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Current wage
pressures in
some EU
countries*

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Tiivistelmä

Paperissa analysoidaan tämänhetkisiä palkkapaineita 14 EU-maassa. Palkkapaineita arvioidaan tarkastelemalla työttömyyden ja funktionaalisen tulonjaon kehitystä sekä viime vuosina että myös pidemmän aikavälin kuluessa. Palkkapaineiden kvantifiointi perustuu palkkakäyrien ja dynaamisten palkkayhtälöiden estimoimiseen. Tulosten mukaan paineet palkkojen kansantulo-osuutta nostaviin palkankorotuksiin ovat suurimmat Italiassa ja Espanjassa. Eurooppalaisen palkkakehityksen kannalta tärkeässä Saksassa paineet ovat samankaltaisia mutta eivät niin voimakkaita. Suomessa palkankorotuspaineet ovat jonkin verran vahvempia kuin Saksassa. Suurimmat paineet palkkamalttiin ovat Portugalissa. Tulosten perusteella aiempaa ripeämpi nimellisansioiden kasvu Saksassa voi lähitulevaisuudessa tukea vakaata talouskehitystä euroalueella.

Abstract

This paper is concerned with current wage pressures in 14 EU countries. Wage pressures are analysed by studying simultaneously past and recent changes in unemployment and functional distribution of income. The quantification of current wage pressures is based on the estimation of wage curves and dynamic wage equations. According to the results of the analysis, upward wage pressures – interpreted as wage increases that lead to an increase in the wage share – are strongest in Italy and Spain. In Germany there are upward pressures but not as strong as in these countries. Portugal is the best example of a country where there is strong pressure for wage moderation. The results support the view that, for the macroeconomic stability of the euro area, it is desirable that in the near future nominal wages in Germany rise faster than in recent years.

JEL classification: E24, E25

Key words: wages, functional distribution of income, unemployment

Introduction

In most old European Union countries the labour market situation has become more favourable. Employment has been growing and unemployment has been on a downward trend. These favourable developments have been accompanied by a very good and perhaps improving average profitability of firms. This also has meant that in these countries the wage shares have been at a historically low level or have been declining. When the labour market situation is improving and the functional distribution of income favours employers, it seems reasonable that pressures will emerge or strengthen for faster wage growth in order to regain part of the lost share of national income.

Nevertheless, the nature of current wage pressures – interpreted here as wage rises that lead to an increase in the wage share – is likely to differ in different countries. Even though the quantification of wage pressures is not easy, one can try to assess in which countries the current pressures may be among the highest and where they are more moderate. One reason which may make the assessment difficult is that, in some countries, the decline of the wage share is a relatively recent phenomena while in others the major part of the decline may have taken place over fifteen years ago.

The pressure to increase the wage share is likely to be high in those countries where a substantial decline in the wage share has taken place, either recently or during a longer period of time. However, pressures are also dependent on the tightness of the labour market. With a given wage share, upward wage pressures may increase, if the labour market becomes more tight. Therefore, when assessing the likelihood of rising wage shares, one should simultaneously take into account the state and history of the functional distribution of income and the tightness of the labour market, measured, for example, by unemployment rate.

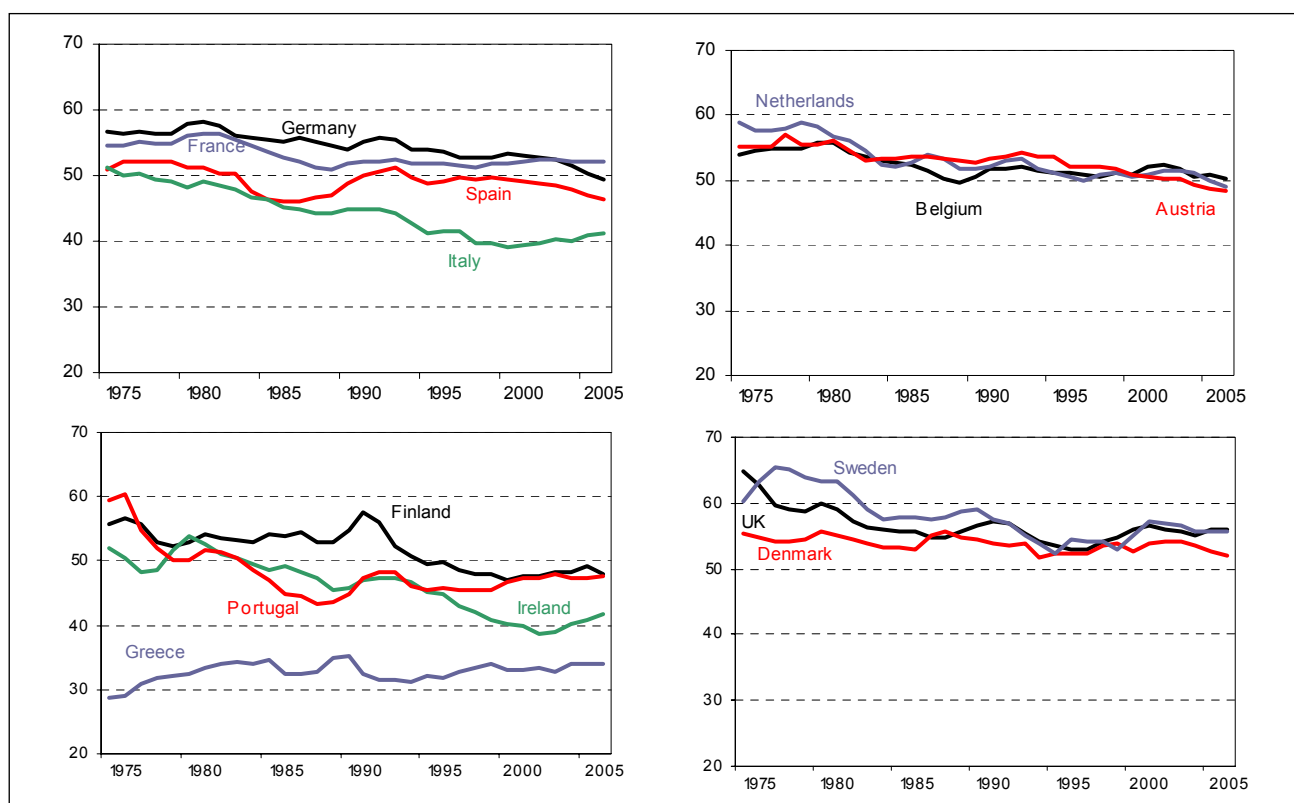
Because both past and recent movements in the wage share and unemployment are important for the current state of wage pressures, both kinds of developments are considered in the subsequent analysis.

Wage shares

Among the four biggest countries of the euro area, Germany has experienced a lengthy period of wage moderation, which has resulted in the decline of the wage share (Figure 1). In Spain the recent decline of the wage share has been similar even though not as steep as in Germany. In France and Italy the share of wages in GDP is clearly smaller than twenty five years ago but during the past ten years it has been relatively stable.

The wage share has also declined in most smaller euro area countries although the pattern of decline differs. During the past ten years the decrease in Austria has been steeper than, for example, in Belgium and the Netherlands, but in both of these countries, and especially in the Netherlands, the wage share is lower than thirty years ago.

Figure 1. Wage shares 1975–2006.



Source: AMECO database of the European Commission.

Note: Wage share is defined as the share of compensation of employees in GDP at current market prices.

Ireland and Finland are small euro area countries where a strong change of the functional distribution of income in favour of profits has occurred during the past fifteen years, but the wage share has recently been relatively stable in Finland, and in Ireland it has even increased. On the contrary, Greece and Portugal are countries where wage earners' share has increased somewhat.

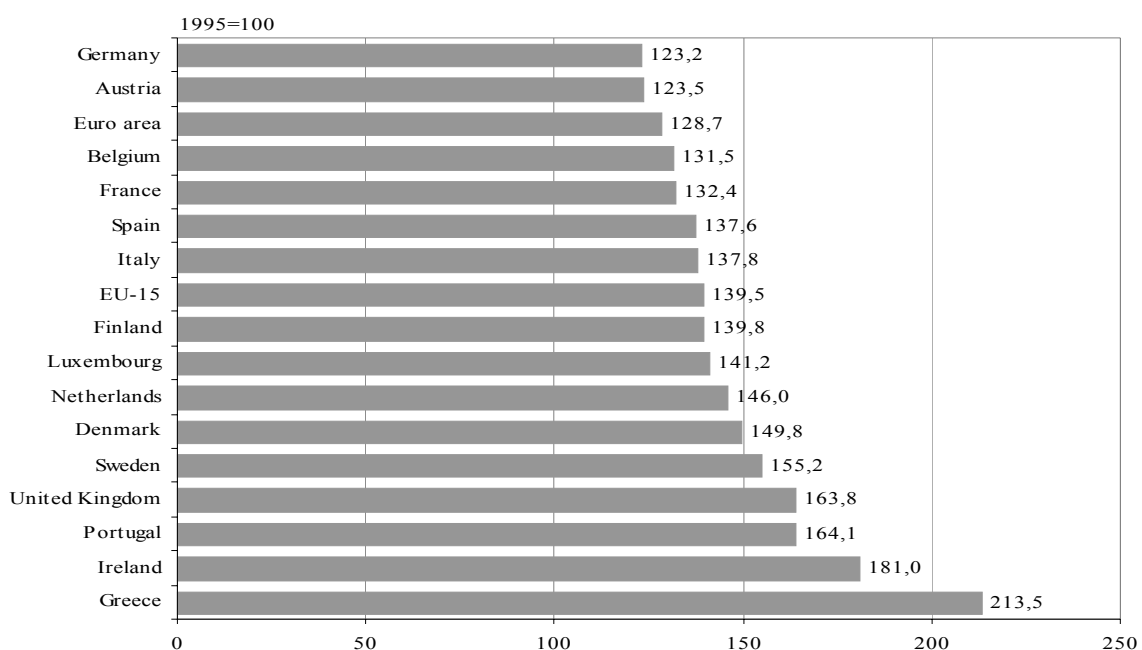
In Sweden the wage share is lower than thirty years ago but during the past ten years it has increased. In Denmark no major changes have occurred during the last decade but recently the wage share has declined. In the UK the wage share has been relatively stable.

Overall, the rather rapid recent declines in the wage share in Germany and Spain are the most important changes in the functional distribution of national income in the old EU countries.

Labour costs

Typically, the decline of the wage share has been associated with wage moderation, and in those countries where the wage share has not dropped the rate of increase of nominal labour costs has normally been higher than average. Greece is the extreme case for wage increases and Germany for wage restraint (Figure 2).

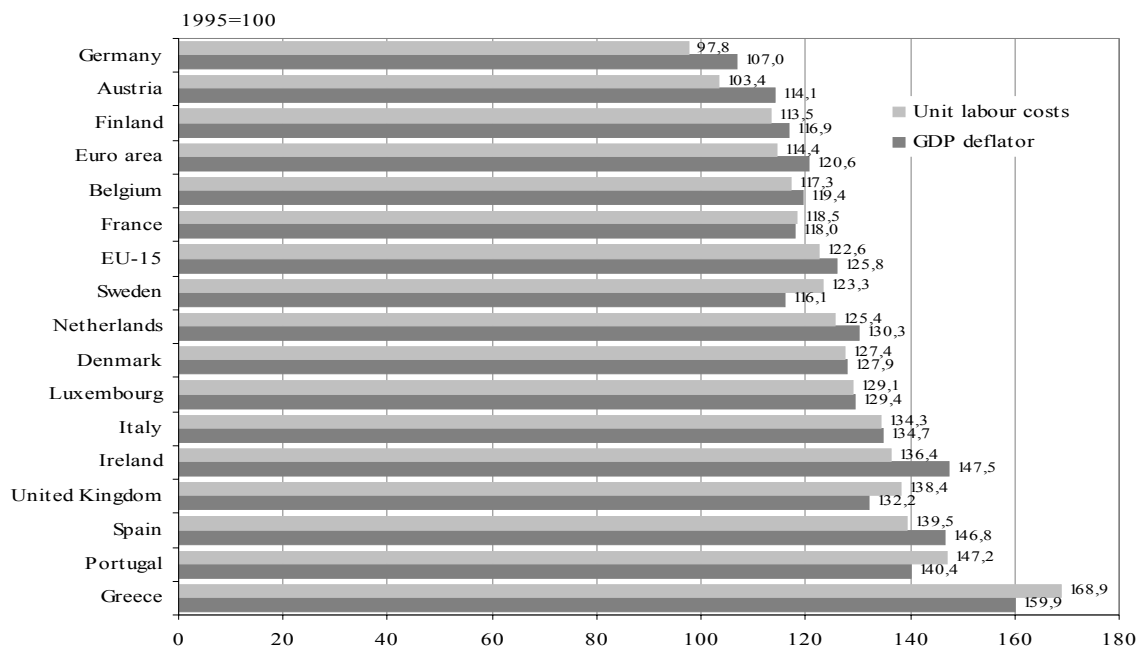
Figure 2. Compensation of employees per employee 1995–2006.



Source: AMECO database of the European Commission.

However, rapid productivity growth may have compensated for faster than average growth of labour costs and kept the rise in unit labour costs, and in the wage share, in check. Finland is an example: The increase of nominal labour costs has exceeded the EU-15 average but due to rapid productivity growth, the rise of unit labour costs has been almost as low as in Germany and Austria (Figure 3).

Figure 3. Unit labour costs and GDP deflator 1995–2006.



Source: AMECO database of the European Commission.

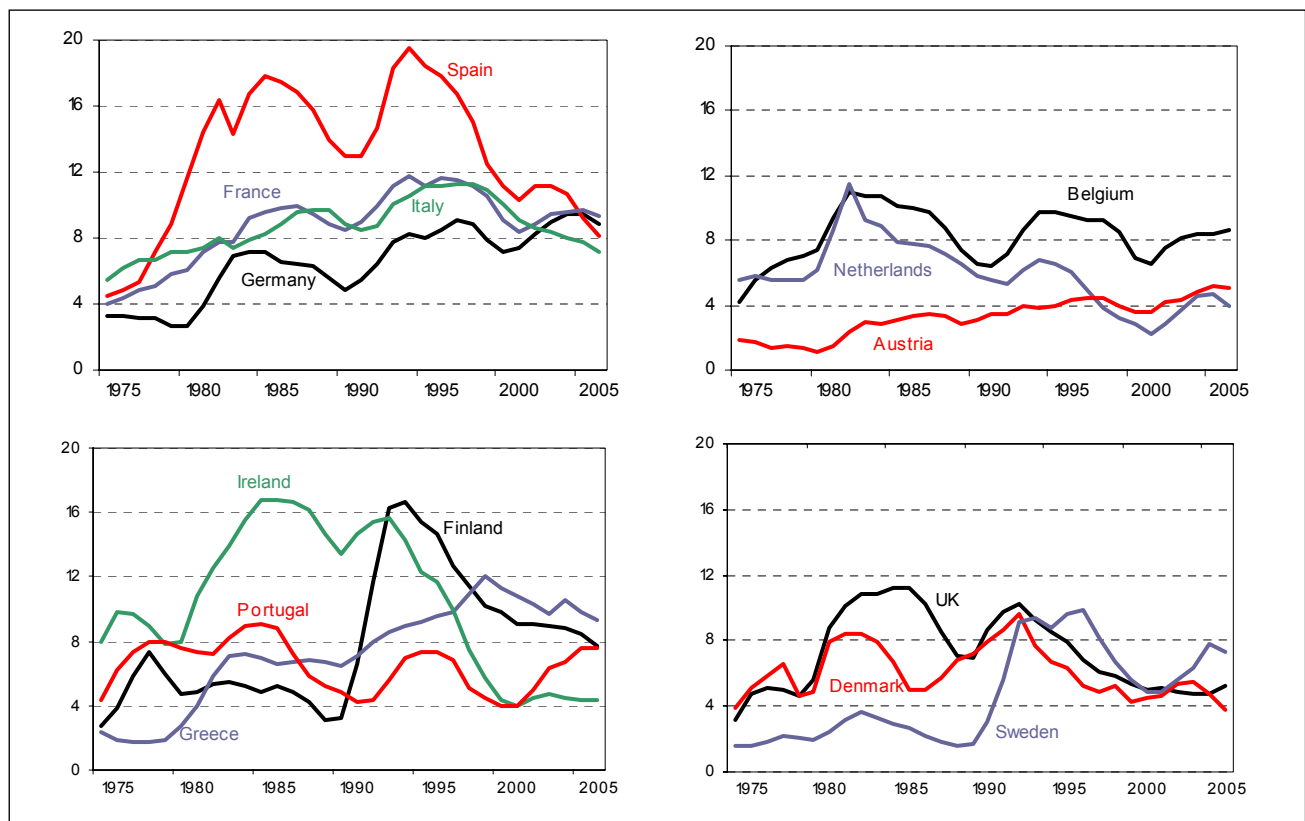
Beside brisk productivity growth inflation may also have offset a rapid increase in nominal labour costs, with the consequence that the wage share has not increased. In Italy and Spain low productivity growth has resulted in faster than average rise in unit labour costs despite lower than average increases in nominal labour costs. In spite of this, the wage share has not increased in Italy and has declined in Spain because the faster than average inflation has compensated (in Spain over-compensated) the rise of unit labour costs.

All in all, even though the decline of the wage share is a feature which is common in most EU-15 countries the manner how the decline has occurred may have differed. In many countries the current low level of the wage share may be the main source of upward wage pressures in the near future, but pressures may also be strongly affected by the tightness of the labour market.

Unemployment

The simplest way of characterizing the tightness of the labour market is to look at changes in the unemployment rate. Recently, in all of the four biggest euro area countries the labour market situation has improved (Figure 4). However, there are big differences in the past movements of unemployment. In Germany unemployment has been on an increasing trend while in Spain unemployment has been decreasing rapidly. In Italy the decline of unemployment has also been substantial while in France changes have been more moderate.

Figure 4. Unemployment rate (%) 1975–2006.



Source: AMECO database of the European Commission.

In the small euro area countries the developments have been diverse. In the Netherlands the labour market will be tight in the near future even though the unemployment rate has increased somewhat from the very low level it achieved in 2001. In Austria unemployment has been on an increasing trend although the level of unemployment is still low. In Belgium, no major changes have taken place, and the rate of unemployment has been relatively stable at near 9 per cent. Finland and

Ireland are countries where unemployment has decreased strongly during the past ten years. In Greece, too, unemployment has fallen during the past few years, but in Portugal it has increased.

In the UK unemployment has been declining even though it rose last year mainly because of a sudden increase in labour supply. In Sweden the rate of unemployment has been at a relatively high level, while in Denmark the labour market has been tightening.

Current wage pressures

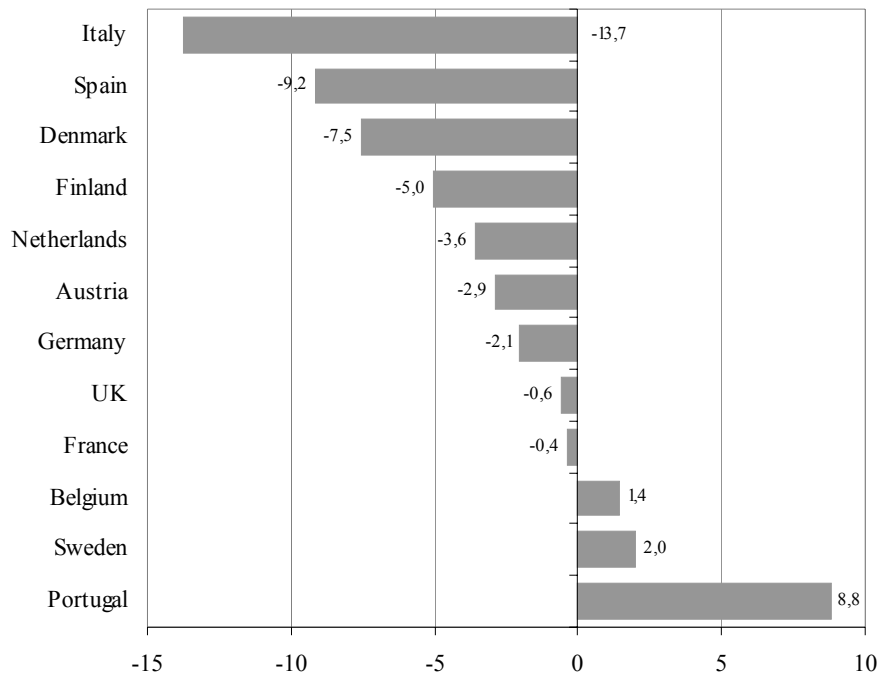
Like developments of functional distribution of income, changes in unemployment have been very diverse. Therefore, the assessment of current wage pressures is not easy if information both on functional distribution of income and of labour market tightness is utilized.

Here we attempt to obtain estimates of current wage pressures by using econometric analysis based on the estimation of simple dynamic wage equations, in which wage curves operate as error-correction mechanisms. Within this approach the information provided by error-correction terms can be used to quantify wage pressures (for more details, see appendix).

According to the econometric analysis the differences in wage pressures in various EU countries are substantial (Figure 5). The situation in Germany is of special importance because it is the largest country in the euro area and trade unions and policymakers throughout Europe are keen to see what kind of collective agreements are concluded in Germany in the near future. As was seen above, the decline of the wage share has been accompanied by an increase in the rate of unemployment, which has contained potential upward wage pressures. However, recent developments seem to indicate that downward pressure on the wage share is coming to an end.

Last year, the wage share continued to decrease even though the situation in the labour market improved. Our indicator indicates that currently there are upward wage-share pressures in Germany. This is worth emphasising because the year 2006 was the first year during the history of the unified Germany when the wage pressure measure, which is constructed by using data from 1975 until 2005, indicates the presence of upward wage pressure. In comparison to some other countries, the pressure is relatively moderate, however.

Figure 5. Wage pressure in selected EU countries in 2006.



Source: AMECO database of the European Commission; own calculations.

Note: For details of calculations, see appendix. For example, the estimate – 2 for Germany means that in 2006 the wage share was about 2 per cent smaller than the value which would not induce pressures for the increase of the wage share. Estimates for Greece and Ireland are lacking, because they were too unreliable.

Among the large EU countries the biggest upward pressures on the wage share are in Italy. Even though the wage share has been relatively stable during the past ten years, the improved situation in the labour market has induced growing wage pressures during the past five years. Spain is the other large EU country where the decline of both the wage share and unemployment have induced upward wage pressures. (However, the assessment of the situation in Spain is particularly difficult because the relevant estimates for Spain are not very reliable.)

These pressures may turn out to be problematic for macroeconomic stability, because Italy and Spain belong to those euro area countries where unit labour costs have increased more rapidly than on average. In France the current situation is more or less neutral in the sense that there are not noteworthy upward or downward pressures on the wage share. In the UK the situation is similar.

In smaller EU countries situations differ. In Denmark the presence of upward wage pressures is apparent. The unemployment rate has decreased to below 4 %, and the wage share also is at a historically low level. There is also upward pressure in Finland, in the Netherlands and in Austria but not as strong as in Denmark.

On the other hand, Portugal is the best example of a country where there is strong pressure for wage moderation. In recent years, the rise of unemployment rate has been combined with the rise of the wage share, which has reflected rapidly increasing unit labour costs. In Sweden developments in the labour market have been relatively weak, which in combination with a recent rise in the wage share has induced downward pressure on the wage share.

On the whole, the presence of noteworthy upward pressure on the wage share in Italy and Spain, and the recent turnaround in Germany, are the most important characteristics of the current situation in the euro area. That is not a matter of concern as long as price stability is preserved in the euro area which seems likely given the present situation. In Italy and Spain, however, increasing upward wage pressures have been accompanied by a relatively rapid growth of unit labour costs. Because of the upward wage pressures, these developments will highly likely persist at least in the near future and will worsen the competitiveness of these countries vis-à-vis the other euro area countries.

For the macroeconomic stability of the euro area it is highly desirable that nominal wages in Germany rise faster than in the past. The continuation of wage policies which would lead to a further decline in the wage share could only have a destabilising influence.

Appendix: The measurement of wage pressure

One way of constructing measures for wage pressure is to estimate wage curves, which represent the real wage or the wage share as a function of unemployment rate and of some other factors, and utilize them in the quantification of pressures.

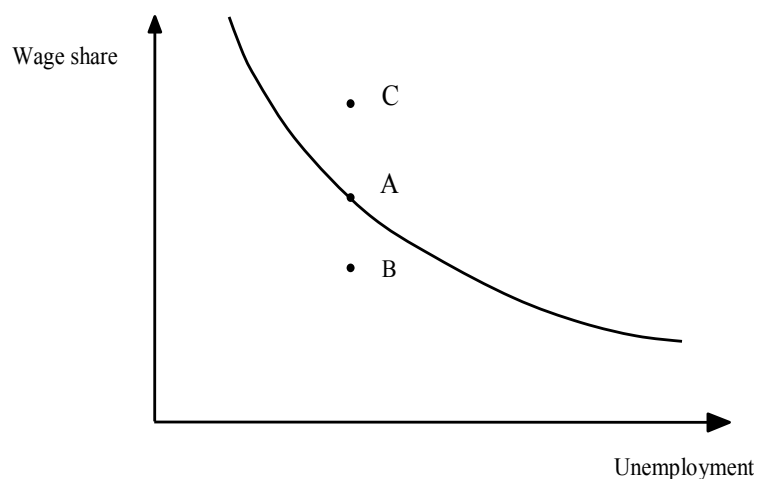
There is a vast theoretical and empirical literature on wage curves. That literature will not be surveyed here but it is worth noting that a wage curve plays an important part in many kinds of theories of (real) wage determination, including both mainstream and heterodox theories. (Layard et al., 1991 and Rowthorn, 1999, among others, present theoretical models which have been utilised when wage curves have been estimated within a macroeconomic framework. Blanchflower and Oswald, 1994, 2005 and Nijkamp and Poot, 2005 include surveys on a large number of studies which usually employ pooled cross-section time-series data in the estimation of wage curves.)

The wage curve can be interpreted as an outcome of wage negotiations between labour market parties. The higher unemployment is, the weaker is the bargaining position of trade unions and the smaller is the wage share. A wage curve can be written as

$$(1) \quad WL/PY = f(U,Z),$$

where WL/PY denotes the wage share, U unemployment and vector Z other factors affecting the share (Figure A).

Figure A. A wage curve.



The wage curve can be regarded as an equilibrium relationship between the wage share and unemployment (and some other factors). With a given level of unemployment it shows the level of the wage share that wage setters are ready accept (for example point A in Figure A). Consequently, if the realized level is below that level (indicated by point B in Figure A) upward wage pressure is induced. Accordingly, if the realized level is higher (point C) wage setters accept wage moderation. (Obviously, the equilibrium is partial, because the level of unemployment is assumed to be given. The determination of unemployment can, of course, be endogenized.)

The difference between wage shares at B and A (or at C and A) measures wage pressure. If the economy is at point A, the difference is equal to zero. Negative differences indicate the presence of upward wage pressure.

With this kind of interpretation wage curves can be utilized when wage pressures are quantified. After the estimation of wage curves, wage pressures can be computed by comparing realized values of wage shares with those values given by wage curves at realized levels of unemployment rate. Figure 5, which depicts the situation in 2006, is based on the use of this method.

Wage curves were estimated as a part of the estimation of dynamic wage equations in which wage curves define the error-correction mechanism.

Typically, the estimated wage curves are of the form

$$(2) \quad \ln(WL/PQ) = \alpha - \beta \ln(U\%), \quad \alpha, \beta > 0,$$

where $\ln(WL/PQ)$ is the log of the wage share and $U\%$ is unemployment rate. The curve is as simple as possible, because unemployment rate is the only explanatory variable. Additional explanatory variables could be added, but for the present purpose the simple specification is acceptable.

The estimated dynamic wage equations are of the form

$$(3) \quad \Delta \ln(WL/PQ)_t = -\gamma \Delta \ln(U\%)_{t-1} - \theta (\ln(WL/PQ) - \alpha + \beta \ln(U\%))_{t-1}, \quad \gamma, \theta > 0,$$

i.e. in addition to the error-correction term the equations include lagged changes in unemployment rate as explanatory variables.

Dynamic equations were estimated in two stages. First, an autoregressive distributed lag model was estimated in levels. From that model the wage curve is obtained as a long-run solution. Thereafter equations of the type (3) were estimated by using wage curves as error-correction mechanisms. Even though the results from the first stage are sufficient for the calculation of wage pressures, the results from the second stage are important, because they give valuable information about the role of wage pressures in wage determination in various countries.

For each country the estimation of wage curves and dynamic wage equations was based on the use of annual data in the AMECO database of the European Commission. The results from the estimations for twelve EU countries are reported in Tables A.1 and A.2. (For analogous earlier results for some of the countries, see, for example, Drèze and Bean, 1990 and van der Horst, 2003.) Typically, the estimation period consists of the years from 1975 until 2005. In some cases it was longer, in others shorter. Standard statistical criteria was utilised in the determination of the length of estimation period. Normally, it was impossible to find a statistically significant (negative) relationship between the wage share and unemployment rate if the data from the 1960s until 2005 was used. This should not come as a surprise, because the wage share is defined as the share of compensation of employees in GDP. This share is affected, for example, by the size of the public sector. Consequently, structural changes, like the rise of the share of the public sector in the economy, may give rise to trends in wage shares, which makes the estimation of wage curves difficult. Shorter estimation periods were used mainly in order to overcome the difficulty which was caused by trends of this kind.

There are also other factors which may produce shifts in wage curves or changes in the slopes. The constancy of the parameters was analysed by standard Chow-tests. Recursive constancy statistics are not reported here, because by looking at the results in Tables A.1 and A.2 one can get the relevant information about the goodness of various wage curves and dynamic wage equations.

For the present purpose the results are satisfactory for most countries. Results for Greece and Ireland are not presented at all because they were very unreliable. Among the large euro area countries the results for Spain are the most unreliable. For Belgium and the Netherlands the estimation of a reasonable wage curve turned out to be difficult.

Table A.1. Wage curves.

| Country | Sample | Wage curve | Chi ² |
|-----------------|-----------|-------------------------------------------------------|------------------|
| Germany | 1975-2005 | $\ln(WL/PQ) = 4.29 - 0.17\ln(U\%)$ (33.4) (-2.22) | 4.9* |
| France | 1975-2005 | $\ln(WL/PQ) = 4.26 - 0.14\ln(U\%)$ (57.6) (-4.01) | 16.6* |
| Italy | 1970-2005 | $\ln(WL/PQ) = 4.28 - 0.49\ln(U\%)$ (-21.2) (-4.46) | 19.9** |
| Spain | 1975-2005 | $\ln(WL/PQ) = 4.13 - 0.10\ln(U\%)$ (32.9) (-1.93) | 3.7 |
| United Kingdom | 1962-2005 | $\ln(WL/PQ) = 4.22 - 0.10\ln(U\%)$ (32.3) (-1.36) | 1.9 |
| The Netherlands | 1980-2005 | $\ln(WL/PQ) = 4.02 - 0.07\ln(U\%)$ (24.9) (-0.59) | 0.36 |
| Belgium | 1975-2005 | $\ln(WL/PQ) = 5.2 - 0.60\ln(U\%)$ (3.4) (-0.82) | 0.7 |
| Austria | 1975-2005 | $\ln(WL/PQ) = 4.1 - 0.10\ln(U\%)$ (132.0) (-3.54) | 12.5** |
| Portugal | 1970-2005 | $\ln(WL/PQ) = 4.45 - 0.33\ln(U\%)$ (13.4) (-1.75) | 3.1 |
| Denmark | 1975-2005 | $\ln(WL/PQ) = 4.15 - 0.10\ln(U\%)$ (51.3) (-2.11) | 4.4* |
| Sweden | 1962-2005 | $\ln(WL/PQ) = 4.17 - 0.09\ln(U\%)$ (91.5) (-2.69) | 7.2** |
| Finland | 1975-2005 | $\ln(WL/PQ) = 4.27 - 0.17\ln(U\%)$ (53.8) (-4.14) | 17.1** |

Notes: t-statistics in parentheses. The Wald test statistic for the long-run equation is also reported;
* significant at 5%; ** significant at 1%.

Table A.2. Dynamic wage equations.

| Country | Sample | Wage equation | R ² | D-W |
|-----------------|-----------|-----------------------------------------------------------------------------------------------------------------------|----------------|-----|
| Germany | 1975-2005 | $\Delta \ln(WL/PQ)_t = -0.03\Delta \ln(U\%)_{t-1} - 0.14(\ln(WL/PQ) - 4.29 + 0.17\ln(U\%))_{t-1}$ (-3.47) (-4.39) | 0.47 | 1.6 |
| France | 1975-2005 | $\Delta \ln(WL/PQ)_t = -0.02\Delta \ln(U\%)_{t-1} - 0.26(\ln(WL/PQ) - 4.26 + 0.14\ln(U\%))_{t-1}$ (-1.34) (-6.78) | 0.63 | 1.5 |
| Italy | 1970-2005 | $\Delta \ln(WL/PQ)_t = -0.075\Delta \ln(U\%)_{t-1} - 0.15(\ln(WL/PQ) - 4.28 + 0.49\ln(U\%))_{t-1}$ (-2.0) (-4.79) | 0.55 | 2.5 |
| Spain | 1975-2005 | $\Delta \ln(WL/PQ)_t = 0.00035\Delta \ln(U\%)_{t-1} - 0.21(\ln(WL/PQ) - 4.13 + 0.1\ln(U\%))_{t-1}$ (0.99) (-3.0) | 0.25 | 0.9 |
| United Kingdom | 1962-2005 | $\Delta \ln(WL/PQ)_t = -0.054\Delta \ln(U\%)_{t-1} - 0.07(\ln(WL/PQ) - 4.22 + 0.1\ln(U\%))_{t-1}$ (-4.74) (-1.94) | 0.48 | 1.5 |
| The Netherlands | 1980-2005 | $\Delta \ln(WL/PQ)_t = -0.019\Delta \ln(U\%)_{t-1} - 0.11(\ln(WL/PQ) - 4.02 + 0.07\ln(U\%))_{t-1}$ (-1.11) (-3.24) | 0.27 | 1.5 |
| Belgium | 1975-2005 | $\Delta \ln(WL/PQ)_t = -0.03\Delta \ln(U\%)_{t-1} - 0.06(\ln(WL/PQ) - 5.2 + 0.60\ln(U\%))_{t-1}$ (-2.28) (-5.82) | 0.56 | 2.1 |
| Austria | 1975-2005 | $\Delta \ln(WL/PQ)_t = -0.02\Delta \ln(U\%)_{t-1} - 0.28(\ln(WL/PQ) - 4.1 + 0.10\ln(U\%))_{t-1}$ (-1.11) (-3.17) | 0.29 | 1.2 |
| Portugal | 1970-2005 | $\Delta \ln(WL/PQ)_t = -0.01\Delta \ln(U\%)_{t-1} - 0.20(\ln(WL/PQ) - 4.45 + 0.33\ln(U\%))_{t-1}$ (-0.37) (-5.1) | 0.48 | 1.5 |
| Denmark | 1975-2005 | $\Delta \ln(WL/PQ)_t = -0.01\Delta \ln(U\%)_{t-1} - 0.32(\ln(WL/PQ) - 4.15 + 0.10\ln(U\%))_{t-1}$ (-1.75) (-4.58) | 0.45 | 1.8 |
| Sweden | 1962-2005 | $\Delta \ln(WL/PQ)_t = -0.04\Delta \ln(U\%)_{t-1} - 0.17(\ln(WL/PQ) - 4.17 + 0.09\ln(U\%))_{t-1}$ (-3.31) (-3.17) | 0.42 | 1.9 |
| Finland | 1975-2005 | $\Delta \ln(WL/PQ)_t = -0.02\Delta \ln(U\%)_{t-1} - 0.26(\ln(WL/PQ) - 4.27 + 0.17\ln(U\%))_{t-1}$ (-1.66) (-6.04) | 0.71 | 1.7 |

Note: t-statistics in parentheses.

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