs would force the Riksbank to shift earlier to a less expansionary monetary policy, thus delaying recovery of the economy. A higher rate of increase in labour costs would also aggravate the existing profitability problems of many manufacturing firms and thus adversely affect the development of employment. But a lower rate of increase in labour costs – that is, below the interval of 1 to 2.5 percent – would not speed up economic recovery, either. A lower rate of increase would indeed result in smaller price increases, but there would be no way to offset it with a more expansionary monetary policy since the Riksbank's policy interest rate (repo rate) was already close to zero by July 2009. Thus, a rate of increase in labour costs below 1 percent would lead to a higher real rate of interest, with an inhibiting effect on output and employment.

### ASSESSMENT PROVING CORRECT

The picture of the economy for 2010–2012 has changed since the analysis in the *Report on Wage Formation 2009*. The recession has turned out to be less severe than was forecast in the autumn of 2009. Unemployment in 2010 will remain just above 8 percent and will not exceed 11 percent as was anticipated in last year's report. The new data,<sup>1</sup> however, do not call for any significant change in the NIER's assessment of the most favourable interval for labour cost increases. Despite the brighter outlook for the economy, a low increase in labour costs is still considered to have the optimal effect on the hiring plans of firms. Moreover, many firms, particularly in manufacturing, still need to improve their profitability. For this reason, output and employment would benefit from low wage increases relative to the average for the 2000's, in accordance with the assessment in the *Report on Wage Formation 2009*.

With the economic outlook now brighter than in the *Report on Wage Formation 2009*, the risk of deflation has lessened. The inflation forecast has been revised upward for 2010 and 2011, and in July 2010 the Riksbank began raising the policy interest rate (repo rate). Low pay increases and thus low inflation can now help to limit interest rate hikes by the Riksbank in the period ahead and thus to stimulate employment. These developments suggest that the disadvantages of extremely low pay increases or stagnation in earnings are now somewhat less than estimated in last year's report. But the difference is minor in relation to the analysis and conclusions in the *Report on Wage Formation 2009*. An updated model analysis shows that annual increases in labour costs between 0.75 percent and 2.25 percent in the period 2010–2012 would lead to the strongest growth in output and employment. In view of the tentative nature of the analysis, the conclusion in the *Report on Wage Formation 2009* may be considered unchanged.

### LABOUR COSTS TO REMAIN WITHIN THE INTERVAL

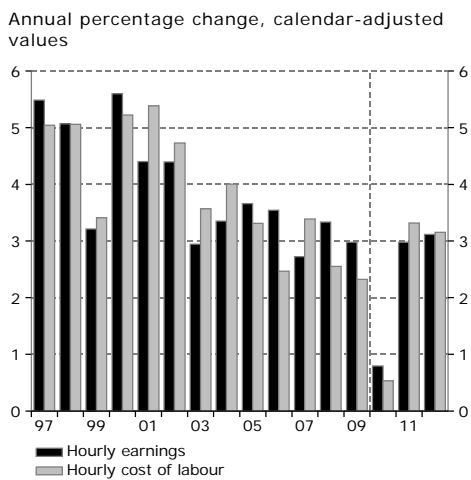
The first central settlements reached in the 2010 negotiations provided for pay increases of about 1.7 percent per year. The centrally negotiated increases in the economy as a whole are forecast to be 1.8 percent for 2010 and 1.6 percent for 2011. This outcome represents a slowdown in the average centrally negotiated rate of pay increases, which in 2007–2009 was 3.0 percent in the business sector and 2.9 percent in the economy as a whole.

Based on the central pay settlements and an estimate of the local pay increases in addition to them, hourly earnings in the

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<sup>1</sup> After publication of the *Report on Wage Formation 2009*, Statistics Sweden has revised the outcome data in the National Accounts up to 2009. This update also affects the analysis of labour costs and the macro economy.

**Diagram 3 Hourly Earnings and Cost of Labour, Business Sector, According to National Accounts**



Sources: Statistics Sweden and NIER.

business sector are expected to increase by an average of 2.3 percent per year in 2010–2012 (see Diagram 3). The annual rate of increase in labour costs in 2010–2012 is forecast to be 2.3 percent as well. The increase in labour costs will then end up within the interval of 1 to 2.5 percent, which is most favourable for output and employment.

To sum up, the 2010 bargaining round led to a lower level of centrally negotiated pay increases. The resulting slowdown in the rate of increase in labour costs helps to alleviate the negative effects of the recession on output and employment.

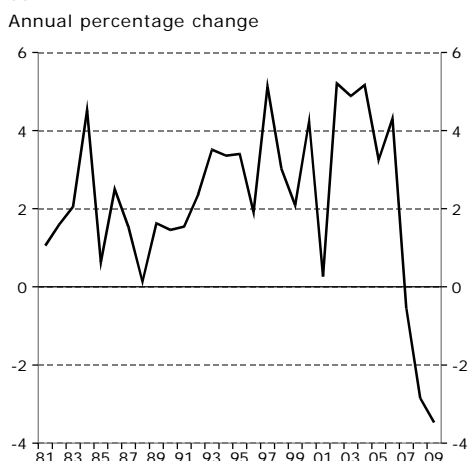
The forecast for labour costs is unusually tentative, as the recent settlements cover only a very small part of the year 2012. In the 2010 round of bargaining, the resulting contract period for the central agreements was shorter than in previous negotiations. Most of the new contracts cover about 24 months, and the first benchmark contracts reached in the spring of 2010 will expire in early autumn 2011. The average increase in labour costs in the period 2010–2012 will thus be affected by the next round of bargaining<sup>2</sup> as well. A further element of uncertainty in the next round of negotiations is that the Engineering Industries (Teknikföretagen) have opted out of the Industrial Agreement (Industriavtalet) and that the central settlements expire at different points in time for hourly and salaried employees in manufacturing.

## 1.2 Productivity Growth Hard Hit

With the economic downturn in 2008–2009, there was a dramatic drop in demand, employment and output. This dismal development was preceded and followed by a significant fall-off in productivity growth as well. Productivity in the Swedish economy dropped in all three of the years 2007, 2008 and 2009 (see Diagram 4).

Some of the decrease in productivity is explainable by the loss of demand during the economic downturn. When firms were forced to make rapid cuts in output starting in the final quarter of 2008, it was neither possible nor desirable to reduce the number of employees to the same extent. The sharp drop in demand, in combination with the sluggish pace of adjustment in the labour force, thus explains part of the decrease in productivity, as well as the modest – in relation to the drop in output – increase in unemployment during the economic downturn. It is probable, moreover, that many firms viewed the financial crisis as a temporary external disturbance, entailing no need for permanent reductions in staff.

**Diagram 4 Productivity, Business Sector**



Sources: Statistics Sweden and NIER.

<sup>2</sup> Most central agreements will expire in early 2012. However, the Agreement for Salaried Employees in Manufacturing (Industrins tjänstemannaavtal), which became a benchmark, will expire earlier, in the autumn of 2011. It can thus be assumed that a new round of bargaining will commence some time in 2011.



But the loss of demand and the financial crisis can only explain some of the decline in productivity, which began back in 2007, well before any expectations of an international financial crisis and a contraction in the global economy had arisen. Furthermore, the decrease in productivity is an international phenomenon that has occurred in a number of countries (see Diagram 5). In Denmark, for example, productivity growth was clearly dropping even before the international financial crisis.

According to the NIER's analysis, the appreciable decline in the productivity of the Swedish economy in 2007–2009 is only to a minor degree attributable to changes in the composition of output among different industries in the business sector, or in the composition of the labour force. A small portion of the decrease may also be explainable by changes in the statistical treatment of internal transactions in international firms (so-called merchanting). Nevertheless, it seems probable that a significant share of the productivity loss was due to a negative disturbance to growth or to the level of *total factor productivity*, that is, the level of technical and other know-how that determines how much value added is created by the production factors labour and capital.

With demand surging, productivity is expected to rise rapidly in the next few years since firms will be able to utilize their resources more efficiently. However, the part of the drop in productivity attributable to the weak tendency of total factor productivity will probably not be recovered, at least not fully.

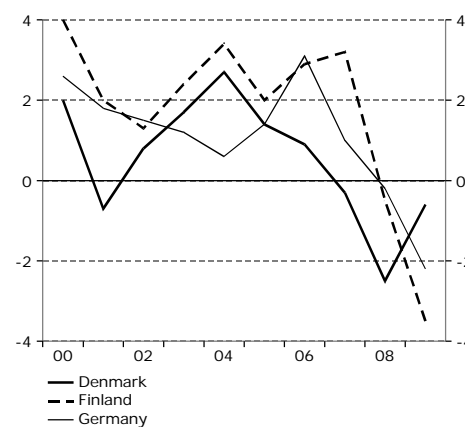
The stock of capital has grown slowly in the wake of the financial crisis – yet another reason for the NIER's assessment that only some of the productivity drop can quickly be offset by higher productivity growth during the recovery of the economy. The *Report on Wage Formation 2011* will return to the productivity forecast and its implications for the increase in labour costs in the period ahead.

### 1.3 High Minimum Wages May Be an Obstacle to Higher Employment

The Nordic countries have combined internationally small differences in earnings and incomes with high employment rates. In Sweden the employment rate varies between 85 and 90 percent for individuals in age group 30-54 with at least an upper secondary education. For the population in age group 30-54 with less than an upper secondary education, the employment rate is considerably lower, just over 75 percent for men and barely 65 percent for women. At the same time, the median level of earnings in this group of the least educated is only marginally lower than for persons with an upper secondary education (see Diagram 6 and Diagram 7). That finding signals a possible problem with the capacity of the Swedish labour market to generate jobs

**Diagram 5 Productivity in Denmark, Finland and Germany**

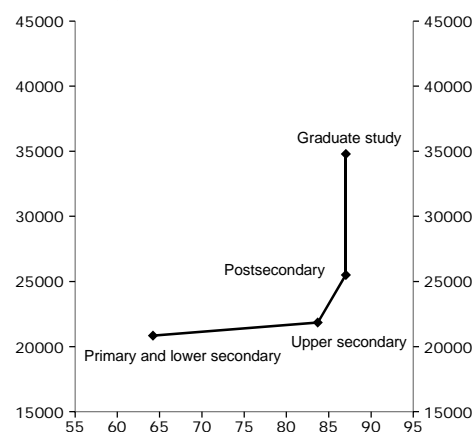
GDP at market prices per hour worked, annual percentage change



Sources: Eurostat and NIER.

**Diagram 6 Employment Rate and Level of Earnings for Women with Different Levels of Education, 2008**

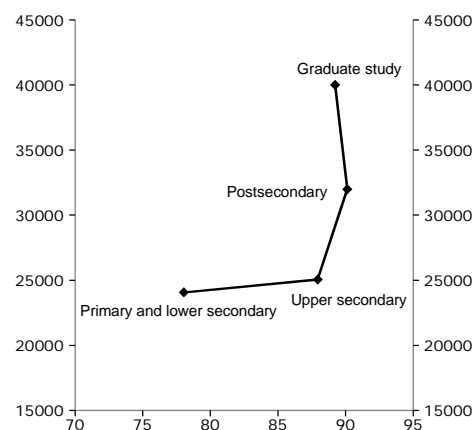
SEK and percent of population aged 30–54, respectively



Source: Statistics Sweden, Register-Based Labour Market Statistics (RAMS).

**Diagram 7 Employment Rate and Level of Earnings for Men with Different Levels of Education, 2008**

SEK and percent of population aged 30–54, respectively



Source: Statistics Sweden, Register-Based Labour Market Statistics (RAMS).

for groups with a low level of education or with low productivity for other reasons.

There may be several reasons for this. One would be that incentives to work are not strong enough. Another would be that minimum wages, which are high in Sweden by international standards, may adversely affect the chances of certain individuals to find work. The report presents a tentative analysis to determine how many of those who are officially unemployed or otherwise lack employment may potentially be affected by minimum wages. By calculating a hypothetical pay level for different individuals and comparing it with the current minimum wage, it is possible to estimate how large a proportion of these people may be affected by a minimum wage. For example, the results show that for some 15 percent of the unemployed, the estimated hypothetical pay level is below or roughly equal to the minimum wage. This suggests that it might be relatively difficult for these individuals to obtain new jobs, as the minimum wage is high in relation to what potential employers are willing to pay.

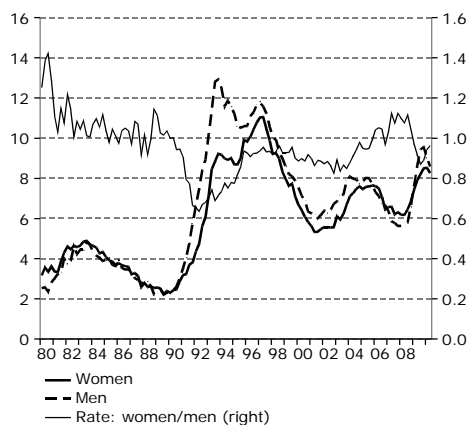
The calculation is of course tentative and the results only indicative, for the hypothetical pay of individuals cannot be measured directly and has therefore been estimated by indirect methods. Moreover, it is sometimes possible to create jobs that pay less than the prevailing minimum wage. Still, the calculation suggests that the minimum wage may make it harder to get a job for a substantial share of those without employment. If the object is to promote employment, this finding gives reason for caution in raising the minimum wage. But the results also show how important it is for labour market policy and the educational system to help improve the skills and work capacity of those who are outside the labour market and who lack employment.

## 1.4 Labour Market for Women and Men Affected Differently by the Crisis – but Only Minor Changes in the Pay Gap

The recession of in 2008–2010 has affected the labour market position of men and women differently. The drop in employment has been greater for men than for women, primarily because manufacturing, which is male-dominated, has been hit harder by the worldwide economic downturn. However, the sensitivity of labour force participation to economic cycles is greater for women than for men; thus, there was a larger decrease in women's labour force participation despite the more limited drop in their employment. Consequently, unemployment increased more for men than for women (see Diagram 8). The crisis of the 1990's showed a similar pattern, with unemployment rising more for men in the initial years of the crisis. Employment for women, however, continued to increase after 1995 in the aftermath of the budgetary reforms undertaken at that

**Diagram 8 Unemployment for Women and Men, and Rates, respectively**

Percent of labour force aged 16–64, seasonally adjusted quarterly values



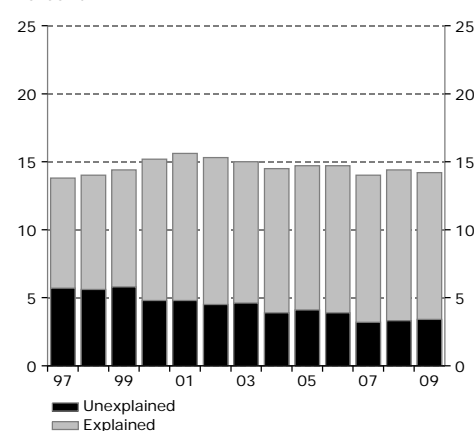
Sources: Statistics Sweden and NIER.

time. Since Sweden's central government finances are now robust and no sweeping budgetary reforms are needed, no similar late increase in women's unemployment is currently expected.

Differences in pay between women and men have changed little in recent years (see Diagram 9 and Diagram 10). The pay gap between women and men – that is, the difference in average pay per unit of time for men and women – has diminished slightly since 2001 for both hourly and salaried employees in the business sector. But the year-to-year changes in the pay gap are quite small. According to an analysis presented in the *Report on Wage Formation 2009*, the gap between the pay of men and women is linked statistically to a segregated labour market, where men predominate in some occupational groups and women in others.

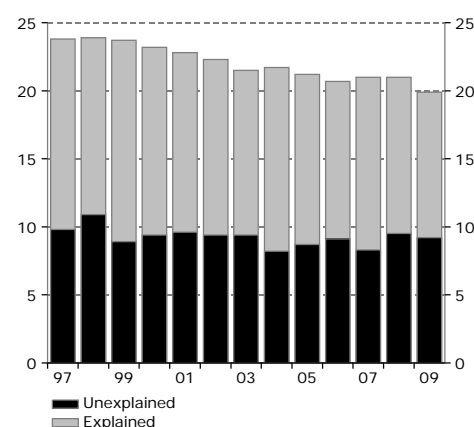
In the 2007 round of pay bargaining, LO was successful in pushing through a special equal-pay increment, in order to raise earnings for low-paid women in occupations where women predominate. According to the agreement, a special pay adjustment would apply in contract areas where the proportion of low-paid women is high, and the size of the adjustment would be proportionate to the share of women within the contract sector with earnings under SEK 20 000. An analysis of how the pay gap between women and men has evolved after 2007 suggests that the special adjustment in favour of employees with low pay may initially have had the desired effect on the pay gap. After 2008, the trend has been reversed in many sectors, however. In addition even, an econometric analysis of the effect of the special adjustment indicates that the impact of the adjustment has been short-lived. According to estimates, the special increment had the initial effect of reducing the pay gap between women and men in 2007 and 2008. The effect seems to have vanished by 2009<sup>3</sup>, however. One possible conclusion is that it was offset by other mechanisms in wage formation. The results of the economic analysis, though tentative, nevertheless suggest that it may be difficult to affect pay differences between men and women through central pay negotiations alone.

**Diagram 9 Develop of Wage Gap, Hourly Employees, Private Sector**  
Percent



Sources: Statistics Sweden and NIER.

**Diagram 10 Develop of Wage Gap, Salaried Employees, Private Sector**  
Percent



Sources: Statistics Sweden and NIER.

<sup>3</sup> The econometric method is described in greater detail in the *Report on Wage Formation 2009*, and the data covered the period from 2006 through 2007 and 2008, which had already been affected by the 2007 round of pay bargaining. Now that the pay data for 2009 is also available, this analysis can be updated to 2009.

## Contacts

The summary of this report is translated into English. If you want further information please contact us.

The preparation of this year's report was led by Juhana Vartiainen, Head of Division.

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