
Wages in the crisis

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Rory O'Farrell

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Abstract

The recent global recession has had differing effects on wages across Europe. This paper presents wage patterns for EU countries since the impact of the financial crisis, and compares them to previous trends. Wages in the countries hardest hit by the recession have underperformed when compared to previous trends. The role of wages in determining international competitiveness is also examined and the importance of the general price level as opposed to wage levels is highlighted.

1. Introduction¹

The 15th September, 2008, can be viewed as the turning point of the financial crisis. In the midst of a US presidential election, and after a summer of rising inflation, Lehman Brothers filed for bankruptcy. The current financial crisis is special in two main respects. The first and most obvious is the size and scope of the worldwide recession, leading to the first decline in global output since World War II. The second reason, from a European perspective, is that this is the first major crisis since the introduction of the Euro currency.

This report looks at how wages have developed during the economic and financial crisis. The level of wages plays a crucial role in the economy. Not just a cost to business, wages and salaries give consumers the spending power needed to purchase goods and services. Over the past decade, against a background of low wage growth some governments permitted credit led economic expansion, whereby consumers were encouraged to borrow money in order to maintain demand in the economy. In other countries growth was based on exports as wage restraint reduced domestic demand. This combination of policies has been shown to be disastrous.

The crisis has hit some countries harder than others, and some have lost competitiveness in the aftermath of their credit bubbles. In the past, when countries were faced with a recession and a decline in their competitive position, one policy option was to devalue their currency. This made their exports cheaper and boosted their economy. However, with the introduction of the Euro, this was no longer possible for Euro Area countries. In addition to the Eurozone which formally contains 16 countries; the three Baltic countries, Denmark and Bulgaria have their currencies pegged to the Euro. Some countries (such as Ireland) have attempted a 'simulated devaluation' by reducing nominal prices and wages. While this 'simulated devaluation' has already been applied in Ireland and the Baltic countries, pressure is being placed on southern Eurozone countries such as Portugal, Greece and Spain to follow a similar approach (Mallet, 2010). Also, across Europe some employers may try to reduce wages as their firms are genuinely in serious financial trouble, and other profitable firms may simply try to take advantage of the labour market uncertainty in order to reduce wages.

In examining the effect of the crisis on wages it is important to remember that the main impact of the recession on the labour market has been to depress employment. Unemployment greatly reduces the incomes of affected workers and over time puts a downward pressure on the wages of those still in employment. Changes in employment have three main effects on average wages:

1. There is an immediate, purely statistical effect. More low-productivity jobs tend to be destroyed during recessions than high productivity jobs (Pissarides, 2009). If those who lose their jobs are lower paid workers, then by

1. I would like to thank Andrew Watt, Béla Galgóczi, Janine Leschke and Vera Glassner for their comments and suggestions.

removing these workers the average wage will increase, despite no actual increase in wages occurring. Conversely if over-time hours are cut then average 'effective wages' will decrease as workers no longer work hours that include an overtime premium.

2. During recessions labour productivity tends to decrease (De Long and Waldmann, 1997) as there is less demand for firms' output and firms have surplus capacity. This can be due to labour hoarding. As wages are linked to productivity, this puts downward pressure on wages. However, redundancies affect lesser productive workers (such as those with less experience) to a greater degree than more productive workers. Also, when working hours are reduced it is usually the least productive hours that are curtailed, such as overtime hours or off-peak hours in the service sector.
3. Over time the reduced demand for labour will have a depressing effect on wages. A decrease in labour market tightness (due to higher unemployment relative to vacancies) makes it easier for employers to fill vacancies, and more difficult for workers to find employment. This improves the bargaining position of employers relative to workers and reduces nominal wages or at least their rate of growth. This can have a multiplier effect as reduced incomes will serve to further reduce demand.

Though the impact of unemployment on welfare is important, the focus of this study is on the effect of the crisis on wages and salaries.

The layout of the paper is as follows. In section two the depth of the recession and how it led to decreases in employment and hours worked is examined. Section three looks at wage developments, which have varied greatly across Europe both for business sector wages and minimum wages. Section four examines wages and international competitiveness and highlights the importance of the general price level as opposed to focusing on wage levels. Section five concludes.

2. Depth of the recession

Though the collapse of Lehman Brothers marked a tipping point for confidence in the financial sector, real GDP in Europe had peaked in absolute terms before this moment. Of the 27 member states of the EU, 19² had shown declines of GDP in real terms prior to that point. In Ireland, real GDP peaked as early as the first quarter of 2007, a year and a half before the financial crisis, and Latvia and Estonia peaked in the last quarter of 2007.

Figure 1 shows the declines in real GDP from the time of a country's peak to the third quarter of 2009. Every EU country, with the exception of Poland, has seen real declines in GDP during the current recession. This has reduced the size of the pie from which workers can cut their share.

2. No data is available for Bulgaria

Figure 1 Percentage decline in real GDP (from peak real GDP to Q3 2009)



Source: Eurostat Quarterly National Accounts; seasonally adjusted data

Unemployment and working hours

In all EU countries, again with the exception of Poland³, employment has fallen. Most of the impact of the crisis on workers has been in reductions of employment and working hours, rather than changes in wages. Figure 2 shows that, on the whole, the countries that have suffered the largest falls in real GDP are also the countries that have suffered the largest falls in employment. Changes in employment are affected, not just by falls in real GDP, but also by policies, such as short-time working schemes in Germany and some other countries (Leschke and Watt, 2010) to maintain employment.

Figure 2 Change in employment (from time of country's peak employment to Q3 2009)

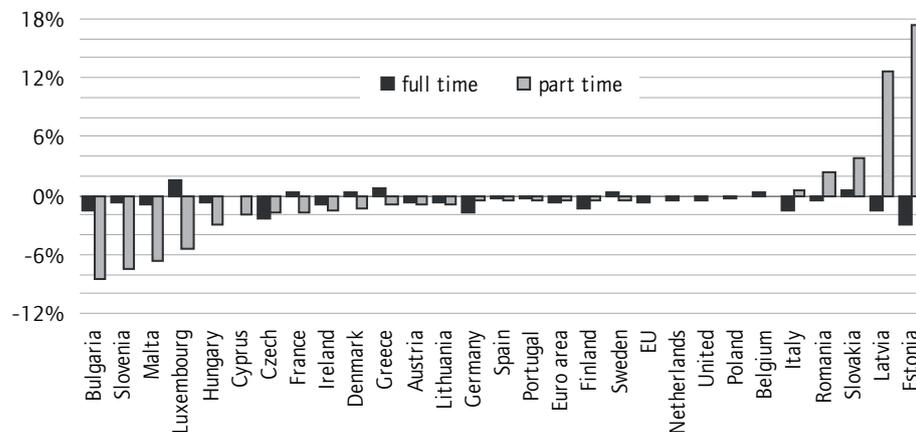


Source: Eurostat Quarterly National Accounts; seasonally adjusted data

3. By the third quarter of 2009 Poland had overtaken Spain in having the highest percentage of employees on temporary contracts.

In addition to changes in wage rates, changes in working hours can also have an effect on workers incomes. Figure 3 shows changes in actual hours worked in a worker's main job. As can be seen part-time workers' hours have changed to a far greater degree than those of full time workers. This can be due to part time workers generally having more flexible working arrangements. In some countries that have been hardest hit by the crisis, such as Latvia and Estonia, there has been a large increase in the average hours worked by part-time workers and a decrease in hours worked by full-time workers. In these countries there has been a shift in employment from full-time to part-time jobs, so most of the increase in part-time hours is probably due to full time workers having their hours cut and being reclassified as part-time workers.

Figure 3 Change in hours worked (Q3 2008 to Q3 2009)



Source: Eurostat Labour Force Survey

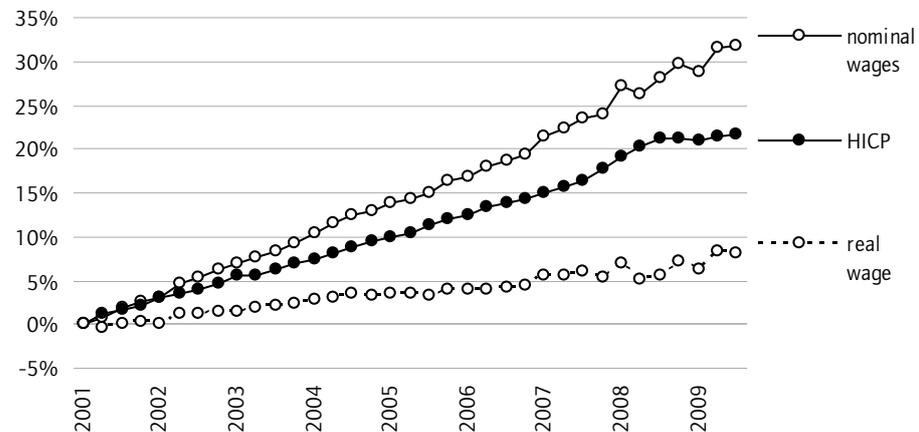
Across Europe there has been a trend of decreases in working hours, though Slovakia, Belgium, Greece and Luxembourg have actually seen increases in average working hours. While Portugal has seen a decrease in working hours for full-time and part-time workers, average hours worked has seemingly paradoxically increased, as more part-time workers have lost their jobs than full-time workers.

As can clearly be seen, the recession has led to large falls in employment, and also decreases in hours worked by those still in employment. This has the effect of reducing workers' incomes.

3. Change in wages

The period prior to the economic crisis was characterised by low average real wage growth in Europe, with wages only seeing large increases just at the beginning of the financial crisis (Figure 4). This wage stagnation occurred at a time of economic growth, resulting in a falling labour share of income. Wages and employment simply did not grow fast enough to maintain a steady labour share of income.

Figure 4 EU27 business sector wages (percentage change since 2001)



Source: Eurostat HICP and Eurostat Labour Cost Index (seasonally adjusted). Seasonal adjustment of HICP performed using TRAMO-SEATS

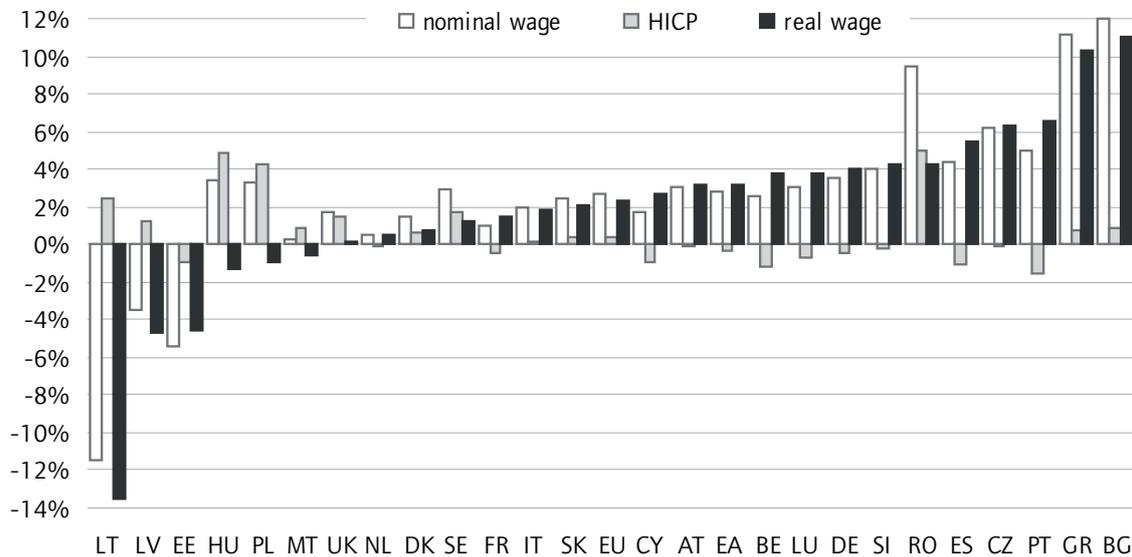
Figure 5 shows how real and nominal hourly wages have changed in percentage terms since the third quarter of 2008, the date of the impact of the financial crisis, to the third quarter of 2009. The graph shows data relating to the business economy, so the public sector is excluded⁴. This is unfortunate as the public sector has received large pay cuts in some countries, such as Ireland and Latvia (Weisbrot and Ray, 2010). In the EU real wages have grown by 2.35 per cent. As would be expected from the falls in real GDP, wages in the Baltic countries have been hit hardest by the crisis. So far, only in the Baltic countries have wages decreased in nominal terms⁵. Workers in these countries are being hit hard by the ‘simulated devaluation’ as wages are falling faster than prices.

Hysteresis, or lagged effects in a system, can help account for increases in wages since the impact of the crisis. The financial crisis was immediately preceded by a spike in inflation due to high commodity prices. This led to unions negotiating higher wages in anticipation of higher inflation. Also, in some countries (such as Germany) agreements were made following a long period of wage moderation. Wages were playing catch-up. A final explanation for continued wage increases despite the crisis is the extent to which the figures for wage increases are biased upwards due to a change in composition of the workforce.

4. Data on wage trends in the public sector are only available for a limited number of countries.

5. Data is not available for the two Eurozone countries that have been hit hardest by the crisis, Ireland and Finland.

Figure 5 Changes in business sector wages (Q3 2008 to Q3 2009)



Source: Eurostat Labour Cost Index and HICP

Figure 6 shows which sectors have been affected the most across the EU. The only sector to show a real reduction in wages and salaries across Europe is real estate activities. This is perhaps unsurprising given the role that property bubbles in the UK, Spain, Ireland and the Baltic countries had played in their pre-crisis booms. Perhaps more surprising is that wages in the construction and financial and insurance activities sectors have increased at a similar level to other sectors. Mining and quarrying showed the strongest increase in real wages at 5.6 per cent.

Since the financial crisis business sector wage developments across EU countries have deviated from their trend. The appendix contains graphs for all EU countries, except Ireland and Finland, which compare actual percentage changes in real wages with real wage developments that could be predicted, by extrapolating past trends,⁶ had the financial crisis not occurred.

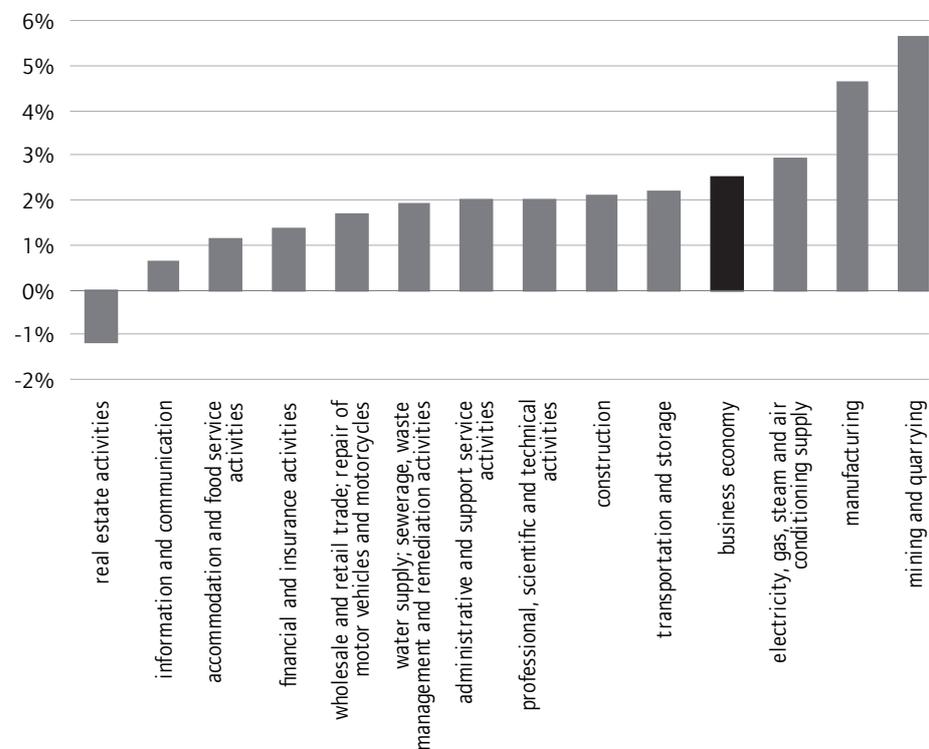
Up to the last quarter of 2009, for Austria, Cyprus, Denmark, France, and Netherlands there has been little deviation from past trends, while for the UK there has been little deviation apart from the first quarter of 2009. This was largely due to a fall in wages in the financial sector, where wages and salaries fell by over 30 per cent during this quarter. This can be explained by smaller bonuses being paid during this period.

For some western EU countries, and for the EU as a whole, real wages have actually outperformed what one would expect from previous trends. Largely

6. Predicted values were computed using the automatic procedure of the TRAMO-SEATS program (using parameters Iter=2 and RSA=3). The predictions were based on seasonally unadjusted quarterly data on wages (sectors B-N) from Q1 2000 to Q3 2008.

due to a decrease in the rate of inflation, real wages increased in Belgium, Germany, Greece, Italy, Luxembourg, Portugal and Spain. The increase in Germany is largely due to agreements reached before the impact of the crisis when it was anticipated that inflation would be higher than actually was the case. Also, during the past decade Germany experienced a period of wage restraint, and wage increases were sought to make up for lost ground. For Spain the figures are interesting as, though Spain has not suffered the largest falls in real GDP, it was one of the earliest countries to be affected by the crisis as the construction boom came to an end. Spain has seen a large fall in employment.

Figure 6 Percentage change in EU wages by sector (Q3 2008 to Q3 2009)



Source: Eurostat Labour Cost Index

If it is mainly low paid workers who are losing their jobs in Spain then the average wage will increase despite no wage increases actually being granted. Greece is currently under pressure from bond markets to reduce wages in the public sector due to a large government deficit. Cutting wages in the public sector will put downward pressure on private sector wages in Greece.

The countries for which wages have underperformed most are mainly new member states of the EU (again, data is unavailable for Finland and Ireland, which are the western countries that suffered largest declines in real GDP). Wages in Bulgaria, Hungary, Malta, Romania, Slovakia, and Slovenia have all underperformed. Real wages in Hungary have decreased slightly, because, although nominal wages have increased since the impact of the financial crisis, consumer prices have increased more. This increase in prices, and decrease

in real wages is partly due to the *actual* as against *simulated* devaluation experienced in Hungary, as the forint has fallen against the euro. Real wages have fallen in Poland despite Poland being the only EU country not to enter recession and having stable employment. Inflation has completely eliminated the value of nominal wage increases granted since the financial crisis. In Sweden wages also underperformed somewhat, which is unique for a Western European country (for which data is available). The countries for which wages have underperformed by far the most are the Baltic countries of Estonia, Latvia and Lithuania. Lithuania has shown the most dramatic falls in real wages (for the business sector) which have been falling since the beginning of 2008, before the impact of the financial crisis. Despite large nominal falls in wages, prices continue to increase.

During the past decade wages largely stagnated in Western Europe, while in Eastern Europe wage growth was higher. This stagnation in wages is a possible explanation for the imbalances among European economies. A strategy of low wage growth in Germany was pursued so as to increase international competitiveness, by reducing labour costs, and so encourage export led growth. However this also had the effect of reducing domestic demand, leading to persistent current account surpluses. In contrast, Spain, which experienced a credit boom and had higher wage growth, had a persistent current account deficit. While deficit countries' economic growth was based on unsustainable credit growth, surplus countries also had an unsustainable policy which effectively took the form of German savers loaning money to people in deficit countries so that these people would buy German exports.

Overall we can see that there have been large differences between sectors and between countries in how wages have changed. There is no overall pattern to the wage changes with the exception that, countries that had the largest falls in real GDP in the wake of the financial crisis have also had the largest falls in wages. The lack of a pattern highlights that Europe consists of 27 separate labour markets rather than just one, with very different policy strategies being pursued by governments and different wage setting mechanisms in each country.

Up until the third quarter of 2009 there has been no large general impact on wages from the financial crisis in most countries. Partly, this is due to lagged effects of collective bargaining. Agreements had been reached, particularly in Germany, prior to the crisis with the aim of increasing wages following a period of wage restraint. It remains to be seen what outcome will result from future rounds of bargaining. Also, wages are typically slower to react during recessions than employment or working hours. As has been shown, labour markets have reacted by falls in employment and by decreases in hours worked. These serve to increase the productivity of firms during recessions, and it remains to be seen if firms will aim to reduce their cost base further by decreasing wages.

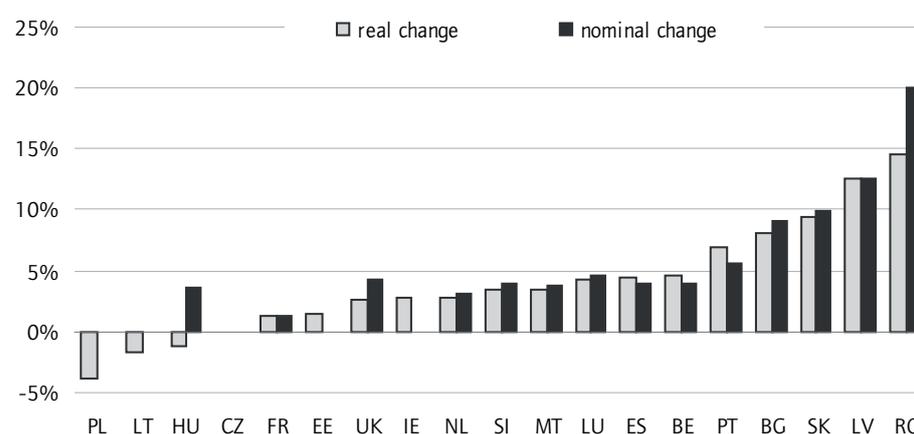
The Baltic countries were among the first to be hit by the recession and experienced decreases in real wages. The rationale for this was partly to reduce pay in the public sector in order to balance government budgets. Pressure is now being put on countries such as Greece to cut public sector wages. As an

exit strategy is decided upon, cutting public sector wages is emerging as a general pattern.

Minimum wages

21 of the 27 EU countries have a statutory minimum wage in force. This sets a floor below which wages can not fall, and may help to boost wage equality during the recession⁷. Most of the countries without national minimum wages have de facto minimum wages which are agreed through collective agreements. As export orientated firms tend to be more productive and pay higher wages (see for example Schank et al., 2007) minimum wages affect international competitiveness to a far less degree than other wage levels in the economy.

Figure 7 Changes in minimum wage (Q3 2008 to Q3 2009)



Source: Eurostat Minimum Wages and HICP

Figure 7 shows how real and nominal (in terms of national currency) minimum wages changed from the 2nd half of 2008 to the 2nd half of 2009⁸. Lower paid workers usually spend a higher proportion of their incomes on essential items such as rent, food, and heating. Unfortunately no price index is available specifically for those on lower incomes, and so the general price index was used. Five countries showed no change in monthly minimum wages. Estonia and Ireland show real wage increases due to deflation, while Poland and Lithuania show real decreases. Despite nominal increases in the minimum wage in Hungary these have been eroded by inflation, leading to a real decrease in the minimum wage. Latvia shows one of the highest increases in the minimum wage, in both real and nominal terms, during this period in spite of Latvia having the steepest fall in real wages for the business sector.

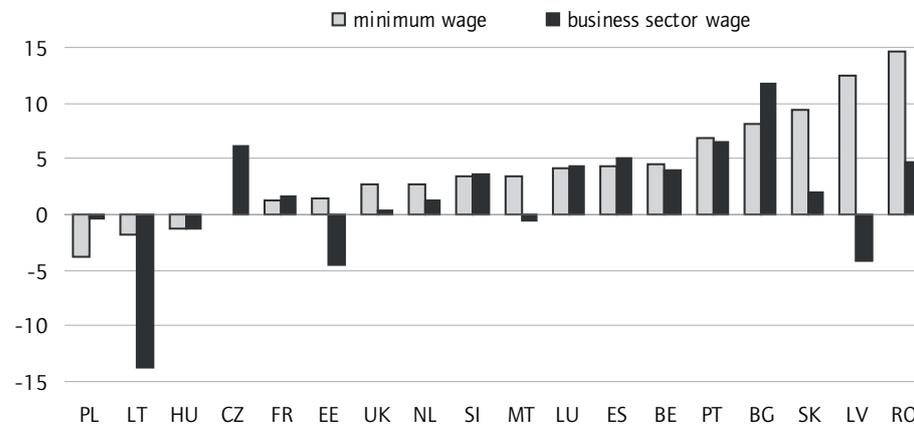
7. See Schulten (2009) for a description of debates surrounding the minimum wage during the crisis.

8. No data is available for Greece or Cyprus. Austria, Germany, Italy, Denmark, Sweden and Finland do not have national minimum wages. To calculate real changes, nominal minimum wages were divided by the Harmonised Index of Consumer Prices (HICP). The HICP weights expenditure on items according to the national average.

However the minimum wage is expected to decrease, in accordance with Latvia's policy of 'simulated devaluation'.

Figure 8 compares changes in real average wages and the real minimum wage. If minimum wages increase faster than average wages, this can help to boost wage equality. In Romania, Lithuania and Slovakia minimum wages have improved relative to average wages, but in Bulgaria, the Czech Republic and Poland the opposite has been the case.

Figure 8 Changes in minimum wage and business sector wages (Q3 2008 to Q3 2009)



Source: Eurostat Minimum Wages, Eurostat Labour cost index and Eurostat HICP

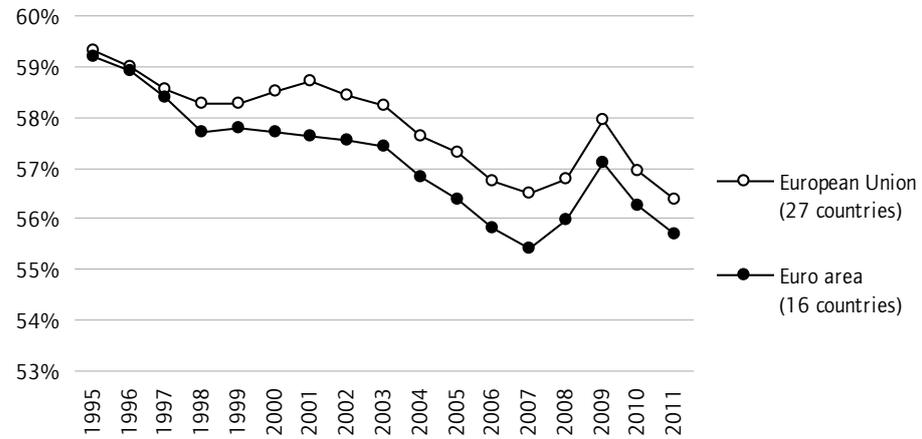
Labour share of income during the crisis

The labour share of income (also termed wage share and real unit labour costs), gives the share of GDP that is gained by workers in terms of overall compensation. This includes both wages and salaries, and also any social benefits that employers must pay on behalf of workers. As Figure 9 shows, there has been a long-term downward trend in the labour share of income, but an increase since the crisis hit. This is typical in recessions as output tends to fall faster than wages. Rebalancing labours' share of income will help to promote consumer demand without the need for borrowing, and so aid the economic recovery. The question is whether labour can maintain its share during the hoped-for upswing.

Figure 10 compares labour's share of income at the time when the financial crisis hit and one year on. In general, at the beginning of recessions firms' profits fall faster than wages or employment, leading to an increase in labour's share of income (Vermeullen, 2007). As the recession continues increased unemployment and slow wage growth tend to reduce labour's share of income. As can be seen from the above graph, in most countries the labour share of income has increased. However, in Latvia, one of the leading

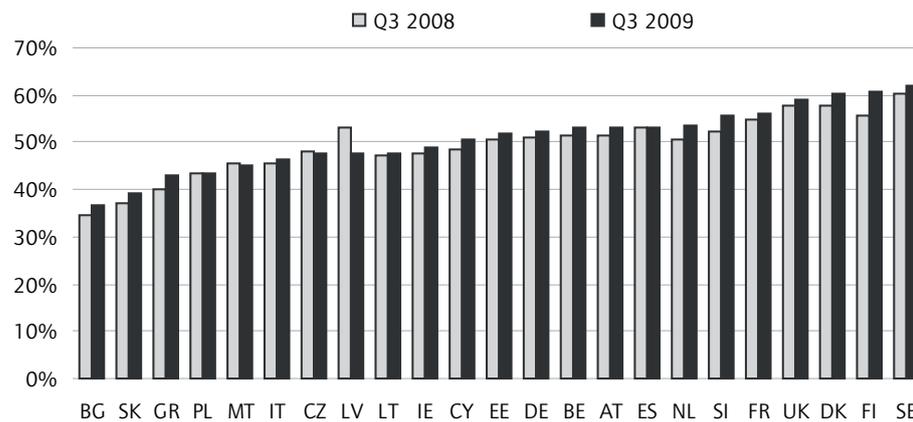
countries in the recession, the labour share has already begun to decrease as wages have been cut massively. Countries such as Spain, Ireland and Lithuania, whose recessions began before the financial crisis, show relatively small increases in the labour share. The effects of unemployment and lower wages are already serving to reduce the labour share of income following an initial increase.

Figure 9 Labour share of income



Source: AMECO database

Figure 10 Labour share of GDP during the crisis



Source: Eurostat Quarterly National Accounts and Eurostat Labour Force Survey - Detailed Quarterly Survey Results

Several explanations for the long-term downward trend in the labour share have been given, such a decrease in the bargaining power of labour due to increasing globalisation. A European wide policy that improves labour's position would be necessary in order to improve its share into the longer term.

Productivity

Table 1 decomposes changes in nominal unit labour costs across Europe from the third quarter of 2008 to the third quarter of 2009. Nominal unit labour costs show how much is paid to labour (in terms of wages and other social contributions made by the employer) in order to produce one unit of output. Increases in nominal unit labour costs can be decomposed into increases in nominal compensation to workers and decreases in productivity (in terms of real output per worker). As can be seen for the EU as a whole, compensation per worker has decreased in nominal terms. This is as, despite a nominal increase in wages and salaries per hour, workers are working fewer hours as a result of the crisis. For the EU average, productivity in terms of real output per worker has decreased.

Table 1 Changes in prices, productivity and unit labour costs (Q3 2008 to Q3 2009)

Percentage change Q3 2008-Q3 2009	Nominal compensation per worker	Price	Real unit labour cost	Real output per worker	Nominal unit labour costs
AT	1.06	1.80	2.00	-2.74	3.81
BE	2.17	0.84	3.25	-1.92	4.09
BG	7.47	2.63	6.38	-1.54	9.01
CY	-0.38	-1.14	3.69	-2.93	2.55
CZ	-1.81	2.39	-0.87	-3.33	1.51
DE	1.38	1.98	2.64	-3.24	4.62
DK	1.95	0.33	4.45	-2.83	4.78
EA16	1.74	0.75	2.32	-1.34	3.07
EE	-5.37	-1.51	3.15	-7.02	1.64
ES	2.70	-0.59	-0.43	3.73	-1.02
EU27	-0.92	-1.48	2.34	-1.79	0.87
FI	2.58	0.54	7.78	-5.74	8.32
FR	1.50	0.34	2.45	-1.29	2.79
GR	5.04	1.00	5.43	-1.39	6.43
IE	1.51	-3.31	2.11	2.71	-1.20
IT	1.45	1.88	1.92	-2.35	3.79
LT	-14.45	-6.07	-0.71	-7.67	-6.77
LU	-3.66	-0.23	4.83	-8.26	4.60
LV	-17.98	-3.90	-10.22	-3.87	-14.12
MT	-2.19	1.97	-2.03	-2.14	-0.05
NL	1.00	-1.41	5.70	-3.29	4.29
PL	5.41	4.04	0.39	0.98	4.43
PT	4.24	1.02	1.94	1.29	2.95
SE	2.65	1.82	3.39	-2.56	5.21
SI	4.48	0.69	9.99	-6.20	10.68
SK	5.24	-0.92	6.84	-0.68	5.92
UK	1.18	1.62	2.70	-3.14	4.32

Source: Eurostat and own calculations.

Number of employees and those in employment are taken from the Labour Force Survey. This can give slightly different values for compensation per worker, and therefore nominal unit labour costs to those reported by Eurostat (which rely upon employment figures taken from the National Accounts). However, as employment figures from National Accounts were not available for all countries, Labour Force Survey figures were used. The GDP deflator was used for the price index. Data for Hungary and Romania is unavailable.

Under normal circumstances output per worker can be expected to increase due to improvements in technology. However productivity has decreased as workers are now working less hours, and demand for the workers' output has decreased even more. This productivity decrease reflects labour hoarding and is only temporary, because, either the recession continues and firms will either lay off workers, which will have the effect of increasing output per worker; or an economic recovery and increased demand will lead to workers working more intensively or longer hours to meet orders. As firm profits tend to adjust faster than staffing levels and wages, real unit labour costs (which are identical to nominal unit labour costs minus the change in prices and equivalent to the labour share of income) have increased in most countries. Latvia is the most obvious exception however, showing that here workers are bearing the brunt of the crisis. Latvia was also one of the first EU countries to enter recession, so much of the cyclical decrease in output per worker had happened in the period prior to that which Table 1 covers. For the EU as a whole, nominal unit labour costs have increased, though for the countries that were hit first by the downturn (the Baltic nations, Ireland and Spain) nominal unit labour costs have decreased. Only for Ireland and Spain however has this decrease in nominal unit labour costs been driven by increases in productivity.

Overall, developments in business sector wages, minimum wages, the labour share of income, and productivity have varied greatly from country to country. The countries that were hardest hit by the recession have shown the largest decreases in wages. There has been a general fall in productivity and increase in the labour share, but this can only be expected to be temporary.

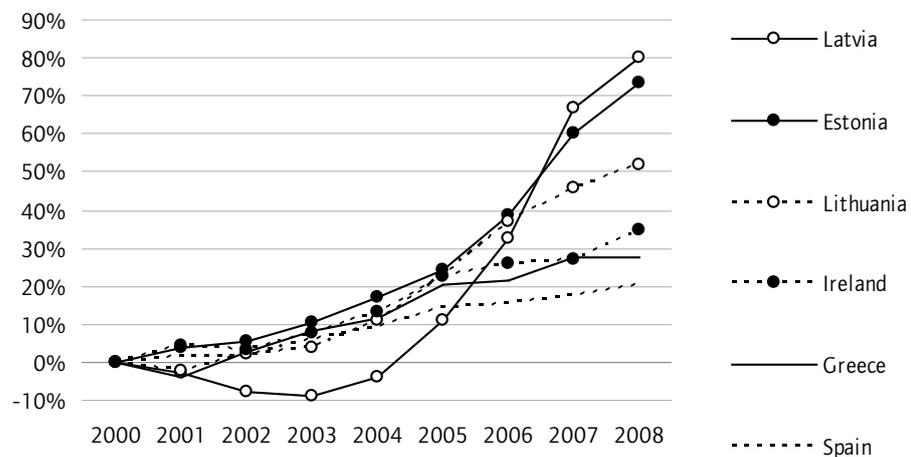
4. International competitiveness and wages

Two main arguments have been put forward in favour of pursuing a policy of wage cuts.

The first is to cut public sector wages in order to improve the public finances. Some countries that had experienced credit fuelled booms prior to the recession had accrued structural deficits. Structural deficits are where, though a government may have a budget surplus in the current period, over a whole economic cycle the combination of taxes and spending are not sustainable. These structural deficits occurred because the credit boom gave the illusion that countries were on a sustainable growth path, and governments cut taxes or increased spending above a sustainable level. Since the credit bubble has burst, affected governments are trying to close the deficit by increasing revenue (through increasing taxes) or by cutting spending and public sector wages. Governments must be careful not to further reduce demand by cutting the wages of those on lower incomes, who tend to spend a higher proportion of their income. It is necessary for affected governments to broaden the base of taxation beyond pro-cyclical generators of revenue and to improve the effectiveness of tax collection. Also reductions in structural deficits can be partially offset by increasing capital spending, thereby increasing a countries' potential for long-term growth.

The second main reason given for reducing wages is to ensure a competitive 'simulated devaluation'⁹. Before the impact of the financial crisis several countries were experiencing a credit boom which led to higher prices resulting in lower cost competitiveness. Easy access to credit boosted demand and allowed firms to charge higher prices than would otherwise be the case. Prior to the introduction of the Euro, when countries were affected by a recession one available policy option was currency devaluation. This policy was followed by several European countries in the early 1990s and in 1992 led to the collapse of the European Exchange Rate Mechanism (ERM). When a country devalues its currency the price of its exports in foreign markets falls. This causes its exports to be more attractive relative to competitors, leading to increased employment in the export sector. The price of imports also rises, so consumers spend less on imports (perhaps substituting imports for domestically produced goods) as their real incomes decrease. With a 'simulated devaluation', rather than actually devaluing the currency, its effects are simulated by reducing all prices and wages in the economy the real rather than the nominal exchange rate is reduced). The aim is that by reducing nominal unit labour costs (NULC), and the price of other inputs, firms will be more price competitive, boosting net exports and employment in the export sector. Even where international competitiveness is not identified as the cause of a country's problems, by promoting growth and employment gaining competitiveness can form part of the solution.

Figure 11 Change in nominal unit labour costs relative to Germany



Source: Eurostat National Accounts, Eurostat Comparative Price Levels and author's calculations

It is true that many countries that are now suffering the most from the global recession, lost competitiveness in terms of NULC. Figure 11¹⁰ shows changes

⁹. See Weisbrot and Ray (2010) for a detailed description of Latvia's simulated devaluation and its effects.

¹⁰. Eurostat's Comparative Price Levels are used as the price index. This is in contrast to the previous section where the GDP deflator was used as the price index. In this section as direct comparisons across countries are being made, comparative price levels are the appropriate price index. Nominal unit labour costs are calculated by multiplying the labour share of income (source: AMECO) by Comparative Price Levels (see also below).

in NULC for six countries since the year 2000 relative to those in Germany. Although only 16 EU countries are part of the Eurozone, in total 21 EU countries have currencies tied to the Euro (the 16 Eurozone countries plus Bulgaria, Denmark, Estonia, Latvia and Lithuania). Of the 21 EU countries considered, Germany has reduced unit labour costs the most, and so serves as a useful benchmark. Nominal unit labour costs reflect the labour cost of producing one unit of output and thus are the best indicator of wage competitiveness¹¹. They account for the fact that countries that have high labour costs generally also have high productivity. Figure 11 only shows the countries that are worst affected by the current crisis. As can be seen, the Baltic countries in particular suffered a loss in nominal wage competitiveness relative to Germany.

However, it is important to decompose the changes in NULC in order to understand what has driven the change. Nominal unit labour costs are calculated as

$$\text{Nominal compensation} \times \frac{\text{price index}}{\text{nominal output}} \times \text{adjustment}$$

where the adjustment is to account for the numbers of self-employed in the economy. As can be seen, NULC depend not just on workers pay (which is determined in the labour market) and output, but also on the price index for the economy (which is determined by firms in the product market). This formula can be manipulated to present NULC as:

$$\text{Labour share} \times \text{price index}$$

and the labour share can be decomposed as:¹²

$$\text{Labour share} = \frac{\text{real compensation}}{\text{employees}} \times \frac{\text{employment}}{\text{real output}}$$

Changes in the labour share can be due to changes in the bargaining power of labour, or possibly due to increased use of capital in the economy or capital-biased technical change. Using the above decompositions it is possible to see what has driven changes in NULC, relative to those of Germany.

Table 2 shows how much changes in the labour share of income account for changes in competitiveness relative to Germany for six countries. Unfortunately only data on comparative price levels up to 2008 is available¹³.

For every country, less than 40 per cent of the decline in competitiveness, as expressed by changes in the NULC relative to Germany, was due to workers gaining a greater share of output (again relative to Germany). In Greece workers actually got a smaller share of output in 2007 than in 2000, but this decrease was not as large as the decrease in Germany. The first column shows

¹¹. A discussion on unit labour costs and competitiveness is given in Havlik (2005).

¹². Employment = Employees + Self Employed

¹³. The decomposition is from 2000 to 2007 so as to avoid distorting the analysis by including the temporary increase in the labour share of income that is due to the cyclical downturn.

that, relative to Germany, there were strong increases in real compensation (wages plus social contributions paid by employers) per worker, and this can account for a large proportion of the loss of NULC competitiveness. However, with the exception of Spain, these wage increases were largely funded by increased worker productivity. Relative to Germany, only Spain did not see an increase in productivity. Greece recorded an increase in output per worker that was 6.25 per cent greater than Germany from 2000 to 2007. Combining the first two columns shows the contribution of the labour share to changes in NULC, and the final column shows the contribution of the product market. This shows that any loss in competitiveness was driven more by the higher prices charged by firms rather than workers demanding a higher share of output.

Table 2 **Percentage contribution to change in nominal unit labour costs**
(relative to Germany, 2000-2007)

	Real compensation per employee	Real output per employment (productivity)	Labour share	Price
Estonia	95.97	-69.05	26.92	73.08
Greece	48.04	-24.93	23.11	76.89
Ireland	68.65	-30.70	37.95	62.05
Latvia	78.74	-47.28	31.46	68.54
Lithuania	112.43	-85.98	26.44	73.56
Spain	6.84	4.46	11.30	88.70

Source: Eurostat National Accounts, Eurostat Comparative Price Levels and authors own calculations

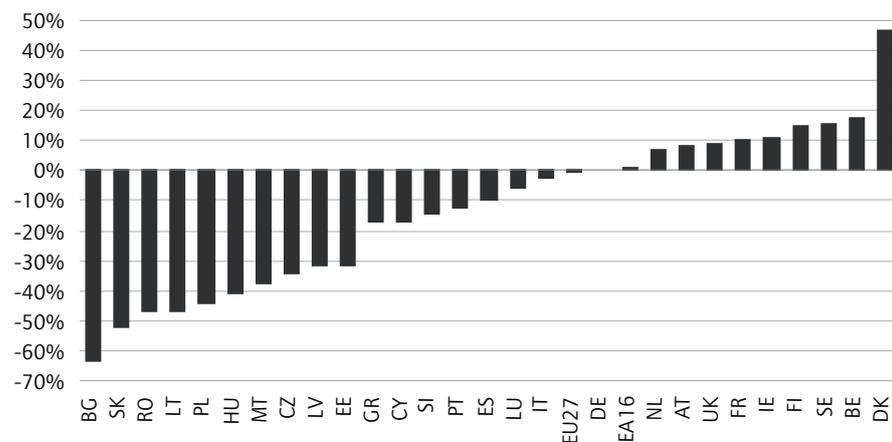
Using NULC to assess international competitiveness is hugely problematic, and it is important to understand why firms care about NULC¹⁴. Nominal unit labour costs are relevant to exporting firms as it gives the labour cost of producing one unit of output. The price they receive for their produce is determined on a world market. If exporters in a country have lower NULC this gives them a cost advantage, allowing them to lower their price and gain market share or earn a higher profit per unit produced. In contrast, firms that sell directly to the domestic market (even multinational firms such as McDonalds or Lidl) are less concerned by NULC. This is as a high price level in a country, which leads to high NULC, also allows domestic firms gain a high price for their output. Such firms are likely to be interested in the share of output they take as profits rather than the NULC. An uncompetitive domestic sector can affect the competitiveness of the export sector. This is as a high price level for non-labour inputs (such as rent, electricity, material inputs or legal fees) will affect the profitability of export firms as they find it more difficult to pass such costs onto consumers.

Unfortunately, NULC statistics refer to the whole economy rather than just the export sector. This can lead to inaccurate comparisons of export sectors and international competitiveness across countries, as the export sector is typically the most productive sector of an economy. This is highlighted by

¹⁴Wages are just one dimension of international competitiveness, and absolute wage levels are not included in the World Economic Forum's '12 pillars of competitiveness' (Sala-I-Martin, et al, 2009, pp4).

Figure 12. As can be seen, despite increases in NULC since 2000, the Baltic countries still have NULC 30 to 50 per cent below those of Germany. Also, as shown in Table 1, NULC have declined further in the Baltic countries, while in Germany they have increased. Figure 12 also shows that NULC in Bulgaria are roughly one quarter that of Denmark, but it would be wrong to suggest Bulgaria is four times more competitive than Denmark.

Figure 12 Percentage difference of nominal unit labour costs relative to Germany (2008)



Source: Eurostat National Accounts, Eurostat Comparative Price Levels and authors own calculations

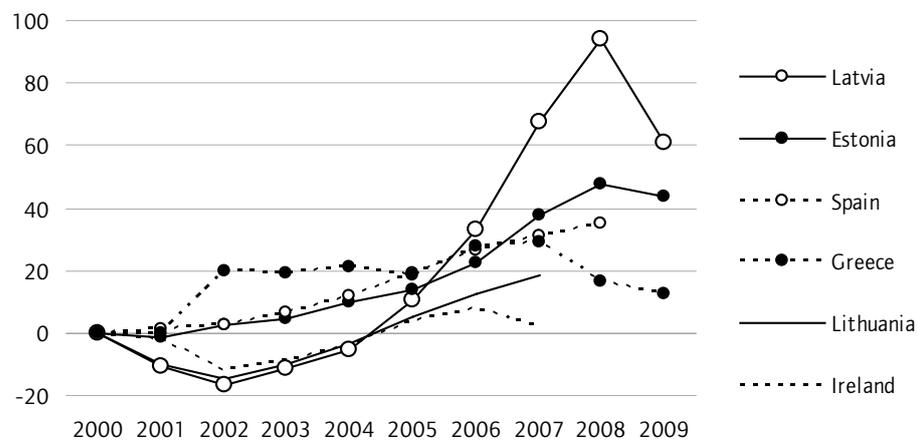
Due to a lack of data it is not possible to measure changes in NULC for the export sector. However it is possible to use the manufacturing sector as a proxy. Figure 13¹⁵ tells a different story to Figure 11 (it should be noted that Figure 13 has data to the year 2009). Between 2000 and 2007, the peak of the credit boom, in Ireland NULC had remained stable relative to Germany. In contrast, NULC for the whole economy had deteriorated 26 per cent relative to Germany. For Estonia, Greece, Ireland and Lithuania; increases in manufacturing NULC, which is a greater determinant of international competitiveness, were below that of the economy as a whole.

Table 3 decomposes the changes in manufacturing NULC. As different price indices are used for calculating real compensation per worker and real output per worker (Eurostat's purchasing power parity and the price deflator for the manufacturing sector respectively), this allows for a 'pseudo labour share' for the sector to be calculated. This is as workers are concerned with the price for the total basket of goods and services they purchase, and not just the price of manufactured goods. The results for Estonia are interesting. Although real wages in the manufacturing sector increased 122 per cent more than manufacturing NULC relative to Germany, relative productivity increased

¹⁵ Unfortunately, as sectoral comparative price indices are not available it is necessary to use the price index taken from National Accounts, which limits the comparability with Figure 11. Price data for Ireland and Lithuania is available to 2007 and for Spain to 2008.

by an even larger amount. Real wages failed to keep pace with productivity improvements. The results for Ireland should be treated with caution given the small changes in relative NULC for Ireland. In Spain real wages actually decreased. However, productivity relative to Germany decreased by a greater amount. For all countries changes in the price index, rather than workers gaining a greater share of output, explain the majority of the increase in relative NULC.

Figure 13 Percentage change in manufacturing nominal unit labour costs relative to Germany



Source: Eurostat Annual National Accounts and authors own calculations.

Table 3 Percentage contribution to change in manufacturing nominal unit labour costs (relative to Germany, 2000-2007)

	Real compensation per employee	Real output per employment (productivity)	Pseudo labour share	Price
Estonia	122.08	-128.73	-6.64	106.64
Greece	12.64	9.59	22.22	77.78
Ireland	440.22	-1211.09	-770.87	870.87
Latvia	19.58	-30.97	-11.39	111.39
Lithuania	190.39	-213.30	-22.91	122.91
Spain	-16.69	63.98	47.29	52.71

Source: Eurostat National Accounts and Eurostat Purchasing Power Parities

The policy implications are clear. As changes in competitiveness have been dominated by the product market, any attempts to improve international competitiveness should focus on non-wage costs to firms. Also, as the above analysis focuses on relative changes in labour costs, there is scope for some EU countries, such as Germany to increase wages, so as to boost domestic demand. Despite the international nature of the financial crisis, different factors are at the root of problems in different countries. For example the Greek fiscal problems stem mainly from a low capacity for collecting taxes, while in Ireland most of the problems stem from the banking sector and a reliance on pro-cyclical taxes. Labour market issues did not spark the crisis in any country and wage cuts are not a panacea. At best they are a stop gap measure. At worst

they further deflate the economy, and delay the implementation of structural reforms to taxation systems.

5. Conclusion

Overall, wages in Europe have been affected by the recession which, in real terms, began for most countries before the impact of the financial crisis. In most countries workers successfully resisted, at least until the last quarter of 2009, downward pressures on real hourly wages, though many workers have become either unemployed or are working less hours.

Countries that have entered the recession relatively early, and have pursued a policy of reducing nominal prices and wages (simulated devaluation) in order to regain international competitiveness, show what may happen as pressure is put on Portugal, Greece, and Spain to cut public sector wages in order to improve international competitiveness and reduce the government deficit. Though some countries have structural deficits, this can in part be addressed by increasing taxes and targeting the pay of higher earners in the civil service rather than the lower paid. As lower paid workers tend to spend a higher proportion of their incomes cutting their pay will serve to further remove demand from the economy. The negative effects on demand of reducing structural deficits can be partially offset by increasing government investment in productive infrastructure. This would increase the capacity of the economy to grow, thereby in the medium term improving the capacity of governments to repay debts, and also ease pressure on the labour market.

In a 'simulated devaluation' rather than actually devaluing the currency, its effects are supposedly simulated by reducing all prices and wages in the economy. In practice however it is wages that are targeted by policy makers rather than other prices such as prices for consumer goods, or intermediate inputs to businesses such as rents and energy costs. So whereas with an actual devaluation the burden is spread across the economy (though borne most by those who spend a large proportion of their income on imports) with a simulated devaluation it is workers who bear the greatest burden. As workers tend to spend a higher proportion of their income than other groups, targeting workers incomes will suppress domestic demand to a greater extent than an actual devaluation, exacerbating the deflationary pressure.

Maintaining the incomes of workers is essential for economic recovery. Some European countries, such as Germany, have dangerously unbalanced economies which are dependant on exports. Higher worker incomes can help to maintain and increase domestic demand, and so improve the economy. In other countries many workers are in severe debt. Maintaining the incomes of these workers will help them to repay their debts, an important factor for the health of the financial system. It must be remembered that the sub-prime crisis was largely caused by fears that low income workers would not be able to repay their debts. A wage-led economic recovery will be necessary to replace the demand lost due to the bursting of the credit bubble. Maintaining workers

incomes also benefits financial stability as workers will be able to continue to repay loans for housing and other items. Just as in the 1930s Europe suffered from the 'beggar thy neighbour' policies of competitive currency devaluations, Europe now runs the risk of competitive 'simulated devaluations' where wage reductions in one country reduce the ability of other countries to export.

Future developments in the labour market depend on how the overall economy develops. If the recession continues to be prolonged high unemployment could lead to more downward pressure on wages and lead to a deflationary spiral. So far the greatest impact of the recession has been on working hours and employment, however if demand does not increase soon there will be greater pressure to reduce wages. While in an economy such as the US this is less of a threat due to the option of quantitative easing, in the Eurozone the use of this option is much more difficult. Should the economy recover soon then there should no longer be downward pressures on wages, and wages in the Baltic countries should recover as their economies as a whole recover.

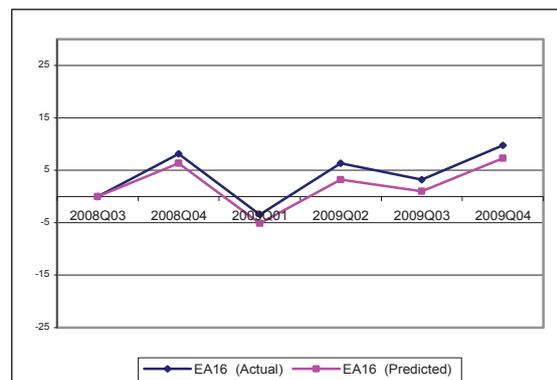
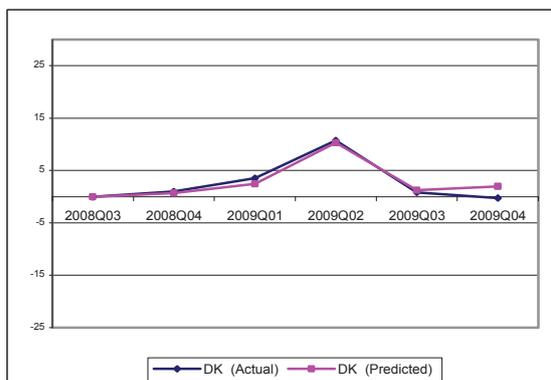
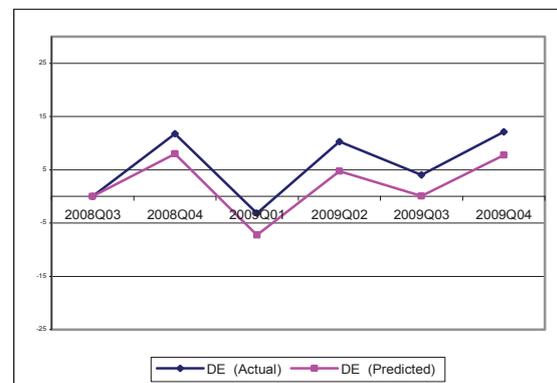
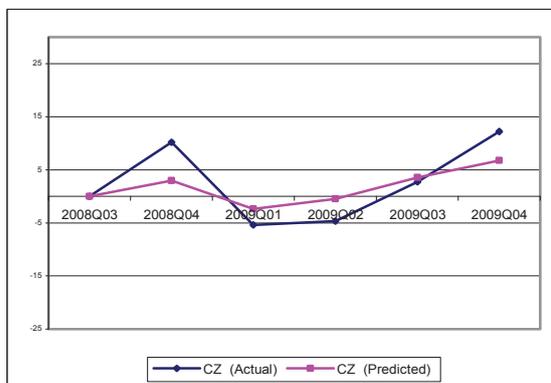
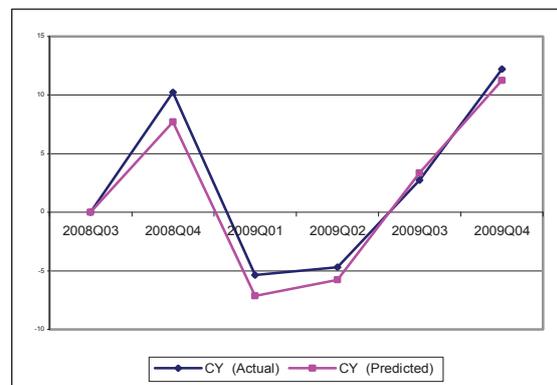
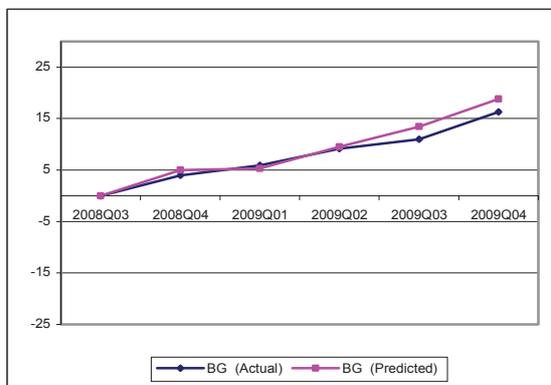
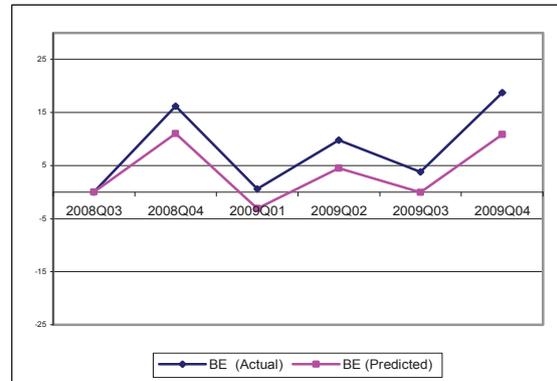
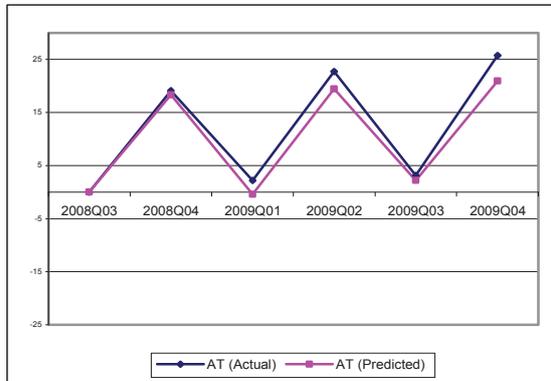
The increase in labour's share of income can only be expected to be temporary, regardless of whether or not there is an economic recovery. If there is an economic recovery profits will increase faster than wages, increasing capitals share. If the economy does not recover we can expect higher unemployment and lower wages will reduce labours share. Obviously the former situation is more favourable, as it is better for the reduced labour share to be due to an increased size of the overall economy. However, workers will have to be vigilant to try to gain a greater share of a hopefully growing economy.

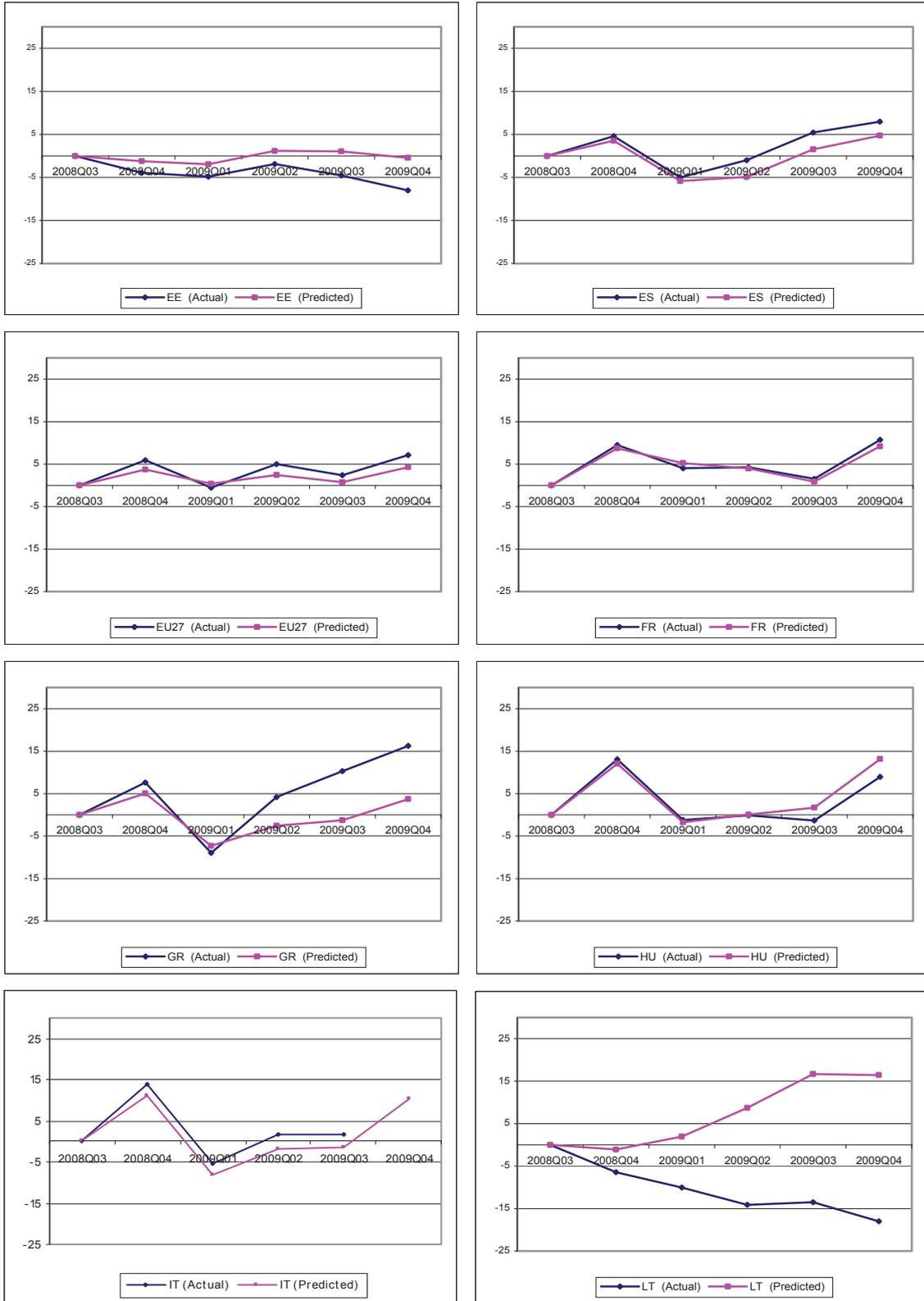
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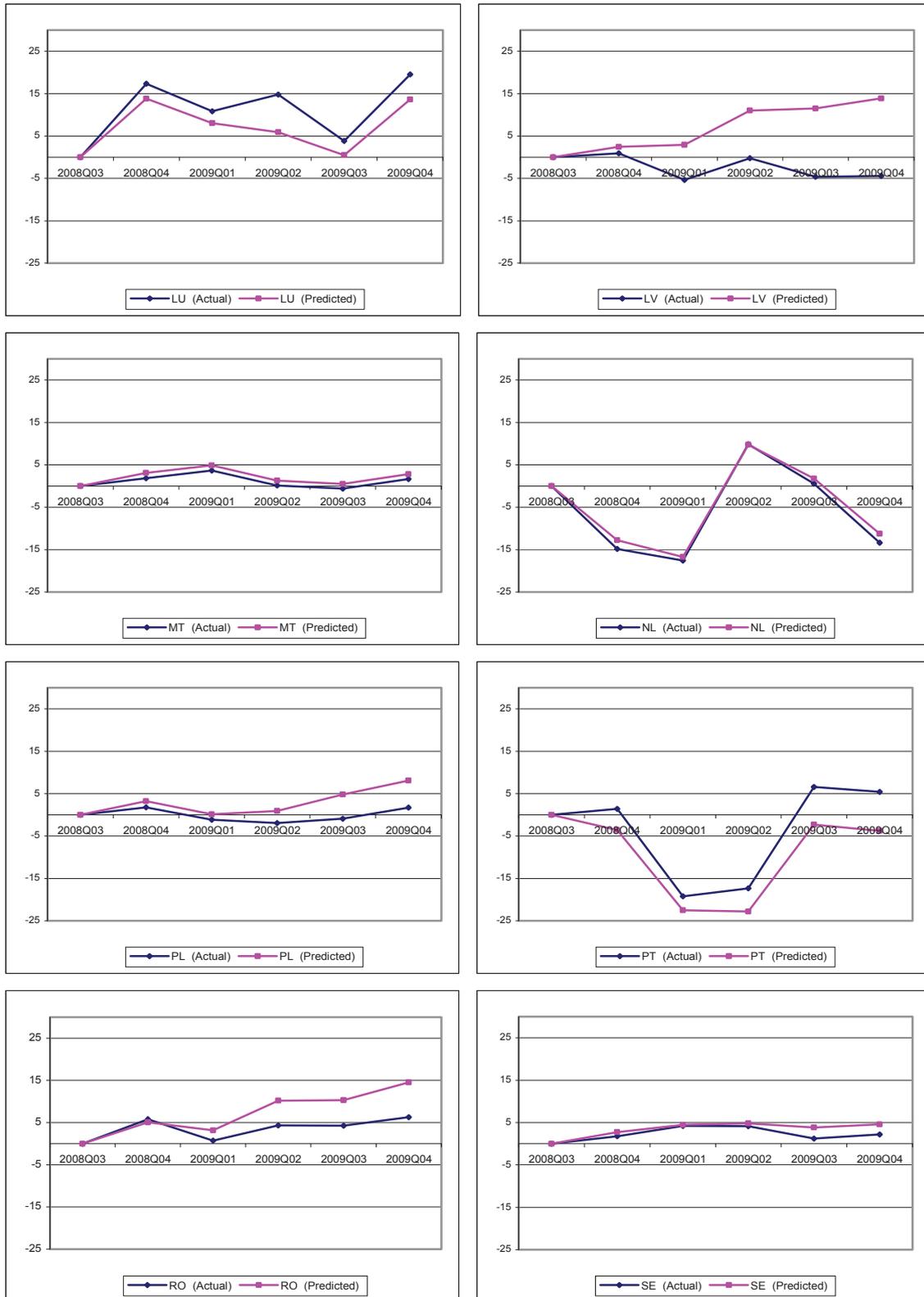
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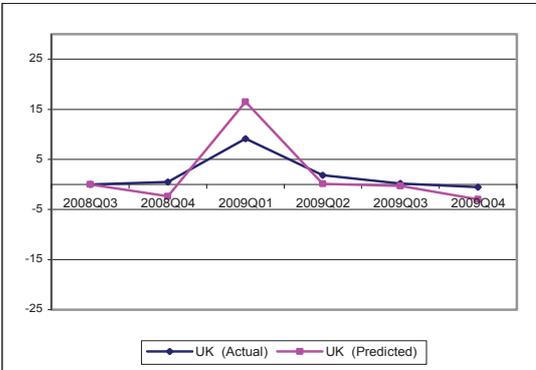
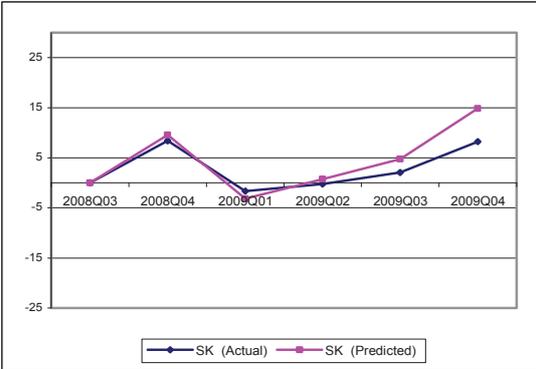
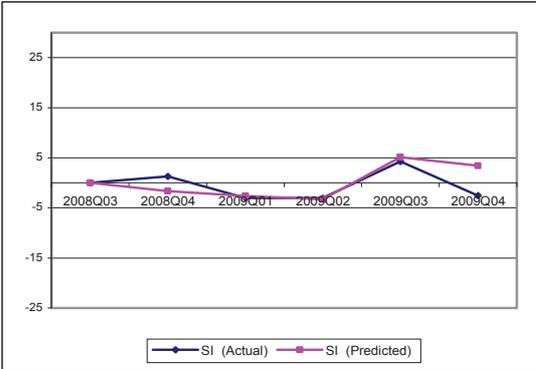
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**European
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Bd du Roi Albert II, 5
1210 Brussels
Belgium

Tel.: +32 (0)2 224 04 70
Fax: +32 (0)2 224 05 02
etui@etui.org
www.etui.org