Wage Formation in Sweden
Summary 2012

1 Summary

A major round of labour negotiations is about to begin, and some 2.5 million employees will have their collective agreements re-negotiated during the first half of 2013. The next few years will be characterized by high unemployment and relatively lacklustre growth in productivity. The euro crisis is accelerating the process of structural change, putting pressure on profits and market shares in the exporting industries. The euro crisis also illustrates that the so-called European norm is not applicable as a basis for analyzing wage formation in Sweden. The labour market parties can speed up the adjustment to lower unemployment, but will need support from monetary policy. The decrease in unemployment will be limited, however, by less efficient matching on the labour market; this factor is one that can be influenced primarily by political decisions. "Glass-ceiling effects" – where there is a larger pay gap between women and men in the highest income brackets – are still present in both the business and public sectors, though to a diminishing degree in the past decade.

The report Wage Formation in Sweden outlines the general economic conditions for wage formation and the coming round of labour negotiations. The report is intended to aid the labour market parties and the National Mediation Office by providing supporting documentation of high quality. The NIER expresses no opinion on how wages and salaries should develop.[1]

1.1 Initial Situation in 2012

The initial state of the economy is one of the principal conditions for labour negotiations. Firms presently consider demand to be weaker than normal, an opinion consistent with the NIER's assessment that the Swedish economy is in a cyclical downturn. The National Accounts for the second quarter of 2012 show that the growth of the Swedish economy is slowing. Indicators and new statistics point to a continued slowdown in the third quarter, but growth is expected to increase somewhat in the fourth quarter (see Diagrams 1 and 2). One important explanation for the deterioration of Sweden's economy is the international economy, where indicators suggest a weakening tendency (see Diagram 3). All factors considered, this means that the business cycle will weaken further in the near future.

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[1] As noted in previous reports, the central factor for wage formation is the cost of labour, not earnings (see, for example, the special analysis "From Pay Negotiations to Cost of Labour", *Wage Formation in Sweden 2010*). In addition to hourly earnings, the cost of labour takes other costs to the employer, particularly payroll taxes, into account. As is shown in Chapter 2, the percentage development is similar over the years for labour costs and earnings. For the sake of simplification, the term "earnings" is used throughout this report, even when the the cost of labour is meant.

**Diagram 1 Economic Tendency Indicator and GDP**

Index mean=100, monthly values and annual percentage change, calendar-adjusted quarterly values, respectively

— Economic Tendency Indicator
▨ GDP (right)
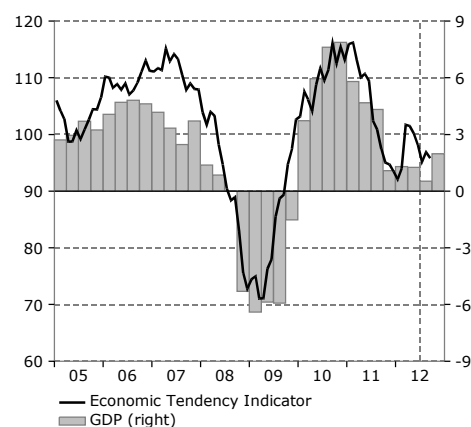
Sources: Statistics Sweden and NIER.

Diagram 2 Industrial Production Index and Service Production Index excl. Real Estate Activities

Index 2005=100, seasonally adjusted monthly values

— Industrial production index
- - Service production index
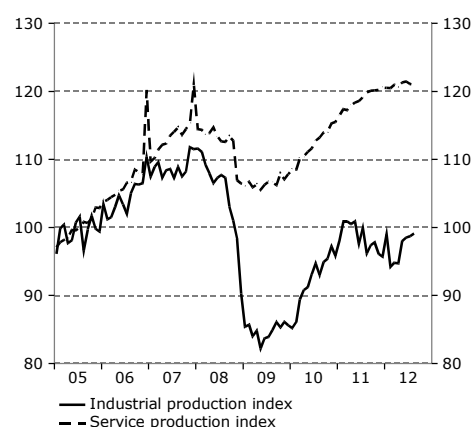
Sources: Statistics Sweden and NIER.

Diagram 3 International Economic Indicators

Standardized deviation from mean, monthly values

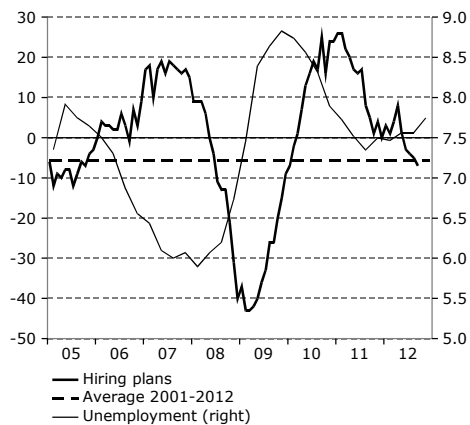— UK (ESI)
- - Euro area (ESI)
— US (PMI in manufacturing)
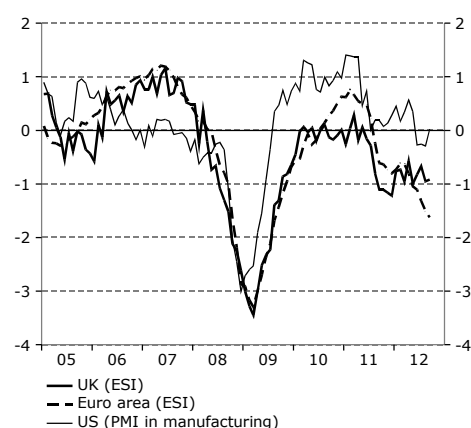
Note. ESI is the Economic Sentiment Indicator and PMI is the Purchasing Managers' Index.

Sources: European Commission, Institute for Supply Management and NIER.

Diagram 4 Hiring Plans in the Business Sector and Unemployment

Balances and percent of labour force, seasonally adjusted monthly and quarterly values, respectively

— Hiring plans
-- Average 2001-2012
— Unemployment (right)

Sources: Statistics Sweden and NIER.

Diagram 5 Layoff Notices

Thousands

— Layoff notices
-- Average 1992-2012

Sources: Swedish Public Employment Service and NIER.

Diagram 6 Resource Utilisation within Firms

Share of sites with close to full work force utilisation, percent

— Can increase output up to 5% w/o recruiting
-- Average 2004-2012
— Can increase output up to 10% w/o recruiting
-- Average 2004-2012

Source: Swedish Public Employment Service.

UNEMPLOYMENT TO INCREASE TOWARDS 8 PROCENT

After the outbreak of the financial crisis at the end of 2008, unemployment rose to nearly 9 percent (see Diagram 4). It subsequently fell back to just below 7.5 percent at the end of 2011, but since then it has begun to rise again, though at a slower pace. The increase will continue for the rest of 2012, and unemployment will reach about 8 percent in 2013. The weaker tendency for the near future is corroborated by further cutbacks in the hiring plans of firms and by a higher than normal number of layoff notices in September (see Diagrams 4 and 5).

**SPARE RESOURCES AT FIRMS WILL BOOST PRODUCTIVITY GROWTH IN THE PERIOD AHEAD**

The development of productivity in the next few years will depend partly on the introduction of new technology and partly on the degree to which there are spare human resources within firms in the near future (so-called labour hoarding). Since dismissing and employing staff entails costs, firms tend to retain their personnel at times of temporarily low demand. This means that productivity normally shows a weak tendency in an economic downturn. When the economy then picks up, output can be increased by making full use of the existing work force, which means higher growth in productivity.

Since there is no direct measure of the degree of labour hoarding, various indicators must be analyzed for this purpose. One important indicator is the proportion of firms that can increase output by up to 10 percent or 5 percent, respectively, without employing more personnel (see Diagram 6), i.e., the proportion of firms operating near full work force utilisation. If the proportion of firms close to full utilisation is low, that will indicate more labour hoarding than normal – many firms can increase output without having to employ more staff. The latest measurement, which was taken during the spring of 2012, indicates that the degree of labour hoarding is neither greater nor less than normal. The NIER's assessment is that to some degree firms will regard the weaker development of demand during the second half of 2012 as temporary and will therefore hold on to their human resources to a greater degree than required by the level of output in the immediate future. According to the indicator in Diagram 6, this means that resource utilization at firms will probably drop below its average at the next measurement, indicating greater labour hoarding.

All factors considered, labour hoarding will reduce the level of business sector productivity by about 0.5 percent by the end of 2012. This imbalance will be normalized during 2013, which means that productivity growth during 2013 will be correspondingly higher than the trend rate of growth.
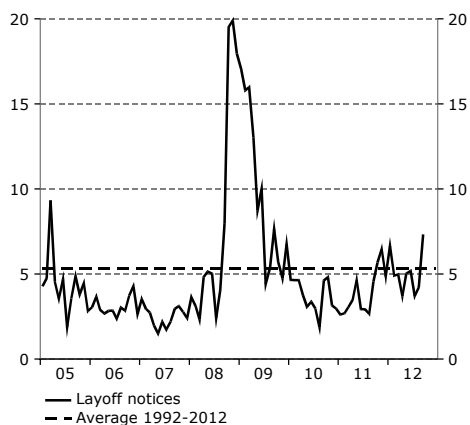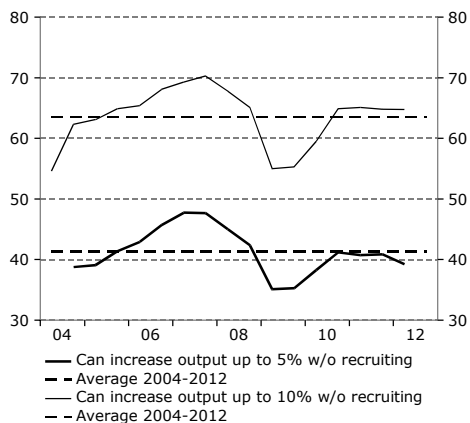
PROFITABILITY CLOSE TO NORMAL IN RELATION TO THE STATE OF THE ECONOMY AND TO HISTORICAL AVERAGES

Initially high profitability means a higher rate of growth in earnings, to judge by historical patterns (see Chapter 4). Profitability varies over the economic cycle, one factor being the degree of labour hoarding. A basis for estimating whether profitability is normal or not relative to the state of the economy is the firms' own assessments of profitability and demand levels. These measures indicate that profitability is currently consistent with the historical pattern in relation to the estimated demand situation (see Diagram 7).

Two ways of estimating whether profitability is normal compared to the level where the the economy is in cyclical balance are to calculate the historical averages for the profit share and for the return on capital, according to the National Accounts. The return on capital is slightly higher than the historical average, whereas the profit share is slightly lower (see Diagram 8).[2]

The NIER's overall assessment is that profitability can be considered normal relative to the demand situation in the economy, but somewhat lower than the historical average. One reason for the latter is that there will be spare resources (labour hoarding) in firms at the end of 2012. When these resources have been put to use during the economic upturn in 2013, both the return on capital and the profit share will increase somewhat. This means that the sum of productivity and the rate of increase in the prices charged by firms will temporarily exceed the rate of increase in earnings.

1.2 Macroeconomic Conditions 2013–2016

The labour market parties, together with the Riksbank, can affect the rate of economic recovery to some degree. However, the tendency in the next few years is governed principally by factors which the labour market parties cannot affect but are of importance for the analysis of earnings, profits and employment. This statement applies to such factors as the development of the international economy, the structural development of productivity and the nature of structural change.

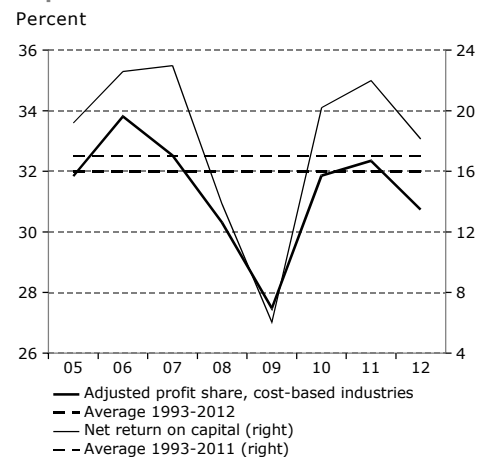**SLOW RECOVERY IN THE EURO AREA AND THE US**

The NIER's forecast is based on the assumption that the uncertainty about the euro crisis will gradually decrease and that

Diagram 7 Profitability Assessment and Demand Situation in the Business Sector
Balances, seasonally adjusted quarterly values

— Profitability assessment
-- Demand situation
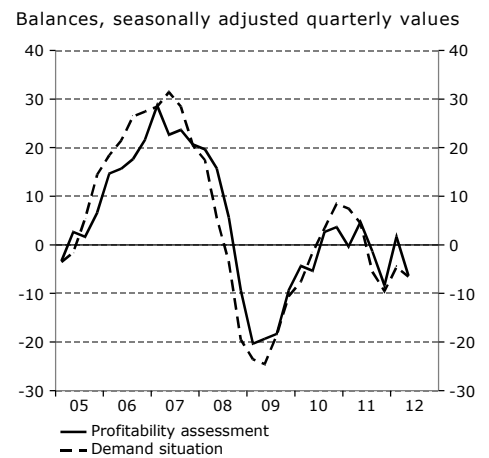
Source: NIER.

Diagram 8 Profit Share and Return on Capital in the Business Sector
Percent

— Adjusted profit share, cost-based industries
-- Average 1993-2012
— Net return on capital (right)
-- Average 1993-2011 (right)

Note. See footnote 2.
Sources: Statistics Sweden and NIER.

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[2] As is analyzed in Chapter 3, there are reasons to give special consideration to the profit share in industries where pricing in the long run is determined only by the variable costs of production. The industries considered not to have fully cost-determined product prices are: agriculture and fishing; electricity, gas, heat and water supply; single- and two-family homes and leisure-time homes.
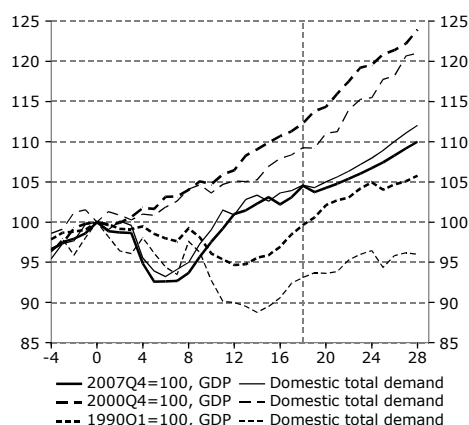
Diagram 9 Output Gap
Percent of potential GDP

— US
- - Euro area
— Sweden
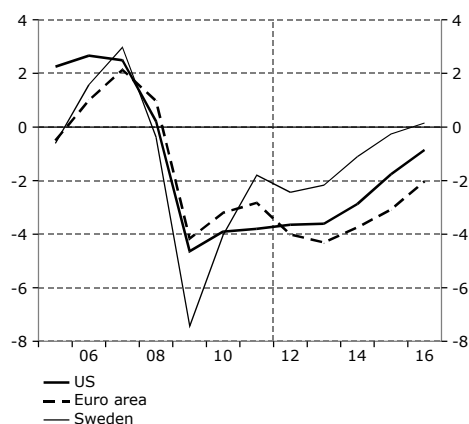
Sources: IMF, OECD and NIER.

Diagram 10 GDP and Domestic Total Demand
Index = 100 quarter 0, see below

—— 2007Q4=100, GDP —— Domestic total demand
- - 2000Q4=100, GDP - - Domestic total demand
- - - 1990Q1=100, GDP - - - Domestic total demand

Note. The X axis refers to quarters. The date 0 is the last quarter before GDP started to fall. The forecast line applies to the current recovery.
Sources: Statistics Sweden and NIER.

households and firms will begin to regain confidence at the outset of 2013. This assumption is of course highly uncertain and is based, among other things, on the assumptions that both euro-area political leaders and the European Central Bank will continue to implement decisions that will contribute to sustainable public finances, and that banks can avoid collapse.

There is a great need for saving by households as well as the general government sector, both in the euro area and in the US. This means that even if confidence returns, recovery will be slow in both the euro area and the US (see Diagram 9). The improvement in the current account, which was noticeable in countries like Spain and the US after the financial crisis, is due primarily to low domestic demand and thus a weak tendency in imports. This improvement in the so-called external balance has thus been accompanied by deterioration in the internal balance in the form of rising unemployment.

Sweden's economy will thus receive considerably less help from other countries compared to previous economic upturns, in which GDP was growing faster than domestic demand (see Diagram 10). Growth in exports will average about 5 percent per year in 2013–2015, a lower rate than in the economic upturns of both the 1990's and the 2000's. The updated forecast of the NIER for 2012–2016 is summarized in Table 1.

Table 1 Selected Indicators for the Swedish Economy
Percentage change unless otherwise indicated

	2011	2012	2013	2014	2015	2016
GDP, United States	1.8	2.2	2.1	2.9	3.3	3.1
GDP, euro area	1.5	−0.5	0.5	1.8	2.1	2.5
GDP, calendar-adjusted	3.9	1.3	2.0	2.8	2.7	2.5
Hours worked[1]	2.3	0.4	0.2	1.1	1.3	0.9
Unemployment[2]	7.5	7.6	7.9	7.6	7.0	6.6
Productivity, business sector[1]	2.6	1.4	2.1	2.0	1.7	2.0
Hourly earnings, business sector[3]	2.7	3.3	2.8	2.8	2.9	3.1
Cost of labour, business sector[1]	2.8	3.9	2.9	2.9	3.0	3.2
Labour cost share	58.9	60.3	60.2	59.9	59.9	59.8
CPIF	1.4	1.1	1.3	1.1	1.5	1.9
Value-added prices	1.0	0.7	1.5	1.1	1.5	1.6
Repo rate[4,5]	1.75	1.00	1.00	1.50	2.00	2.75

[1] Calendar-adjusted. [2] In percent of labour force. [3] According to Short-Term Earnings Statistics. [4] Percent. [5] At year-end.

Note: The forecast in this report is an update of certain portions of the NIER's latest complete forecast (see *The Swedish Economy*, August 2012). The update was made after the revision of the National Accounts subsequent to the publication of the August forecast. At the NIER's website, www.konj.se, there are key numbers from the update and complete data from the August forecast.

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

PRODUCTIVITY GROWTH SLOWER THAN NORMAL

The development of real earnings follows that of productivity in the longer term. Such has also been the case over the past 15

years, when the Industrial Cooperation and Negotiation Agreement has been in effect on the Swedish labour market (see Diagram 11).

As noted above, productivity growth varies with demand over an economic cycle, one reason being labour hoarding. But productivity growth can also differ because of variations in the composition of the labour force and of output, capital deepening and the rate at which new technology and new work methods are applied. It is considered that both the actual and the trend-rate, or potential, development of business sector productivity will have varied rather considerably over the period 2005–2016 (see Diagram 12). Average potential productivity growth is forecast to be 1.7 percent per year in 2013–2015, which can be compared with the assessment of 2.3 percent per year in the long run. One reason for the difference is the negative – from the standpoint of the productivity trend – development of the composition of the labour force and of output. Moreover, the financial crisis and the subsequent recession are expected to mean that the introduction and application of new technology and new work methods will take place more slowly. Actual productivity growth will be about 2 percent per year 2013–2015 and will thus exceed the potential growth rate. The reason is that there will be a certain degree of labour hoarding at the end of 2012.

STRUCTURAL CHANGE PUTTING DOWNWARD PRESSURE ON PROFITS AND MARKET SHARE IN EXPORTING INDUSTRIES

The financial crisis is speeding up the structural change faced by much of the world, where countries with substantial current-account deficits must increase their net exports while the opposite applies to countries with sizable surpluses. This process has already begun, and the deficits in some countries, including Spain and the US, have decreased since 2007, whereas the surpluses have decreased in China and to a lesser extent in Germany. In Sweden the current account in relation to GDP was highest in 2008.

The driving force behind continued shifts in the current account throughout the world is the change of behaviour in regard to saving. In countries with surpluses like Sweden, China and Germany, saving is initially high, providing a margin for stronger growth in consumption, whereas the opposite applies, for example, to many southern European countries and to the United States. Consequently, Sweden's current account is expected to continue decreasing, coinciding with appreciation of the Swedish krona (see Diagram 13 and Chapter 5).

This structural change means that exporting industries in Sweden are facing increasingly stiff competition. The stronger exchange rate will have a negative impact on output, profitability and employment. Profitability and employment in domestically oriented sectors, on the other hand, will probably rise thanks to
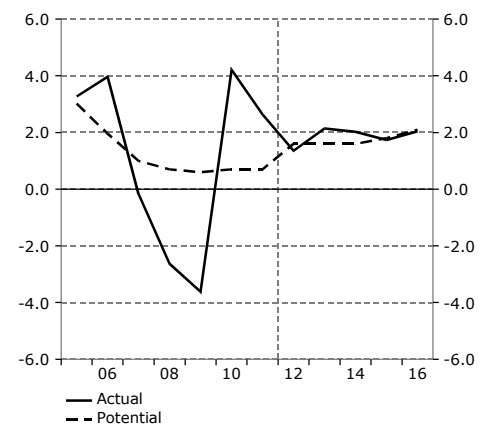
Diagram 11 Real Labour Cost and Productivity
Index 1997=100

— Real labour cost per hour
-- Productivity
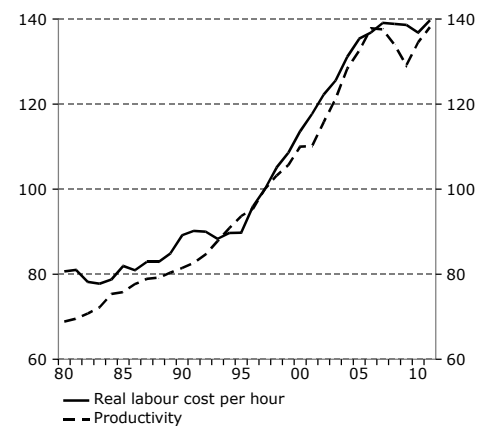
Sources: Statistics Sweden and NIER.

Diagram 12 Actual and Potential Productivity in the Business Sector
Percentage change

— Actual
-- Potential
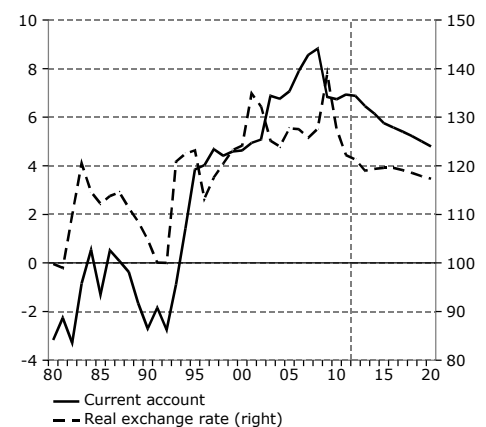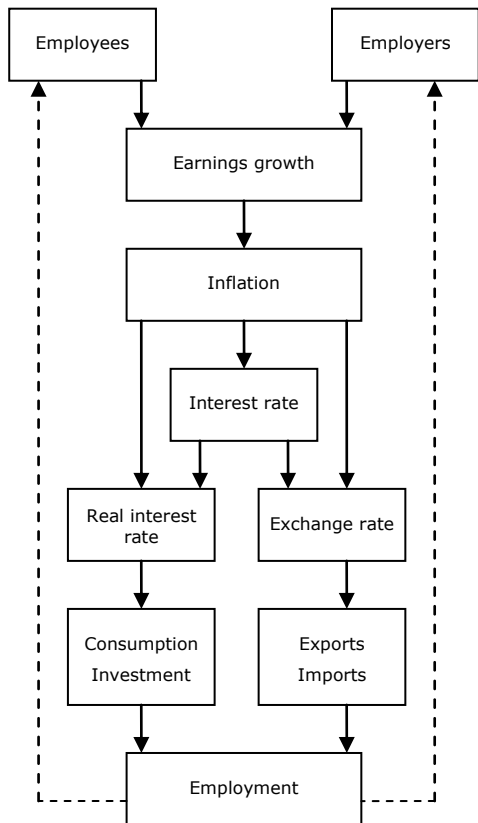
Sources: Statistics Sweden and NIER.

Diagram 13 Current Account and Real Exchange Rate
Percent of GDP and index (1992=100), respectively

— Current account
-- Real exchange rate (right)

Note. Real exchange rate is based on KIX 16.
Sources: Statistics Sweden and NIER.

Source: Gottfries, N., *Fungerar den svenska lönebildningen?, bilaga 5 till Långtidsutredningen 2011*, SOU 2011:11.

Diagram 14 Hourly Earnings in the Business Sector
Percentage change

— Forecast
- - - 1 p.p. lower + forecast repo rate
—— 1 p.p. lower wage increase

Source: NIER.

relatively strong growth in domestic demand. This is becoming a driving force for structural change in Sweden.

1.3 Relationship between Wage Formation, Stabilization Policy and Cyclical Recovery

The NIER's forecast is based on the assumption that house-holds, firms, the labour market parties, Parliament and the Riksbank will act according to historical patterns. Developments in coming years may be different if one or more central figures in the economy act in some other way than is anticipated in the forecast.

IMPORTANCE OF TRANSPARENCY AND MUTUAL CONFIDENCE BETWEEN THE PARTIES AND THE RIKSBANK
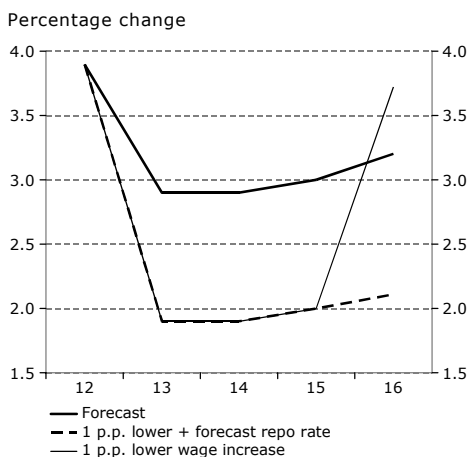
Both wage formation and monetary policy affect the speed of economic recovery, as is illustrated in Figure 1 (see Chapter 5). A lower rate of increase in earnings will normally result in a fast-er recovery. For this to happen, however, the Riksbank must follow a more expansionary monetary policy so that the real rate of interest falls, thus stimulating consumption, investment and exports. If the labour market parties have confidence in the Riksbank and can anticipate its actions, there is a higher proba-bility that they can reach lower centrally negotiated pay agree-ments. In addition, the parties need to send a credible signal that pay increases will be lower in the next few years in order for the Riksbank, which is forward-looking, to lower its policy interest rate.

SMALLER INCREASES IN EARNINGS REQUIRE A LOWER POLICY INTEREST RATE IF ECONOMIC RECOVERY IS TO PROCEED FASTER

Chapter 3 analyzes how the development of the economy is affected when two of its central figures – the labour market parties and the Riksbank – act differently than was assumed in the forecast. In two scenarios, the growth in hourly earnings is 1 percentage point lower per year in 2013–2015 compared with the NIER's forecast (see Diagram 14). In one of the scenarios, it is assumed that the Riksbank acts on the basis of its historical pattern as calculated in KIMOD, the NIER's macroeconomic model. In the other scenario it is assumed that the path of the repo rate develops as in the NIER's baseline forecast two years ahead. Thus, in this stylized example the Riksbank does not react to the lower rate of increase in earnings (see Diagram 15).

Since firms face a lower rate of wage increases and expect the Riksbank to act, they will raise their prices more slowly. If the Riksbank does not lower its policy interest rate, the real rate of interest will rise, and recovery will proceed more slowly. Unem-

ployment will then be even higher than in the NIER's forecast, in which the rate of increase in earnings is higher (see Diagram 16). This underscores the importance of transparency and credibility in the actions of both the labour market parties and the Riksbank.

1.4 Wage Formation with a Flexible Exchange Rate

In public debate it is often emphasized that the development of earnings in Sweden should follow that of Europe or portions thereof. Chapter 5 discusses several structural and cyclical reasons why the so-called European norm is not a reasonable starting point for an analysis of conditions for earnings, profits and employment in Sweden.
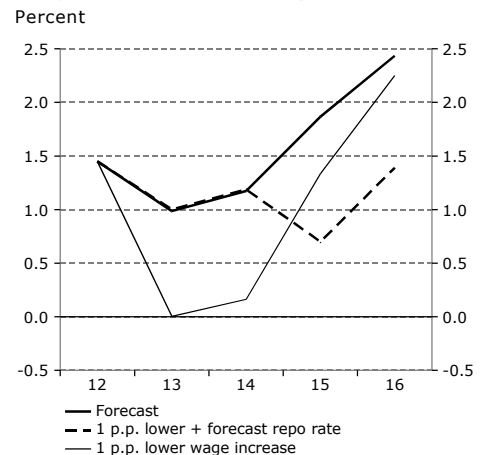
EUROPEAN NORM NOT A REASONABLE BASIS FOR ECONOMIC ANALYSIS OF THE DEVELOPMENT OF EARNINGS

Looking back over the past decade, the same development of earnings throughout the euro area would have been preferable to faster growth in earnings in several southern European countries than in Germany, for example. The situation that has arisen in the euro area shows, however, that common development of earnings is often inappropriate even in countries with a fixed nominal exchange rate. The reason is that structural changes in the current accounts of countries require changes in the real rate of exchange. This is accomplished through increases in earnings and prices being higher in countries with current-account surpluses than in those with deficits. The level of profitability and employment may differ from one country to another, a situation that also calls for differences in the growth rate of earnings and prices. Moreover, different growth rates in productivity may require different rates of growth in earnings. The development of productivity in the euro area has varied considerably among different countries over the past decade (see Diagram 17). The difference, however, has not been reflected in the relative development of earnings; this situation is one of the main causes of the problems currently facing the euro zone.

   The conclusion is that even with a fixed exchange rate, there is a risk that a European norm would represent an oversimplification in the normal case. A much more thorough analysis is required to determine the development of earnings compatible with a sustainable current account and desirable levels of profitability and employment.
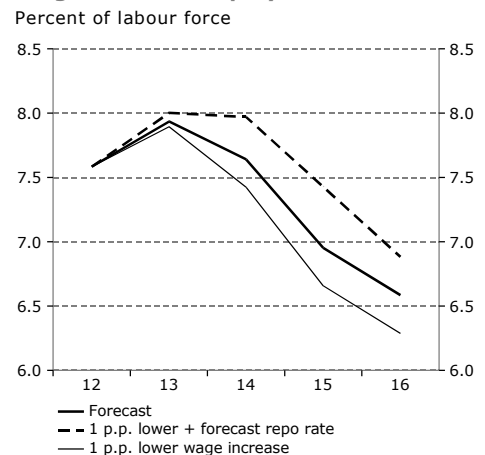
   With a flexible exchange rate there are several additional factors that render a European norm even less appropriate. In Sweden the NIER estimates that in the long term the prices charged by firms, which provide the basis for their payroll capacity, will increase by 1.3 percent per year when inflation ac-
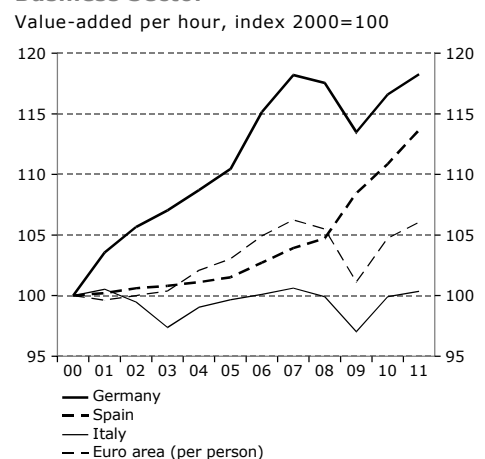
Diagram 15 Nominal Repo Rate
Percent

— Forecast
-- 1 p.p. lower + forecast repo rate
— 1 p.p. lower wage increase

Source: NIER.

Diagram 16 Unemployment
Percent of labour force

— Forecast
-- 1 p.p. lower + forecast repo rate
— 1 p.p. lower wage increase

Source: NIER.

Diagram 17 Productivity in the Business Sector
Value-added per hour, index 2000=100

— Germany
-- Spain
— Italy
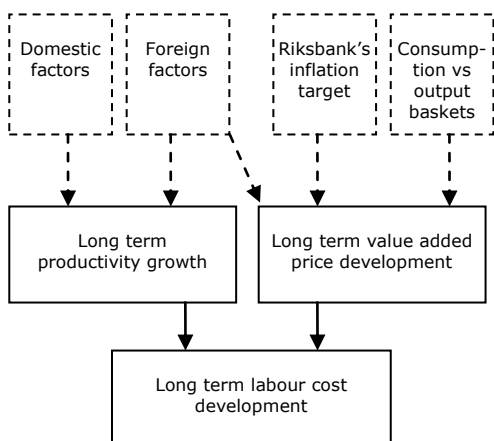-- Euro area (per person)

Source: Eurostat.

5LBR108 Diagram 18 Unemployment
Change in percentage points since 2007
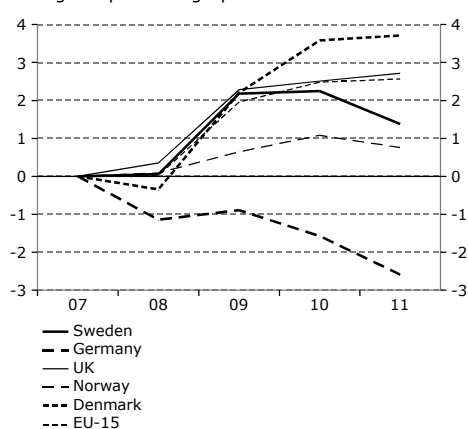
Sources: OECD and NIER.

Figure 2 Determinants of Long-Term Labour Cost Growth

cording to the CPI is 2 percent. This is due to differences in the development of prices for the goods and services purchased by households and those produced by firms.[3] Therefore, even when comparable countries have similar inflation targets, the development of earnings and prices may differ in the long run as well if there are differences in industry structure and productivity growth.

In addition to these structural factors, there are presently substantial cyclical factors which make a European norm unsuitable as a point of departure for analysis of earnings, profits and employment. In the short run, the development of earnings has been largely determined by the development of unemployment and profitability (see Chapter 4). The current financial crisis and the ensuing recession affect the development of the economy in different ways in different countries. For example, unemployment has risen sharply in Denmark and the United Kingdom, whereas it has fallen in Germany (see Diagram 18). At the same time, the profit share has dropped sharply in some countries, but not in others. All factors considered, the cyclical development of earnings and profits in Europe will probably vary from country to country in the years to come.

WAGE FORMATION IN SWEDEN AFFECTED IN SEVERAL WAYS BY DEVELOPMENTS ELSEWHERE

There are several channels through which wage formation in Sweden is affected by what happens elsewhere. In the long run, the development of labour costs is determined by the sum of productivity growth and the rate of increase in the value-added prices of the business sector (see Figure 2).[4] Several international factors affect this process in the long run. A more rapid trend of technological development in other countries will probably spread to Sweden, thus increasing the scope available for higher earnings there. A trend increase in the international development of oil prices, on the other hand, will reduce the margin for higher earnings, given that the inflation target of 2 percent is to be met. As touched on above, structural changes in saving in other countries will negatively affect profitability and employment in the exporting industries, whereas the opposite applies in sectors oriented toward the domestic market.

In the short run, the development of earnings in Sweden is explainable largely by expected inflation, unemployment, profitability, and the trend rate of productivity growth (see Chapter 4). Therefore, the development of demand in other countries will affect the development of earnings in Sweden in the short run,

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[3] The differences in the development of prices are due primarily to differences among industries in the development of productivity.

[4] Differences in hourly earnings and labour costs consist primarily of collective contributions. The cost of labour is what affects the profitability of firms and is thus the central variable. As shown in Chapter 2, the growth in hourly earnings and labour costs over time is, on average, in principle the same.

primarily through its effect on the short-run development of unemployment and profitability.

15 YEARS WITH THE INDUSTRIAL COOPERATION AND NEGOTIATION AGREEMENT – INCREASES IN REAL EARNINGS AND LITTLE CHANGE IN RELATIVE EARNINGS BETWEEN INDUSTRIES

The first Industrial Cooperation and Negotiation Agreement (Industriavtalet) was reached in March 1997, and a renewed agreement was concluded in June 2011. One observation that can be made for the years 1998–2011 is that while the centrally negotiated pay agreements have differed between industries and sectors, pay increases in addition to the central agreements have developed so that the total increase in earnings has basically been the same within the business sector (see Diagram 19).[5]

Another observation for this period is that real earnings on average have kept pace with productivity (see Diagram 11); this is one of the fundamental building blocks of the conceptual framework for wage formation used by both the NIER and the Long Term Planning Commission in 2011. Growth in real earnings has averaged roughly 2 percent per year in 1998–2011 (see Diagram 20).[6] This is about one percentage point per year more than during the period 1981–1997.

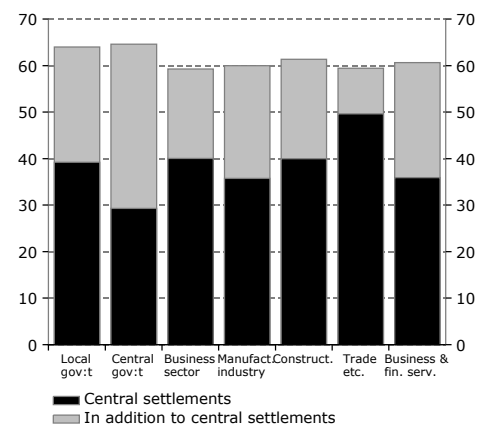## 1.5 Structural Explanations for Unemployment

The development of the economic cycle has a substantial effect on unemployment in the short run. The level of unemployment reached when the economy is in cyclical balance is referred to as structural unemployment. The difference between actual unemployment and structural unemployment shows the degree to which stabilization policy can affect unemployment. An assessment of the level of structural unemployment in the long run is important when considering the need for labour-market policy reforms as well as the development of net lending in the general government sector and the margin for unfunded measures.

DEVELOPMENT OF STRUCTURAL UNEMPLOYMENT DEPENDENT ON MANY FACTORS

The development of structural unemployment depends on how several structural factors evolve over time. The rate of structural
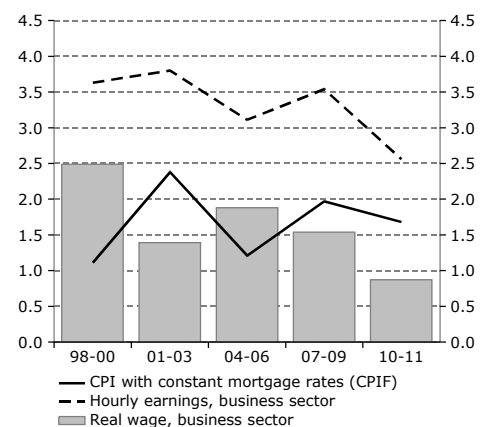
Diagram 19 Total Wage Increase 1998–2011
Percent (since 1997)

Legend:
■ Central settlements
▨ In addition to central settlements

Categories: Local gov't, Central gov't, Business sector, Manufact. industry, Construct., Trade etc., Business & fin. serv.

Sources: National Mediation Office and NIER.

Diagram 20 Inflation, Nominal and Real Wage Development during Contract Periods
Percent per year, average

Legend:
— CPI with constant mortgage rates (CPIF)
--- Hourly earnings, business sector
▨ Real wage, business sector

Categories: 98-00, 01-03, 04-06, 07-09, 10-11

Note. Hourly earnings according to Short-Term Earnings Statistics. Real wage is defined as hourly earnings deflated using CPIF.
Sources: National Mediation Office, Statistics Sweden and NIER.

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[5] The composition of the work force, however, may have developed differently from one industry to another. If for example the composition in an industry has changed, with an increased proportion of less qualified labour receiving a lower average wage, this will tend to reduce the overall rate of increase, and vice versa.

[6] If the nominal development of earnings is deflated by the CPIF, the development of real earnings averages 1.7 percent per year in 1998–2011. If instead the CPI is used for deflation, the annual increase in real earnings is 2.0 percent per year.
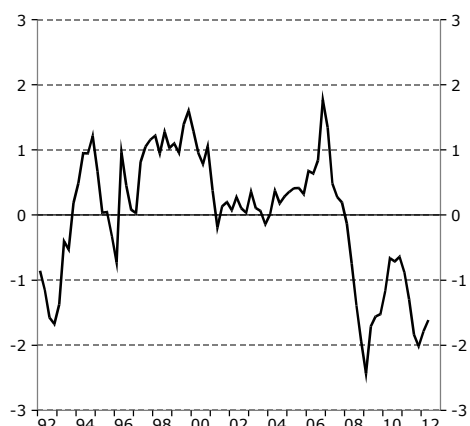
Diagram 21 Unemployment
Percent of labour force

— Unemployment
- - Equilibrium unemployment

Sources: Statistics Sweden and NIER.

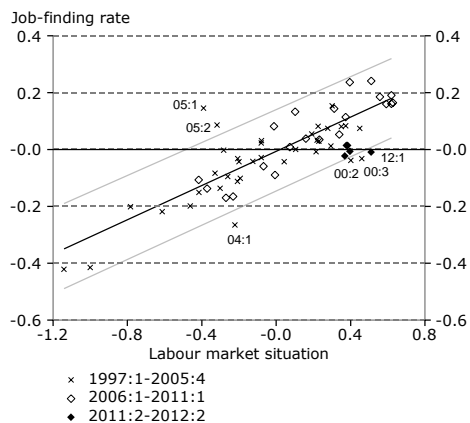**Diagram 22 Matching Efficiency**
Standardized to mean=0 and standard deviation=1 during the period 1992Q1–2012Q2, quarterly data

Source: NIER.

Diagram 23 Job-Finding Rate and Labour Market Situation, 1997–2012
Quarterly data

× 1997:1-2005:4
◇ 2006:1-2011:1
◆ 2011:2-2012:2

Note. The job-finding rate for 1997–2005:2 is linked by NIER. See footnote 7.
Sources: Swedish Public Employment Service, Statistics Sweden and NIER.

change, the efficiency with which job openings can be filled by applicants (so-called matching efficiency), the growth and composition of the labour force, the replacement rate in the event of unemployment and the actions of the parties in pay negotiations – all these factors vary over time and affect the development of structural unemployment (see Chapter 4).

In the NIER's analysis structural unemployment will have averaged just above 6.5 percent during 2005–2015 and will decrease to about 6 percent in 2020 (see Diagram 21). This forecast is based on the following assessments: that matching efficiency will improve, that the growth of the labour force will decrease and that the labour market parties in setting wage levels will consider the sharp increase during recent years in the difference in compensation between working and not working.

DETERIORATED MATCHING EFFICIENCY A THREAT TO LASTING REDUCTION OF UNEMPLOYMENT

How well the job openings at firms fit with the skills of the unemployed is termed the matching efficiency of the labour market. Matching efficiency varies over time and is dependent on such factors as the degree of effort to find jobs, location of the jobs available, the qualifications required and the composition of the labour force in respect to occupation, education and location. In the special analysis "Estimating Matching Efficiency on the Swedish Labour Market," new calculations of matching efficiency show that it has deteriorated appreciably during 2008–2012 (see Diagram 22). The deterioration in matching efficiency by 2011–2012 is also indicated by the fact that the likelihood of finding a job (the job-finding rate) has decreased for a given situation on the labour market (see Diagram 23).[7]

There may be several explanations for the deterioration in matching efficiency over recent years. Although the calculations seek to correct for cyclical variations, it is probable that the matching efficiency measured improves somewhat when the economy recovers. Moreover, there are several possible structural explanations for the deterioration in matching efficiency. The period 2008–2012 coincides with a deep and prolonged economic downturn that has hit hardest in manufacturing. Because of this asymmetry, job openings at firms may not coincide with the qualifications of the unemployed. At the same time, the period 2008–2012 has been characterized by major political reforms that have encouraged increased participation in the labour force. Some of the people who have entered the labour force have probably gone immediately into unemployment and are

[7] The job-finding rate is measured as the proportion of the unemployed whose status changes to employment during a quarter, according to the flow statistics of the Labour Market Survey (AKU). The job-finding rates for the period 1997:1–2005:2 are linked by the NIER. The labour market situation is defined as the ratio between the remaining job openings at the Employment Offices and the number of unemployed according to the Labour Force Surveys. For a more detailed description, see *Svensk finanspolitik (Swedish Fiscal Policy)*, Report of the Fiscal policy council 2011.

having difficulty finding work. Thus, the composition of the unemployed may have changed and negatively affected matching efficiency.

In the NIER's forecast, matching efficiency will improve in the years to come. This assessment is based partly on the fact that matching efficiency, according to several indicators, is weak by historical standards, and partly on the likelihood that political measures will be taken for the purpose of improving matching efficiency if there is no noticeable change in the next few years. This is one reason why structural unemployment is expected to decrease until 2020 (see Diagram 21).

1.6 The Pay Gap between Women and Men

**DIRECT DISCRIMINATION IN WAGES AND SALARIES
EXPLAINS ONLY A MINOR PORTION OF THE PAY GAP**

The pay gap between women and men is due largely to the uneven distribution of women and men over different industries and sectors on the labour market. The distribution of women and men over different occupations is dependent largely on preferences and the chosen field of education. Since these factors change only slowly, one can expect that the pay gap will remain for a considerable time. The size of the pay gap can also be affected by discriminatory structures, of which direct discrimination in earnings is one example.[8] The review conducted under the auspices of the Equality Ombudsman in 2008 indicated that direct discrimination in earnings was a relatively widespread phenomenon among the firms studied, but that relatively few individuals were affected. The review indicates that the importance of direct discrimination in earnings for the size of the pay gap is marginal.

IMPROVED POSITION OF WOMEN ON THE LABOUR MARKET

Since 2000 the total pay gap for hourly employees in the private sector decreased by 1.4 percentage points; in 2011 it was 13.9 percent (see Diagram 24). The corresponding change for salaried employees was a decrease of 3.6 percentage points, for a pay gap of 19.7 percent in 2011 (see Diagram 25).

The change in the pay gap can be divided into two components. The first component of the pay gap is explained by changes between women and men in regard to factors that affect wages and salaries, such as occupation and education; an example would be an increase in the proportion of women with higher education. The other component of the pay gap is explained by how compensation for these factors changes, such as how much more is earned for each additional year of education.
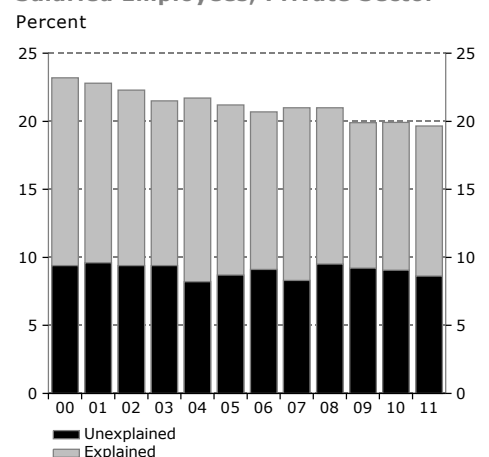
[8] Direct discrimination in earnings is the kind of discrimination regulated by the Discrimination Act (Diskrimineringslagen).

**Diagram 24 Wage Gap Development, Hourly Employees, Private Sector**
Percent

■ Unexplained
▨ Explained
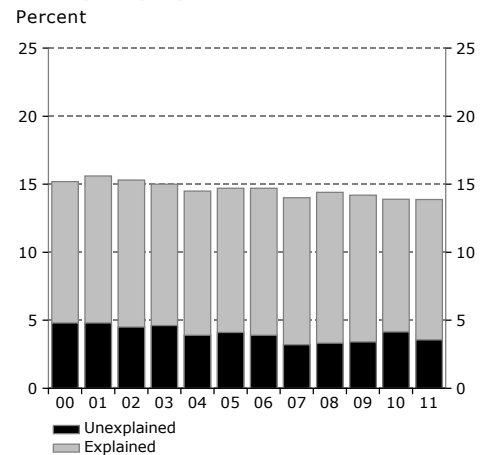
Sources: Statistics Sweden.

Diagram 25 Wage Gap Development, Salaried Employees, Private Sector
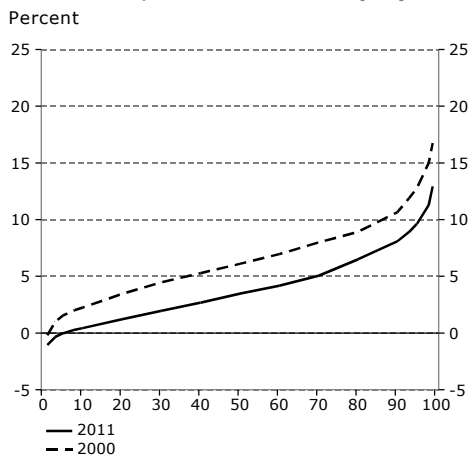Percent

■ Unexplained
▨ Explained

Sources: Statistics Sweden.

Diagram 26 Unexplained Wage Gap for Different Wage Distribution Percentiles, Salaried Employees, Private Sector
Percent
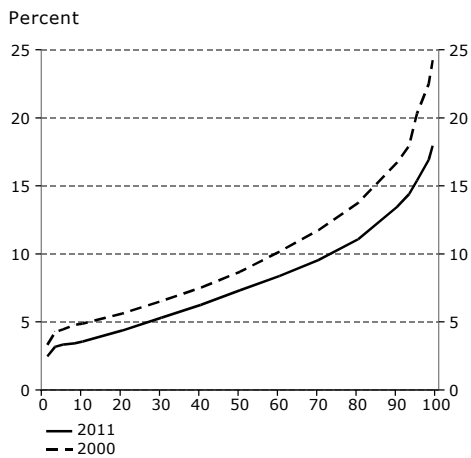
Sources: Statistics Sweden.

Diagram 27 Unexplained Wage Gap for Different Wage Distribution Percentiles, Public Sector Employees
Percent

Sources: Statistics Sweden.

For hourly employees in the private sector, the change in the factors affecting wages has been of greatest importance for the decrease in the pay gap (–1.6 percentage points). The change in compensation for the factors affecting pay, however, has been in the opposite direction (0.3 percentage point). For salaried employees the change in factors that affect their pay is also the principal driver of the change in the pay gap (–4.4 percentage points), whereas the compensation for the factors affecting pay has had a contrary effect (0.8 percentage point).

Chapter 6 also presents new calculations indicating that the decrease in the total pay gap is explainable largely by the fact that women's non-observable factors have become more like men's, and/or that any discrimination has decreased. Non-observable factors are factors that affect pay but cannot be measured, such as self-confidence, social skills and taking responsibility.

GLASS-CEILING EFFECT DIMINISHING ON THE SWEDISH LABOUR MARKET

One component related to the position of women on the labour market is the so-called glass-ceiling effect, which indicates that women may find it harder to attain positions higher up in the management hierarchy. This effect means that the unexplained pay gap increases with higher incomes. By international comparison the glass-ceiling effect is relatively large in Sweden. In recent years, however, the proportion of women executives has increased, and new calculations of the effect suggest that it has been reduced between 2000 and 2011 (see Diagrams 26 and 27). The effect is still substantial, however, with a considerably larger pay gap in the upper part of the distribution of earnings in both the private and public sectors.