

The future of the welfare state: paths of social policy innovation between constraints and opportunities

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**Institutional features of labour markets:
how do they affect the labour market adjustment
to the economic crisis in different EU countries?**

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Institutional features of labour markets: how do they affect the labour market adjustment to the economic crisis in different EU countries?

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Introduction

One of the key questions in the current economic crisis is the effect that declining output is having on the labour market. What institutional factors will the size and the speed of this response depend on and to what extent will this differ between countries?

This paper examines the empirical outcomes for 25 EU member states of the crisis so far (section 1). It then examines for a selected group of four countries a range of institutional factors. Countries will be selected with reference to the existing literature and relevant institutional indicators to generate a sample that exhibits variation in the degree of external flexibility and the design of unemployment insurance systems (section 2).

Two main hypotheses will be tested empirically:

- Employment in countries characterised by a high degree of external labour market flexibility (use of temporary agency workers, low employment protection legislation (EPL), etc) is expected to react more sensitively to the contraction of economic output.
- The configuration of the welfare state is expected to mediate this effect: Countries with unemployment insurance systems that include strong active components aimed at labour market attachment (in particular short-time working allowances) are expected to see a reduction in the unemployment response to the downturn.

1. European labour market performance – what do the data tell us about comparative performance?

1.1 The linkages between output, employment, unemployment and labour market institutions and structures

Before considering in detail the empirical relationships between declining output and labour market trends in the different European countries in the 2008-9 economic crisis, it will be useful to set out the conceptual links between the main economic and labour market variables. Although these linkages work more or less symmetrically in both directions, we will focus on the case of a recession, that is *falling* economic output and consider the *downward* pressure on employment and *upward* impact on unemployment. Overall we can identify three sets of factors that constitute ‘buffers’ between falling output and rising unemployment.

All the goods and services produced in an economy in a given period, i.e. economic output, are produced by combining inputs using given quantities of human labour and capital. The rate of economic growth is the sum of the rates of growth of the volume of labour used (total hours worked) and of the productivity of a unit of labour (output per working hour). This means that a fall in output will be associated with a proportional fall in labour input if the rate of hourly productivity growth remains constant.

Conversely, this means that the elasticity of labour input to economic output, in our context the extent to which a fall in output is reflected in a fall in working hours, depends on the extent of changes in the rate of productivity growth. These changes constitute the first of the three ‘buffers’ between falls in output and subsequent rises in unemployment. Empirically, productivity is pro-cyclical, i.e. productivity growth falls in a recession as there are lags between falls in output and firms decisions to lay-off workers or reduce their working hours, workers are assigned not directly productive tasks such as maintenance or training etc. This buffer we can call the ‘hourly productivity buffer’.

The second buffer comes in the form of changes in the average number of hours worked per worker. At the limit a recession-induced decline in the number of working hours by, say, 10% could take the form of a 10% reduction in average working hours, leaving the number of employed persons unchanged. Reductions in average working hours take the form of reduced overtime and various forms of more or less voluntary ‘work-sharing’, such as compulsory holidays and short-time working schemes. We can term this the ‘average working hour buffer’.

Whereas the first two buffers are located between output and (headcount) employment, a third buffer mitigates the effect of the fall in the number of persons in employment on the rise in unemployment. This third buffer works through a number of measures and processes, notably government programs that provide training to those losing their jobs, disability and early-retirement programs that essentially redefine the status of the de facto unemployed, and individuals withdrawing, more or less voluntarily, from the labour force into ‘inactivity’ (unpaid housework, education, etc.), and thus no longer actively seeking paid employment.¹ In addition, the size of the working age population may also change due to inward or outward migration or for demographic reasons².

The relationships described verbally in this section can be expressed mathematically in simple equations (see appendix).

The core purpose of this study is to examine the effectiveness of these three sets of buffers in different European countries in mitigating the potential unemployment-raising effect of a given fall in output. On this empirical basis a more normative discussion can be made of the different labour market and other institutions in the different countries responsible for these effects. It should be noted that we are concerned only with the ‘simultaneous’ determination of output, employment and unemployment. The size of the output loss is taken as given. We therefore do not explicitly consider the – in policy terms very important – question of whether labour market institutional buffers, by reducing the extent of the rise in unemployment have

¹ Throughout this article we use, to ensure comparability, standardized Eurostat definitions of unemployment. These are based on survey responses and require that the respondent reports having actively sought work in the four weeks prior to the survey. Typically levels differ substantially from national administrative data based on those claiming various unemployment-related benefits. However, the rates of change – in which we are interested here – tend to move broadly in parallel.

² Demographically induced changes in the working age population is largely neglected in this analysis because it is a slow-moving variable and not noticeably affected by short-run, crisis-induced factors.

feedback effects that stabilize the levels of domestic demand and thus serve to reduce the extent of output falls in a dynamic sense.

1.2 Cross country comparison of labour market performance in the 2008/2009 recession

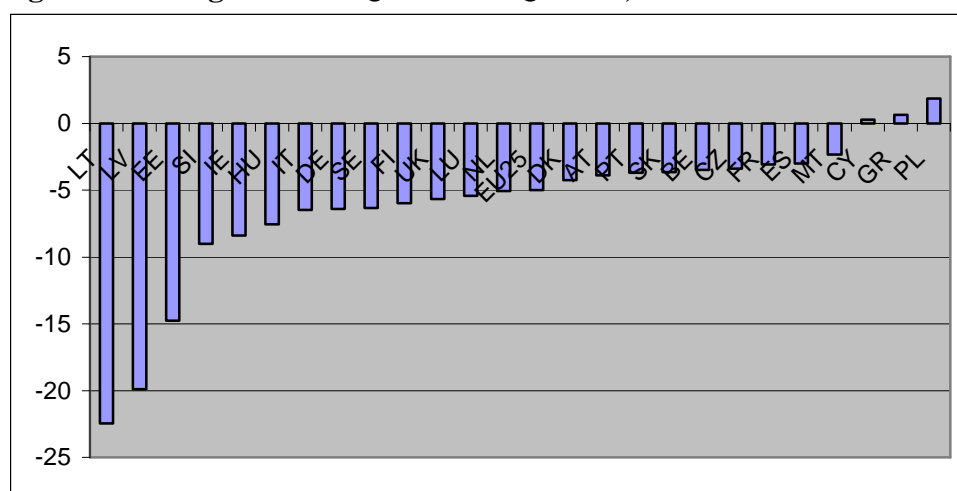
This section provides an overview of how the current economic crisis has affected the different European economies in terms of the impact on output, and the knock-on effects, influenced by the specific institutional frameworks, on employment and unemployment. Comparable Eurostat data are available for most of the European countries. Unfortunately employment data are currently not available for the second quarter of 2009. A number of countries also have not yet reported GDP data for the second quarter. No timely and comparable working hours data are available. This means that in this section we cannot discuss the second ('average working hour') buffer. We focus, then, on the output employment purely in terms of head-count. (We return to the average working hour issue in the national case studies below.) We then address the extent to which the fall in employment translates into rising unemployment. In each case we begin by looking at all the European Union countries for which data is available for the variable in question. As a prelude to the country studies in the next main section, a brief overview comparing the four countries is also provided in each case.

1.2.1 Output

In order to make the countries' output trends comparable, the level of real seasonally adjusted GDP in the first quarter of 2008 was set at 100 for each country, and index values calculated for the subsequent quarters. In the majority of countries Q1 2008 marked the GDP peak, although in some cases GDP continued to expand slightly for one or two quarters.

Figure 1 provides an overview of the extent of output changes, with three exceptions losses, for the EU25 countries.

Figure 1: Change in GDP Q1 2008 to Q2 2009, EU 25



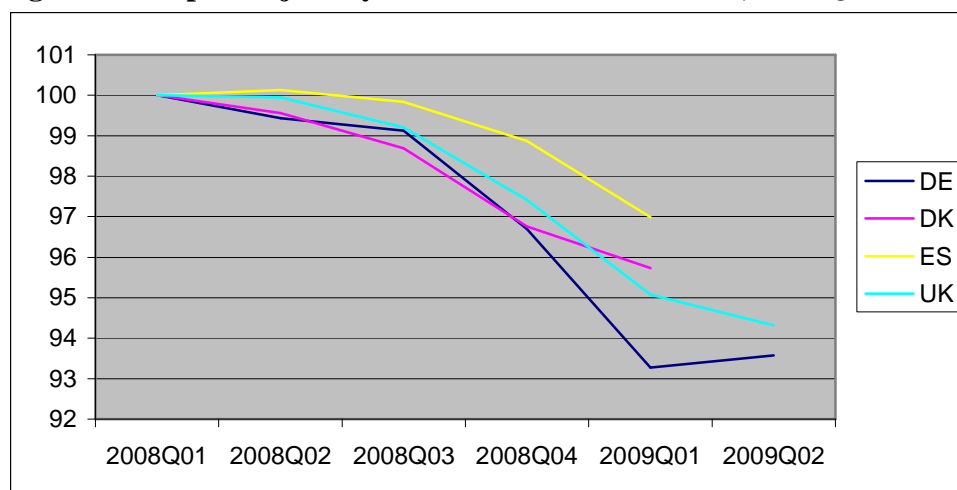
Source: Eurostat National Account Data 2009.

Note: In the case of CZ, DK, ES, FI, IE, IS, LU, PL, PT, SL the figures are for Q1 2008 to Q1 2009.

Huge differences in the scale of the downturn are obvious from the figure. Against the background of an EU25 average output loss of 5%, the collapse in production in the Baltic states is dramatic, exceeding 15% in all three countries. Apart from that, few regional patterns emerge. The other central and east European countries are spread across the distribution, and the Polish economy has conspicuously continued to grow (at least until Q1 09) despite the crisis: Greece and Cyprus have suffered falling output recently but still have a higher level of production than in the first quarter of 2008. Apart from Slovenia, Ireland and Hungary, where output losses exceed -7.5%, the remaining countries are within a fairly tight band of +/- 2 p.p. around the European average.

Figure 2 shows the trajectory of the downturn in the four countries we have selected for a more in-depth analysis.

Figure 2: Output trajectory for four selected countries, 2008Q1 = 100



Source: Eurostat National Account Data 2009.

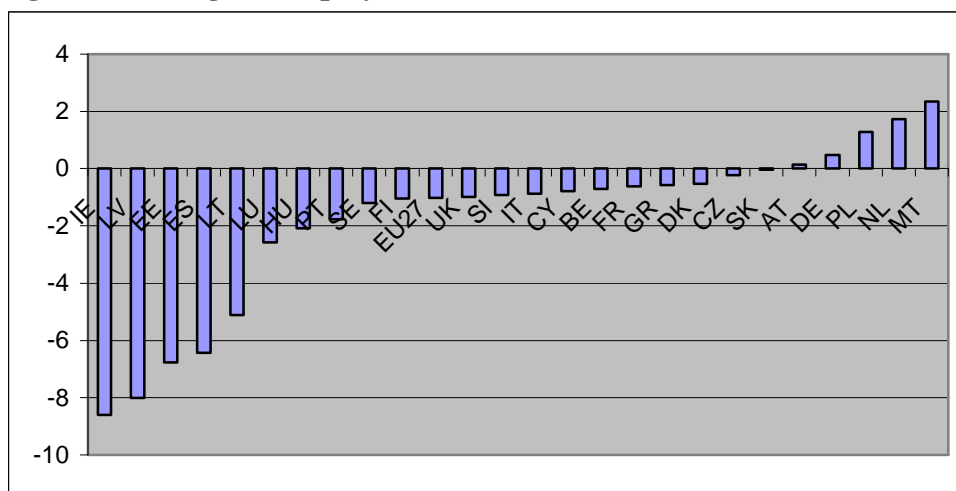
The path of the crisis was initially quite similar in Denmark, Germany and the UK. The start of 2009 saw a further very substantial downward lurch in Germany, however, much more pronounced than in the UK, while Denmark already showed signs of the pace of contraction easing at the end of 2008. In Spain output growth initially continued in positive territory, although it was substantially down on previously prevailing growth rates. By the first quarter of 2009 the overall contraction was ‘only’ around 3%, around half of that in the UK and Germany.

1.2.2 Employment

Figure 3 shows the extent of employment losses in the crisis in EU25 countries between the first quarter of 2008 and that of 2009. Comparing this with Figure 1 above, two main findings stand out. Firstly, as discussed above, the extent of the job losses, measured in numbers of workers, is overall considerably smaller than the loss of output. On average an output loss of 4.7% (EU27, Q108-Q109) translates into an employment loss of ‘only’ just over 1% over the same period. The short run elasticity of employment (in persons) to output is thus less than a quarter in Europe as a whole

(i.e. a ¼% loss in employment for every 1% fall in output). Secondly, the ranking of countries varies substantially from that based on output. Job losses have been greatest in proportional terms in Ireland, with Spain and the three Baltic countries not far behind. A number of countries, including notably Germany, have seen continued employment growth over the period as a whole, despite in some cases dramatic losses of output. Consequently the short-run output-employment elasticities are actually negative in these countries, whereas in Ireland it is around 1 and in Spain as high as 2.

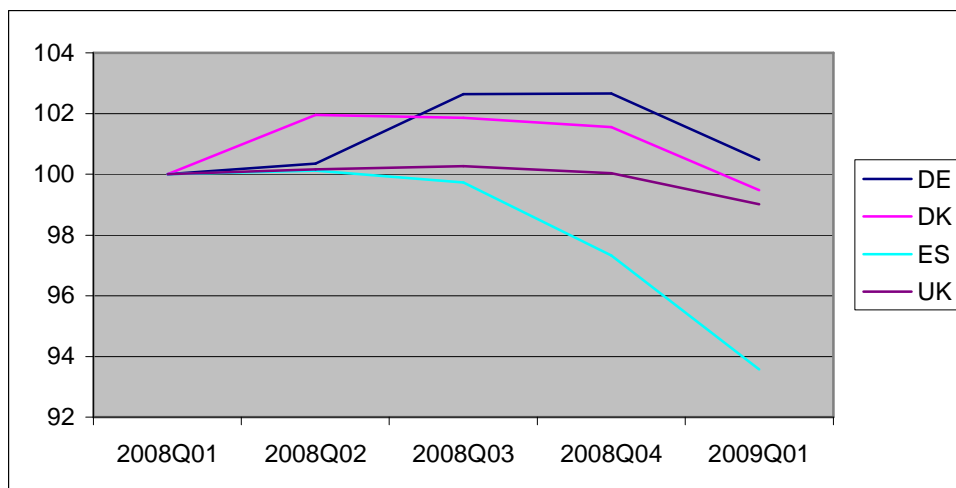
Figure 3: Change in employment, Q1 2008 to Q1 2009, in %



Source: Eurostat Labour Force Survey Data 2009.

This seeming anomaly also emerges from our four-country comparison (Figure 4).

Figure 4: Four-country comparison of employment losses



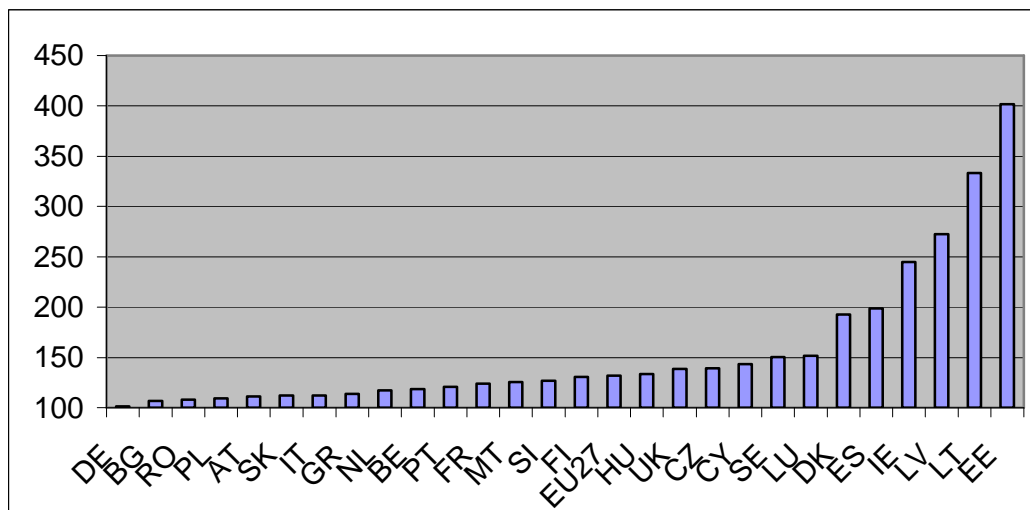
Source: Eurostat Labour Force Survey Data 2009.

The decline in employment in Spain has been very much more pronounced than in the three other countries, and has as noted substantially exceeded its, comparatively modest, pace of output contraction. Germany outperforms the other countries in terms of employment headcount, despite having the sharpest output contraction of the four. With a broadly similar output trend (until the first quarter) employment trends in Denmark were somewhat more favourable than in the UK.

1.2.3 Unemployment

For all but four countries unemployment data are available also for the second quarter of 2009. We see that unemployment has risen compared with its level in Q1 2008 in all European Union countries without exception (Figure 5).

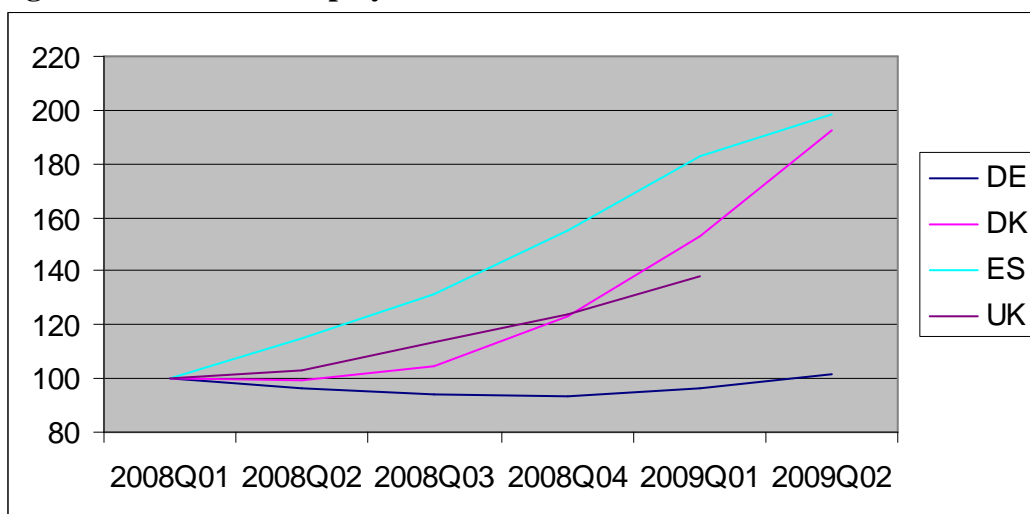
Figure 5: Increase in the number of unemployed, EU27 Q1 2008 = 100



Source: Eurostat National Account Data 2009.
 Note: Q2 2009, except GR, IT, RO, UK: Q1 2009.

In Denmark, Spain, Ireland and the three Baltic States unemployment has exploded, almost doubling in the first two countries and quadrupling in Estonia from its respective initial level. While the European average is around a 30% increase, the rise in unemployment in Germany has been marginal, and has remained below 10% in Bulgaria, Romania and Poland.

Figure 6: Index of unemployment for selected countries



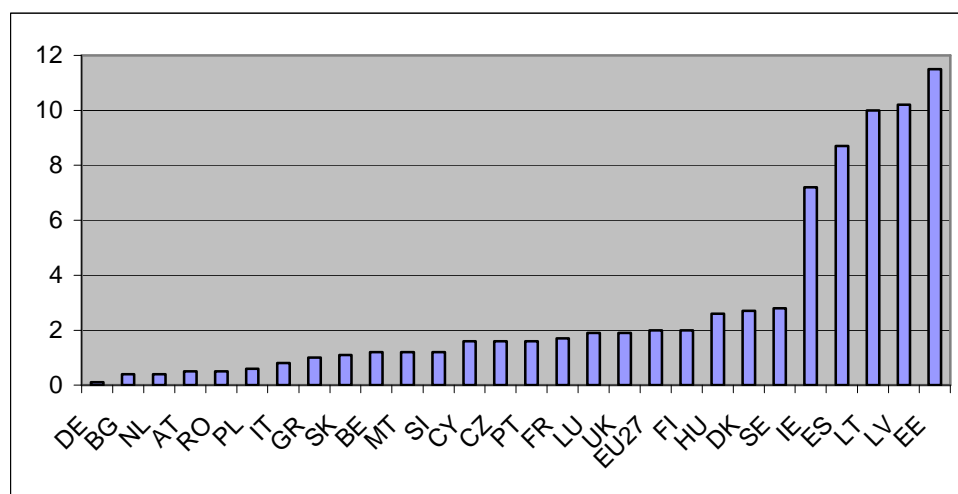
Source: Eurostat National Account Data 2009.

This can be seen from the more detailed chart for our four selected countries (Figure 6). Unemployment in Germany continued to fall throughout 2008, only rising above

its initial level in the second quarter of 2009. By contrast Spain saw a substantial and unbroken increase in the size of the unemployed stock, whereas in Denmark a delayed reaction was seen, with the unemployment rise accelerating over time. The UK is in the middle of this group (Q2 data not available).

The use of an index of the number of persons unemployed might be considered to have the disadvantage for cross-country comparison that it is sensitive to the initial level of unemployment in the country.³ We can avoid this potential problem by considering percentage point changes in (standardized) unemployment *rates* (see also the definitions in the annex). These are shown in Figure 7.

Figure 7: Percentage point increase in the unemployment rate Q1 2008 to Q2 2009



Source: Eurostat National Account Data 2009.

Note: Q2 2009, except GR, IT, RO, UK: Q1 2009.

With the EU average unemployment-rate increase at exactly 2 p.p. there is a rather even distribution starting at the lower end with Germany (a mere 0.1p.p.) up to Finland at the EU27 average. Hungary, Denmark and Sweden have seen substantial increases of between 2.6 and 2.8 p.p. But a huge gap separates these countries from Ireland, Spain and the three Baltics, with increases in excess of a massive 7 percentage points. Overall it emerges that the potential problem of different starting points is not particularly acute in practice: the ranking is broadly similar, with only slight shifts of position whether indices or percentage changes are used (compare Figure 6 above). This is confirmed by the high correlation between the two series (0.94). For some countries, though, the difference matters. A notable case is that the unemployment increase in Ireland is much more substantial in terms of the index than in Spain, whereas in terms of the percentage point increase it is the other way around, reflecting Spain's much higher initial level of unemployment.⁴

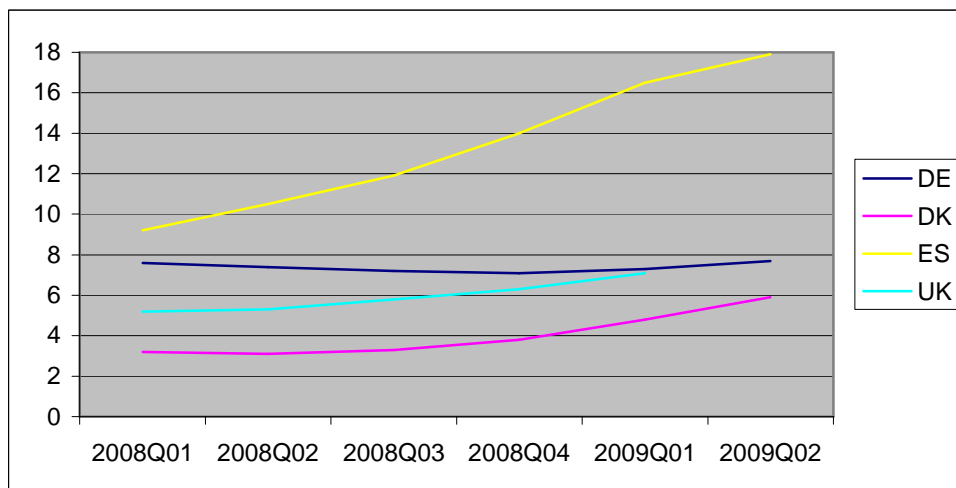
Performing a similar exercise for our four countries we see (Figure 8) again that the starting point needs to be borne in mind but is not actually of decisive importance. Specifically, it shows that the unemployment increase in Denmark, while steep, is

³ In the extreme case of zero unemployment at the start, an increase in unemployment of one person would send the index to infinity.

⁴ The same is true if comparing a pairing such as France and the Netherlands.

from a low base. It also shows that the differential rate of increase in unemployment in the UK (with its lower starting point) has been so great as to bring the unemployment rate up to the German level (although second quarter data are missing for UK). Spain's unemployment performance has been catastrophic on either measure.

Figure 8: Trajectory of p.p. changes unemployment rates in four selected countries



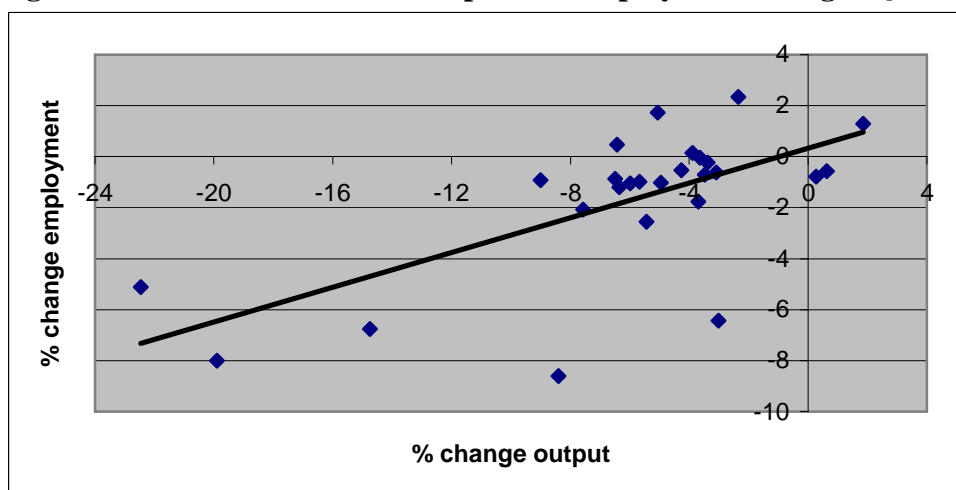
Source: Eurostat National Account Data 2009.

1.3 Correlations and buffers between output, employment and unemployment

We can bring together the analysis of the previous three sub-sections by explicitly comparing output, employment and unemployment outcomes.

As expected, overall there is a positive statistical relationship between output and employment changes. This can be seen from figure 9 which plots output (on the x-axis) and employment changes (on the y-axis) for 25 EU member countries. The correlation coefficient is 0.66.

Figure 9: Correlation between output and employment changes Q1 08 to Q1 09

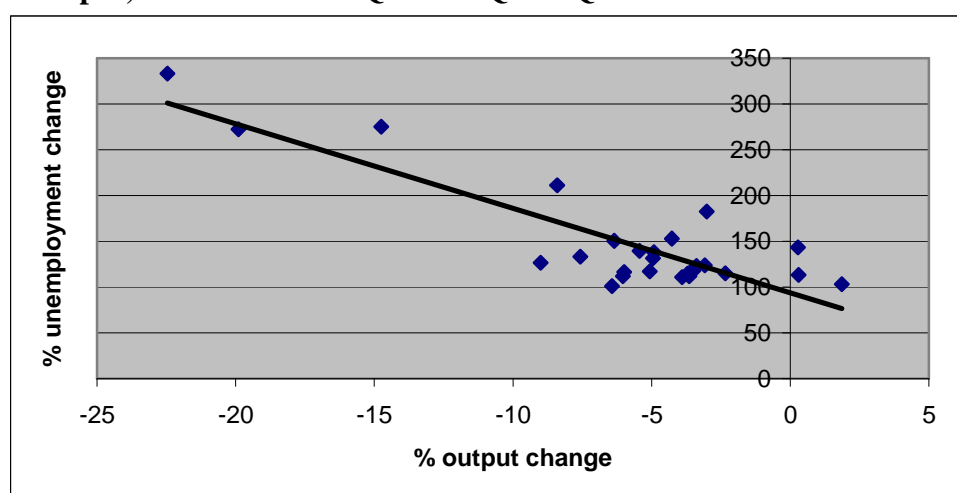


Source: Eurostat National Account and Labour Force Survey Data 2009.

Countries substantially below the trend line have a high elasticity of employment to output. Notable are Latvia, Estonia, and Ireland (with large output shocks) and Spain with, so far, relatively small output shocks. In these countries the output shock has been transposed relatively ‘unbuffered’ into a fall in headcount employment. The opposite (low employment elasticity) is true of Lithuania (although in the face of a massive loss of output) Slovenia, Germany, Netherlands and Malta (in declining order of output shock). This shows that in these countries there are substantial buffers between output and employment.

The next step is to explore how changes in unemployment correlate with changes in output and in employment.

Figure 10: Correlation between increases in unemployment (index) and changes in output, EU25 countries Q1 2008-Q1 or Q2 2009*



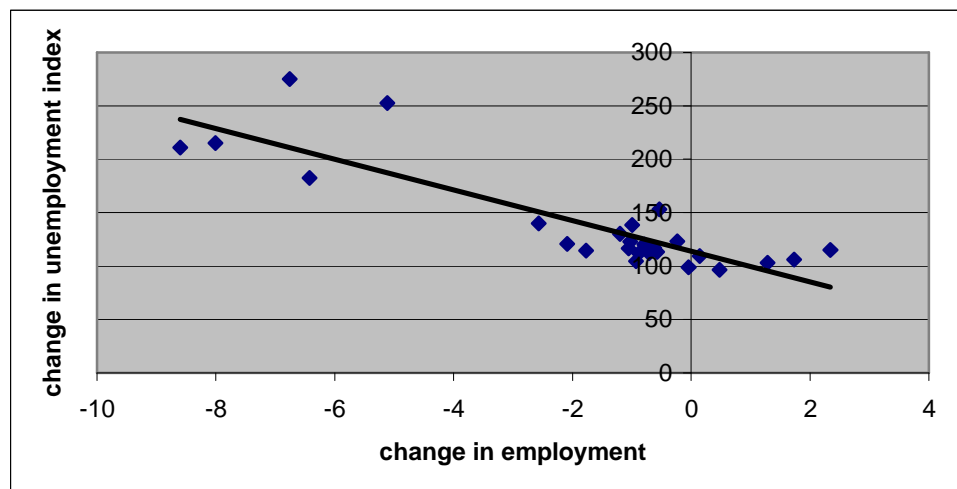
Source: Eurostat National Account Data 2009.

* depending on last available data

As expected there is a strong negative correlation overall between output and unemployment (Figure 10). In fact the correlation (coefficient -0.86) is statistically considerably stronger than the output-employment link. Once again Lithuania, Estonia (but not Latvia) Ireland and Spain emerge as having a particularly bad labour market outcome, this time in terms of the percentage rise in unemployment, given the size of the output loss. Slovenia and Germany have suffered the least rise in unemployment increase with respect to the size of their output losses. A very similar result is obtained (graph not shown here) repeating the analysis for the change in the unemployment rate: the correlation is not quite as strong at -0.81.

Finally we can consider the correlation between employment changes and those in unemployment (using the index measure) (Figure 11). As expected, we see a strong negative correlation. At -0.86, it is the same as that between output and unemployment and stronger than that between output and employment.

Figure 11 Correlation between increases in unemployment (index) and changes in employment



Source: Eurostat National Account and Labour Force Survey Data 2009.

1.4 Some conclusions from the EU comparison

Looking at Europe as a whole we see that, overall, output losses do translate reliably into – considerably smaller – employment losses. These are also translated into rises in unemployment. However, the correlations, while strong, are far from perfect, revealing the existence of important buffer mechanisms. Secondly there are a number of countries that depart from the average (European) coefficients considerably, showing either very large or very small buffers either between output and employment or between employment and unemployment.

There are some data issues (notably that the employment data are not available for Q2 2009 and some of the data may be subsequently revised), but a provisional conclusion appears to be warranted. The differences between the European countries in the sensitivity of their unemployment reaction to output result primarily, but not exclusively, from the country differences in the buffer between output and employment, that is in their ability to prevent a given output shock being transposed into a decline in (headcount) employment. In comparison the transition from falling employment to rising unemployment appears more straightforward. In other words the importance of the third buffer – between headcount employment and unemployment – varies less between the EU countries than that between output and (headcount) employment.

Tentatively we can conclude that various institutions and policies, be they governmental, negotiated by social partners or implemented by firms autonomously, that are at work at the plant level, and serve to maintain employment despite production losses, are more important for explaining intra-European differentials in unemployment outcomes (for a given output shock and at least in the short run) than those institutions and policies that mitigate the impact of a fall in employment on the rise in unemployment.

This analysis is at an aggregate statistical level. An important limitation is that the issue of the buffer between employment in hours and in persons cannot be analysed at this level because we lack comparative data on working hours for the EU countries. The next step is to examine in more detail the institutional configurations behind these different buffers.

2. Explaining performance differences with labour market institutions and structures

2.1 Methodological issues

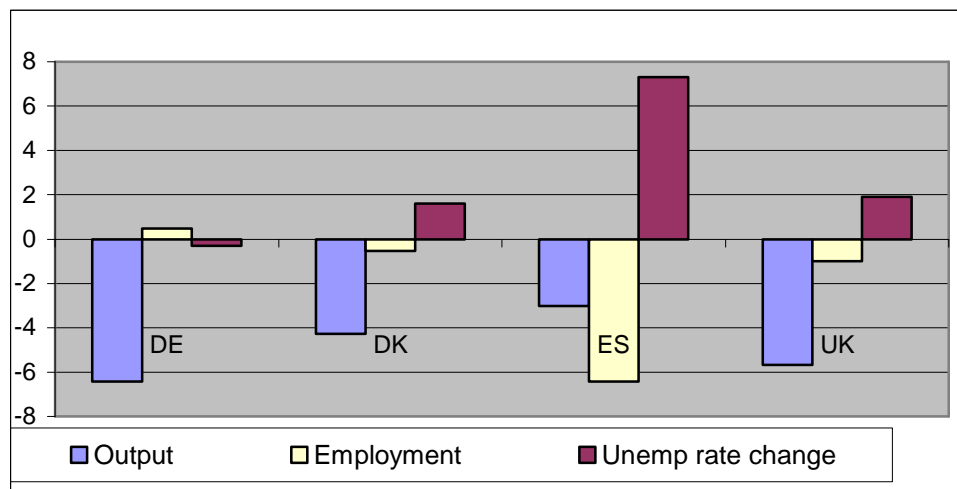
One potential approach to examining the institutional configurations across a broad number of EU countries is to explain variations in labour market outcomes in a regression analysis in which we control for the size of the output loss and then consider a set of institutional variables that are assumed to influence employment and unemployment outcomes. Examples of these variables are short-time working schemes which can maintain head-count employment by reducing individual working hours, employment protection legislation (EPL) which slows the adjustment of head-count employment to a loss of output and active labour market policies which can reduce the extent to which a fall in employment translates into a rise in unemployment.

We attempted this approach but encountered a number of difficulties. First of all we had comparative data only for a limited number of countries which not only limits the number of explanatory variables but makes it difficult to arrive at robust results. Secondly, for several institutional variables, particularly EPL, the data source is the OECD which excludes several EU members. Thirdly, the indicators were too rough in many cases for us to be sure to capture the aspects of the institution which theory would suggest is relevant for serving as a buffer. Fourthly, for some institutions that would be expected to have an effect no comparable measures are available.

We ran several regressions on the changes in unemployment which, controlling for the size of the output shocks, generally had the expected signs for the variables EPL, ALMP, and the existence of short-time working and early retirement schemes. However, the results were highly unstable and the standard errors so large that statistically the results were not significant.

Thus we have adopted a small-N case study approach focusing on Germany, the UK, Spain and Denmark. As we have shown in the first section and as summarized in figure 12 these countries show some interesting patterns when comparing output, employment and unemployment outcomes. As is well known from the comparative political economy literature these countries also represent different welfare state regimes (Esping Andersen 1990, Hall/Soskice 2001).

Figure 12 Summary comparison of output, employment and unemployment-rate changes for four countries, Q1 08 to Q1 09



Source: Eurostat National Account and Labour Force Survey Data 2009.

In *Germany* the disjuncture is clearly between output on the one hand and employment on the other. Given this loss of output a substantial fall in employment would have been expected. By contrast the changes in employment and unemployment are compatible with one another. *Spain* is the opposite case to Germany. A comparatively small output loss has been associated with a dramatic loss of employment, by far the largest in the sample, and also a massive rise in unemployment. Spain clearly lacks buffers both between output and employment and between employment and unemployment. Comparing *Denmark* and the *UK*, it seems that the importance of the buffers is broadly comparable: a slightly higher output loss in the UK translates into slightly higher employment and unemployment changes. Given the major institutional differences between Denmark and the UK this is at first sight a surprising finding.

The remainder of this section looks in more detail at the labour market outcomes of the crisis in the four chosen countries and in particular at the different institutional configurations. For each country we start by looking at the developments of employment and unemployment for different labour market groups. The extent to which different groups are affected may shed light on the role played by different institutional buffers. We then look at structural features of the respective labour market before turning to specific government policies.

2.2 Country case study: Germany

2.2.1 Labour market developments

Developments in employment

Seasonally adjusted total employment (which includes self-employed, family workers, civil servants and marginal employed) shows month-to-month decreases with a rate between 0.1 and 0.2 between November 2008 and April 2009 whereas in the three preceding years we had almost exclusively observed increases (BA May 2009a). The

narrower measure of employment subject to social security increased by 0.1 percent between February and March 2009 – this increase was considerably lower than the average of the last three years. However, there is still a plus of 0.4 percent compared to March 2008 (BA, May 2009b).

Information on developments in employment broken down for different labour market groups is only available up to December 2008. A comparison between the period December 2006 to December 2007 and the period December 2007 to 2008 reveals that employment growth is weaker than before for almost all labour market groups (Table 1). The sole exceptions are women, elderly – the group with by far highest growth rates – and persons with tertiary education whose employment developments remain stable. The only two groups that showed negative growth, though, were youth below 20 years and persons without secondary education. Total employment growth over the one year period was 1.5% whereas it had been 2.2% a year before.

Table 1: Developments in employment: comparison between December 2006 to December 2007 and December 2007 to December 2008

	Changes between Dec 06 and Dec 07 (%)	Changes between Dec 07 and Dec 08 (%)
Total employment	2.2	1.5
Male employment	2.2	0.9
Female employment	2.2	2.2
Younger than 25	3.1	0.2
Younger than 20	1.2	-3.5
Older than 55	7.4	7.3
Secondary education	0.6	0.4
No secondary education	0.7	-1.1
Tertiary education	4.1	4.2
German	2.1	1.5
Foreign	3.7	2.3
Full-time	1.6	0.9
Part-time	5.2	4.1
apprentices	2.8	1.4

Source: BA 2008 and BA 2009a.

It remains to be seen if employment will stabilise at this level or if growth rates will further decline over the year 2009. The latter is suggested by the marked decline in regular vacancy notifications to the Bundesagentur für Arbeit (BA). Comparing July 2008 and July 2009 the stock of vacancies is down by about 18 percent (BA July 2009).

Developments in non-standard employment

With 3.3 million women and 1.6 million men in September 2008 *marginal employment* is rather important in Germany. The share was 16.8% in 2007 (latest available data). About 40% of marginal employment contracts last less than one year (Deutsche Rentenversicherung 2009). In times of crisis we would expect that employers are more likely to cut costs by making use of e.g. marginal workers instead

of workers with regular contracts. However, whereas a slight increase of 2.1% was recorded for the period March to December 2008, marginal employment decreased thereafter by -0.6% up to March 2009 (Deutsche Rentenversicherung 2009). The development of employment subject to social security was analogous with increases of 2.8% between March and September 2008 and subsequent decreases by 2.5%.

There was only a very slight decrease of 0.2 percentage points in fixed-term contracts between the first quarter of 2008 and the first quarter of 2009 (Eurostat 2009). However, the developments are much more pronounced in terms of *temporary agency work* which had been very important for employment growth in the past. In fact, temporary agency work was one of the first sectors hit by the economic crisis: whereas total employment subject to social security only began to decline at the end of 2008, for temporary agency work this had already been the case since the second quarter of 2008. The share of temporary agency workers in all employed workers subject to social security has decreased from a peak of 2.6% in June 2008 to less than 2 percent in May 2009 (BA August 2009). Men make up 73% of all temporary agency workers. Temporary agency work is of short duration, with about half of all contracts that ended in the second half of 2008 having lasted for less than 3 months, which makes it suitable as an adjustment tool from an employer point of view.

Development of hours and earnings

Whereas downward developments in employment have up to date been limited, employment measured in working hours went down considerably. In the first quarter of 2009 each employed person worked on average 11.2 hours or 3.1% less than in the first quarter of 2008, a substantial fall. The usual weekly working time of full-time employed decreased by 0.5 hours on average between the first quarter of 2008 and the first quarter of 2009 and average paid over-time was at an all time low of 8.4 hours during the first quarter of 2009. The decrease in working hours among part-time workers was less pronounced (IAB 2009).

The results for April 2009 show that collectively agreed earnings increased at a much lower pace than in the previous year (Table 2). However, increases are still considerably higher than in April 2006 and April 2007. The lowest monthly increase was observed in the sectors of hotels and gastronomy (1.5) and construction (1.7).

Table 2: Increase compared to same months previous year in collectively agreed earnings of employees in production and services

	Monthly earnings	Hourly earnings
April 2006	0.6	0.2
April 2007	1.4	1.4
April 2008	3.9	3.8
April 2009	2.8	2.6

Source: Statistisches Bundesamt April 2009.

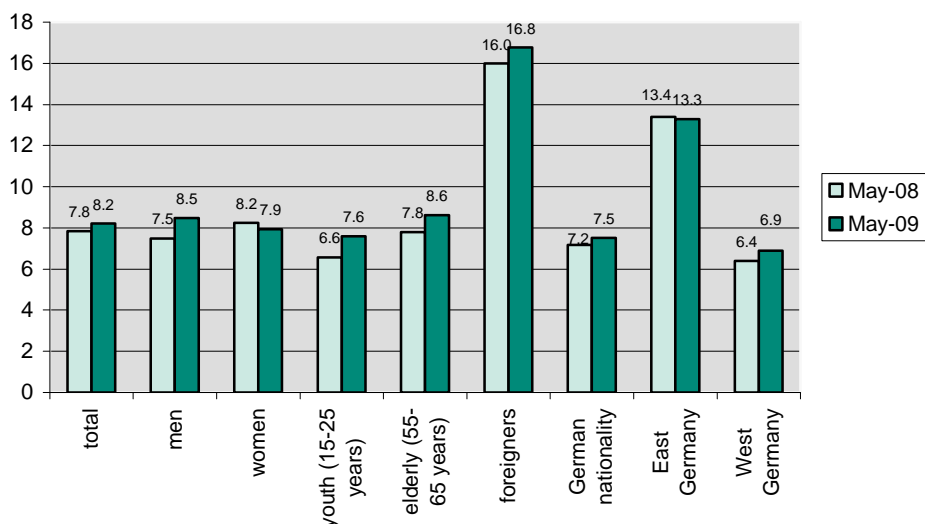
Unemployment

Total unemployment increased by 0.4 percentage points between May 2008 and May 2009 and now lies at 8.2 percent (national definition). This is however still almost one percentage point below the level of May 2007. Also in comparison to the EU average

increase of 2.1 percentage points in the period of May 2008 and May 2009 (European definition) Germany fares well.

As is the case in the EU the increase is strongly driven by male unemployment which has increased by one percentage point within the last year whereas female unemployment has decreased by 0.3 percentage points (figure 13). With unemployment of 7.9% the female unemployment rate is actually lower than for men (8.5%). If we only look at the period from the beginning of the year 2009 and use seasonally adjusted numbers we record increases in unemployment for both men and women. Unemployment of men has increased by 19000 in May after 46000 on average in the preceding three months; the corresponding numbers for women were 11000 and 12000 (BA Mai 2009d).⁵ This may point to a spreading of the labour market impacts of the crisis from the ‘epicentre’ of manufacturing industry.

Figure 13: Structure of unemployment: comparison May 2008 and May 2009



Source: BA Mai 2009a.

Unemployment also increased over-proportionally on the extremes of the age scale. Youth unemployment (15-25 years) increased by one percentage point but at 7.6% is still very low in European comparison. The absolute increase of youth unemployment in May was somewhat larger than during the average of the three preceding months and was almost exclusively due to increases in the group of the 20 to 25 year olds who have problems remaining in the labour market after finishing their apprenticeship training (BA Mai 2009f). Youth younger than 20 who are usually registered as unemployed while looking for apprenticeship training seem to make use of possibilities to re-enter the education system as a circumvention strategy to unemployment. Similarly, the unemployment rate of elderly (55-65 years) increased by 0.8 percentage points over the one year period since May 2008. This group was affected by the phasing out of early retirement regulations. Unemployment among persons between 50 and 55 years is still decreasing (BA Mai 2009).

⁵ The latest developments in terms of unemployment are influenced by a special effect of the reorientation of labour market instruments. Without this effect the developments would have been less positive, however still more favourable than in the previous course of the year.

With 16.8 percent of unemployment in May 2009 non-German nationals have more than double the unemployment rate of German nationals. They have also seen larger than average increases in unemployment. This can at least in parts be explained by their lower average qualification level and their stronger likelihood to work in the secondary sector which is more affected by the current crisis (BA Mai 2009).

2.2.2 Institutional explanations for labour market developments during the crisis

Structural features

Employment protection legislation

In comparison with other OECD countries (and notably with the UK and Denmark) Germany has relatively strict employment protection legislation in place for workers with permanent contracts. On the other hand, restrictions on the use of temporary contracts have been lifted gradually over the last two decades. A particularity is the high degree of permanent contracts among temporary agency workers in Germany. Strong EPL would, by itself, be expected to limit the sensitivity of employment to a fall in output.

Past expenditure on and participation in ALMPs

Germany's share of GDP spending on active labour market policies used to be relatively high (however at higher unemployment than most other European countries). In the last couple of years the expenditure on ALMPs has however declined markedly and in 2007 (latest available year) matched the expenditure of Spain. In 2006, the most important programme in terms of expenditure was training, followed by the public employment service and administration. Interestingly, participation rates have been increasing lately which implies that less is being spent per person and less cost-intensive measures are being used.

Active labour market policies

Underemployment or hidden unemployment through ALMPs

In June 2009, 1.62 million persons participated in active measures – 0.1% fewer than one year earlier. The ratio of unemployed to those in active measures was 1.9 to 1 in June 2008 and 2.1 to 1 in June 2009 (BA Juni 2009b). In fact, the majority of unemployed people participating in active labour market policies are not counted as unemployed. Thus, by adding the number of participants in ALMPs to the number of unemployed persons one gets a more realistic picture of the size of underemployment. In March 2009 (the last available data that includes short-time workers) the number of unemployed was 3.585.784 whereas the number of underemployed was almost one and a half million higher at 5.020.911 (table 3). Comparing March 2009 with the same month of the previous year shows an increase of 2.2% in unemployment but at the same time an increase of 7.6% in underemployment (table 3). The number of unemployed is thus clearly being kept down by an increased use of active labour market policies and particularly the expansion of the short-time working allowance.

The short-time working allowance is by far the most important component in the category “underemployment – persons far from unemployment”; it has increased by a factor of close to 5 between March 2008 and March 2009 (not shown). Interestingly, all other measures that are assembled under this heading have decreased in importance if compared with March 2008.

Table 3: Marked increases in underemployment

	Stock	Changes compared to the same months one year earlier in %					
	March 2009	Feb 2009	March 2009	April 2009	May 2009	June 2009	July 2009
Registered unemployment	3,585,784	-1.8	2.2	5.0	5.3	7.9	7.9
Unemployment - persons close to unemployment (e.g. activation, job integration, some early retirement schemes)	3,698,285	-1.1	2.9	5.2	6.3	9.5	10.9
Underemployment - persons close to unemployment (e.g. job training, public works (ABM), subsidised employment, disability benefits, some early retirement schemes)	4,342,582	-2.3	1.2	3.0	4.5	7.0	8.2
Underemployment - persons far from unemployment (e.g. subsidised self-employment, partial retirement, short-time work allowance in full-time equivalents)	5,020,911	3.1	7.6	x	x	x	x
Underemployment – persons far from unemployment without short-time work allowance	4,585,906	-3.3	-0.1	1.6	3.0	5.4	6.6

Source BA May, Juni, July 2009.

Short-time working allowance

Instead of firing employees German employers have in many cases resorted to a reduction in weekly working hours and/or overtime, a reduction of credits in working time accounts and, importantly, by making use of the short-time working allowance. By compensating workers for part of their lost income from temporary working time reductions, the short-time working allowance aims to keeping people in their firms and thereby avoiding unemployment.⁶ At the same time employers are helped to preserve their qualified work force which will enable them to step up production without delay in the case of an economic upswing.

The short-time working allowance can be claimed in case of downturns (*konjunkturelles Kurzarbeitergeld*), in certain sectors in case of bad weather conditions (*Saison-Kurzarbeitergeld*) and at restructuring (*Transfer-Kurzarbeitergeld*). In some form or the other it has been in place in Germany since the 1920s. In the current economic crisis it has considerably increased in importance.

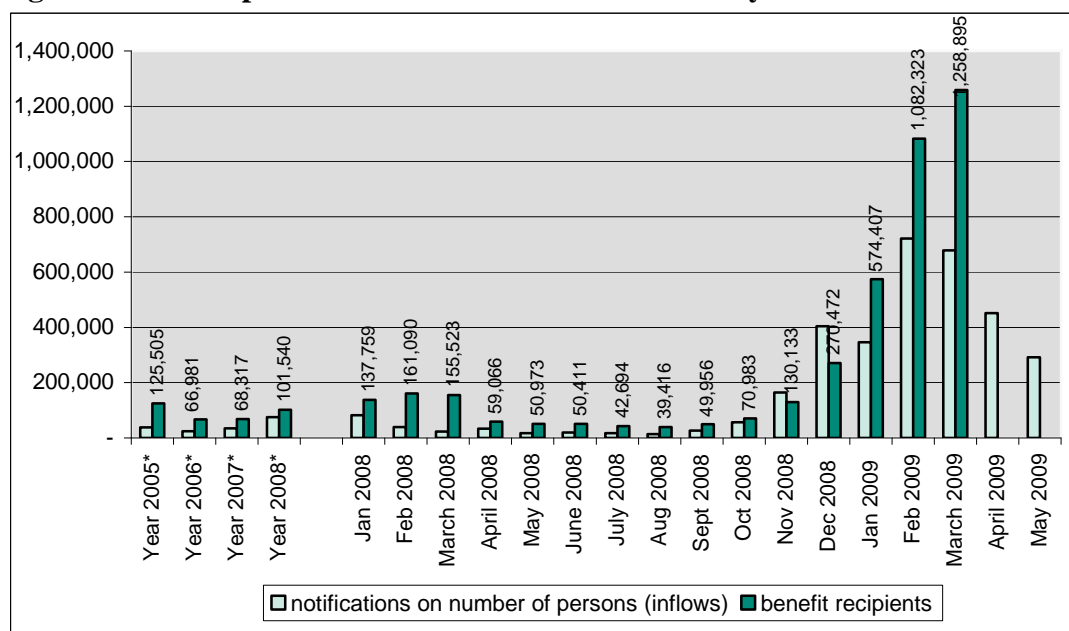
In coordination with the social partners, the rules regarding the use of short-time working allowance have been modified and simplified several times during the recent months to allow easier and less bureaucratic access and make the allowance available for broader groups of workers (including fixed-term workers and temporary agency workers). The new rules, which are part of the economic

⁶ Lost earnings in the short-time working allowance scheme are replaced at the level of unemployment insurance.

stimulus package, are in place until the end of 2010. Employers now have easier and cheaper access to the short time working allowance: the rule that at least 30% of employees have to be affected by short-time work is currently suspended, a working-time reduction and corresponding loss of wages of at least 10% is sufficient (website: Bundesministerium für Arbeit und Soziales). Employers no longer have to implement measures to avoid short-time work (such as using up working time accounts) before they are eligible for the allowance. Furthermore, as of July 2009 the federal employment office can fully reimburse the employers' social security contributions after short-time work of 6 months. During the first 6 months half of the employers' contributions are reimbursed. The maximum duration of the allowance has been extended several times and is now 24 months. Importantly, the German government has also strengthened its commitment to support further training during short-time work (see below) (for more information on the German short-time work allowance during the economic crisis refer to Eichhorst/Marx 2009).

After the modification and simplification of the regulations, large increases in notifications and benefit recipients can be observed (figure 14). In January 2009 about 574.000 workers received benefits under the short-time working allowance; this number has increased to more than 1 million workers in March 2009 (latest available data). One year earlier, only about 155.500 workers had received the allowance. The notifications on number of persons (potential inflows) peaked in February 2009 at about 721.000; in May 2009 notifications for new short-time workers were down to 292.000.⁷ Estimates for June expect between 200.000 and 220.000 new notifications (BA Juni 2009).

Figure 14: Development of short-time work in Germany



Source: BA Juni 2009a.

*Average annual numbers.

⁷ 285000 of these notifications were done in the category of short-time work due to the downturn (Konjunkturelles Kurzarbeitergeld).

The average working time reduction was 35% in March; in full-time equivalents 435.000 people were thus working short-time (BA Juni 2009a). The increase in short-time work in absolute numbers was much bigger in West than in East Germany and notifications were by far highest in manufacturing followed by construction (BA 2009b). The short-time working allowance has thus been especially important in sectors which (even with the allowance being in place) showed negative growth over the previous year.

Extending short-time working allowance to non-standard workers

In the past, the regulations on short-time working stipulated that certain measures – including firing temporary agency and fixed-term workers – had to be carried out before the allowance could be claimed (Deutscher Gewerkschaftsbund Bundesvorstand 2009). These regulations are currently suspended. In fact, the allowance can now also be paid to fixed-term and temporary agency workers and their contracts can be prolonged during times of short-time work. This may be one of the reasons why hardly any decline in fixed-term work can yet be observed in Germany. Marginal workers cannot receive the short-time working allowance but they do not have to be fired as a prerequisite for the firm to get access to the short-time working allowance.

Since November 2008 (and until the end of 2010), the short-time working allowance is also applicable to the sector of supply of temporary workers. The allowance can be claimed if there is a not only a short-term but rather a more lasting lack of demand. Temporary agency workers usually receive their full wage in times of non-employment. Under the short-time working allowance, however, the usual wage replacement rate applies.⁸

From November 2008 to May 2009 notifications (which capture potential benefit receipt) were submitted for 93000 short-time workers from the sector of temporary agency workers supply – the bulk of these in March 2009. In March 2009 (latest available data) 16400 short-time workers in this sector received the allowance (table 4). At 52% the average working time reduction was considerably higher in this sector than on the average of the other sectors (33%).

Table 4: Notifications for and recipients of short-time working allowance in the sector of supply of temporary workers

months	notification s	benefit recipients
Nov 2008	729	148
Dec 2008	3128	1445
Jan 2009	2224	2578
Feb 2009	18094	13215
March 2009	42919	16412
April 2009	13653	:
May 2009	12513	:
Juni 2009	9400	

Source: BA Juni 2009a.

⁸ In the negotiations preceding the opening of the short-time working allowance to the temporary agency sector the DGB suggested that temporary agency workers should receive their full wage in order to avoid that their replacement income will have to be supplemented by the basic unemployment benefit (ALGII) (Deutscher Gewerkschaftsbund/Zeitarbeit).

Qualification through further training during short-time work

The German government also strengthened the further training component of the short-time working allowance which had been very limited before. Training measures can assist workers in upgrading their skills during working time reductions and thereby increase their possibilities of re-entering regular employment fast (in their firm or in another work place). At the same time, firms can use the newly trained workers in areas where they face skill shortages. To increase the incentive for employers to make use of training, the federal employment office reimburses 100% instead of 50% of the employer's social security contribution for the employee participating in a non-firm specific training measure.⁹ There is an additional incentive for temporary agency work suppliers who are willing to reemploy workers for new tasks.¹⁰ As part of the stimulus package the government has also increased support for further training measures for disadvantaged labour market groups (low qualified, older workers) employed in small or medium sized enterprises.¹¹

Further training measures during periods of short-time work are supported by means of the UI fund and by the European Social Fund (ESF) Since the beginning of 2009, 15200 short-time workers started a qualification measures with help of the ESF. Unfortunately, data are not available on the number of participants in further training measures for short-time workers supported by the unemployment insurance fund and not the ESF (website: Bundesministerium für Arbeit und Soziales).

Additional labour supply buffers

In Germany early retirement rules according to §428 SGBIII have run out in the end of 2007 which means that the stocks in early retirement are automatically decreasing. The rule in place before the end of 2007 stipulated that unemployment benefit recipients older than 58 did no longer have to search actively for a job and thus could receive unemployment benefits unconditionally until retirement (BA Mai 2009e). In June 2009, 29700 elderly persons still received unemployment insurance benefits (ALG I) according to this rule – these were 79% fewer persons than in the previous year.¹² Unemployed persons who are older than 58 and previously could make use of the early retirement rule (not being counted as unemployed) are now counted as unemployed. It is estimated that this leads to

⁹ With the new rule that stipulates that social security contributions are taken over in full after 6 months of short-time work, this incentive is becoming obsolete for later time periods of short-time work and the DGB has voiced its fear that this will lead to less usage of training measures (website: Deutscher Gewerkschaftsbund).

¹⁰ Temporary agency work suppliers who reemploy currently unemployed persons who have worked in the firm subject to social security contributions in 2007 or 2008 can have specific training measures for these workers reimbursed. However, the temporary agency work supplier will have to pay the worker's wage during this time period (website: Bundesagentur für Arbeit - Weiterbildung).

¹¹ The employment agency pays the fees for the training and also a supplement for further costs related to the training. Workers receive the education voucher which gives them free choice among the certified training offers. During the training measure, the employer gets parts of the wage costs and of the social security contributions replaced.

¹² No available information for basic benefit (ALG II).

about 10.000 additional unemployed per month and 160.000 cumulated unemployed since January 2008 (BA Juni 2009b). This change in regulation also explains the recent large increase in unemployment in this age group.

The legislation on partial retirement (Altersteilzeitgesetz, put into place in 1996) allows employees of at least 55 years the transitory entrance to retirement without losing part of their retirement income. It was also put into place in order to counter early retirement. The number of partial retirees who are supported by the federal employment agency lies at 94.400 in June 2009 – these are 6.7% fewer than in the previous year and comparable to the 2005 level – in both 2006 and 2007 more than 100.000 persons were in this measure (BA Dezember 2008). Moreover, the financial support by the employment agency requires that the partial retiree is replaced which is unlikely to happen during the crisis

For all these reasons it seems likely that early and partial retirement will not be a feasible possibility to prevent unemployment among elderly during the crisis.

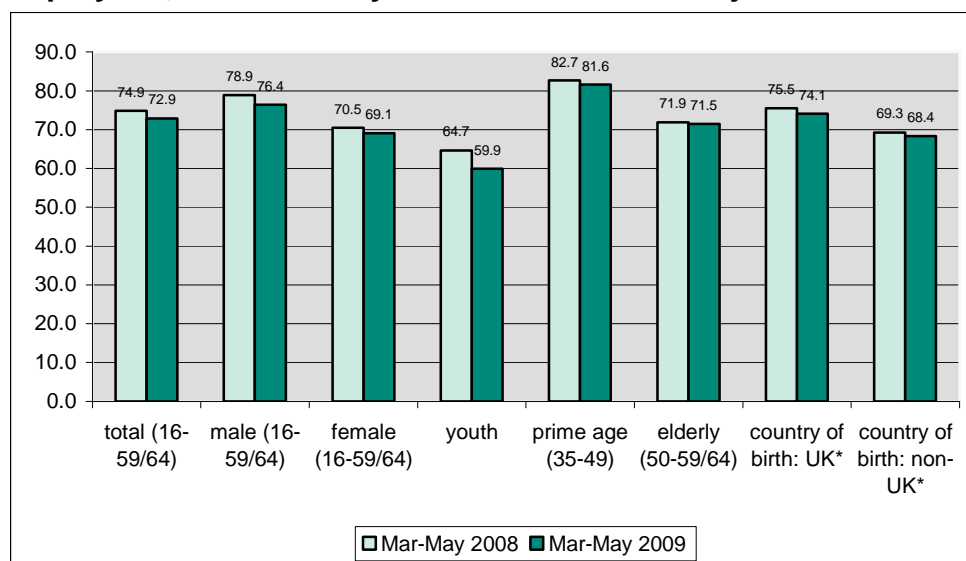
2.3 United Kingdom

2.3.1. Labour market developments

Developments in employment

The UK economy, with its large financial sector and major housing bubble, has been one of the hardest hit by the economic downturn in western Europe. The outlook for the UK labour market remains pessimistic: The latest Commission forecast foresees employment contracting by 2.4% in 2009 and a further 0.9% in 2010 while unemployment is expected to average 8.2% in 2009 before rising further to 9.4% in 2010 (European Commission July 2009).

Figure 15: Changes in employment rates by characteristics of employees, March to May 2008 and March to May 2009



Source: UK Labour Force Survey.

*relates to Jan-March 2008 and Jan-March 2009.

Against the background of an overall decline in the employment rate by two percentage points, as can be seen from Figure 15, the fall in employment has been concentrated among men and especially younger workers; young people have seen a drop of almost five percentage points.

Developments in different types of employment

Between March-May 2008 and the same period 2009, more than half a million jobs were lost in the UK (on the following cf. Office for National Statistics July 2009, tables 3 and 5(2)). The rate of job loss was more than twice as high for men (-2.5%) than for women (-1.1%). The situation would have been even more serious, were it not for the continued expansion of the public sector: public sector employment increased by 5% (year change) whereas private sector employment decreased by -2.9%. Manufacturing was worst hit, shedding 6.7% of its jobs. It is interesting to note that the job losses have been concentrated among full-timers, whereas part-time work has actually increased, whereby this is due solely to a rise for men (table 5). This may well indicate a specific form of ‘work sharing’ in the UK context.

Table 5: changes in employment by job type

	Thousands					government supported training & empl. programmes
	total employment	employees	full-time employees	part-time employees	temporary employees	
Mar-May 2008	29541	25463	19070	6393	1423	119
Mar-May 2009	28998	24966	18547	6419	1415	99
change %	-1.8	-2%	-2.7%	0.4%	-0.5%	-16.1%

Source: UK Labour Force Survey.

Similarly temporary employment has been affected less than those on standard contracts (table 5). More surprising is the very substantial fall in the number of people enrolled in government supported training schemes. It is notable that there has been a large increase in the ‘involuntary’ component of both fixed-term and part-time employment, with many survey respondents reporting that they took such work because they were unable to find a permanent or full-time position.

Development of hours and earnings

The data (Office for National Statistics July 2009, table 7) point to only a very limited shortening of average actual working hours in the UK – less than a third of the effect in Germany. Partly this reflects the fact that while male workers had decreasing work hours (-1.5%) female workers’ hours increased by 0.5%. Even the low average figure of 0.9% is partly explained by a big drop in the hours for second jobs: full-time workers have only seen a 0.4% fall in average actual hours (table 6).

Table 6: Actual weekly hours of work

	All workers (main and second job)	Full-time workers (main job)	Part-time workers (main job)	Second job
Mar-May 2008	32.0	37.1	15.5	10.1
Mar-May 2009	31.7	36.9	15.5	9.7
change %	-0.9%	-0.4%	0%	-4.1%

Source: UK labour force survey.

Note: full-time part-time split based on self-assessment.

Average earnings (including bonuses) are still on the rise, however, at a considerably slower pace than in previous years (Office for National Statistics July 2009, table 15). The changes are exclusively due to earnings cuts in the private sector (table 7). The stronger average earnings growth in services than in manufacturing can be explained by an increasing use of short-time hours and temporary lay-offs in the manufacturing sector (TUC July 2009).

**Table 7: Average earnings (including bonuses):
% changes year on year, 3 month average**

	Whole economy	Private sector	Public sector
May 2007	3.5	3.7	3.1
May 2008	3.7	3.7	3.6
May 2009 (p)	2.3	1.9	3.5

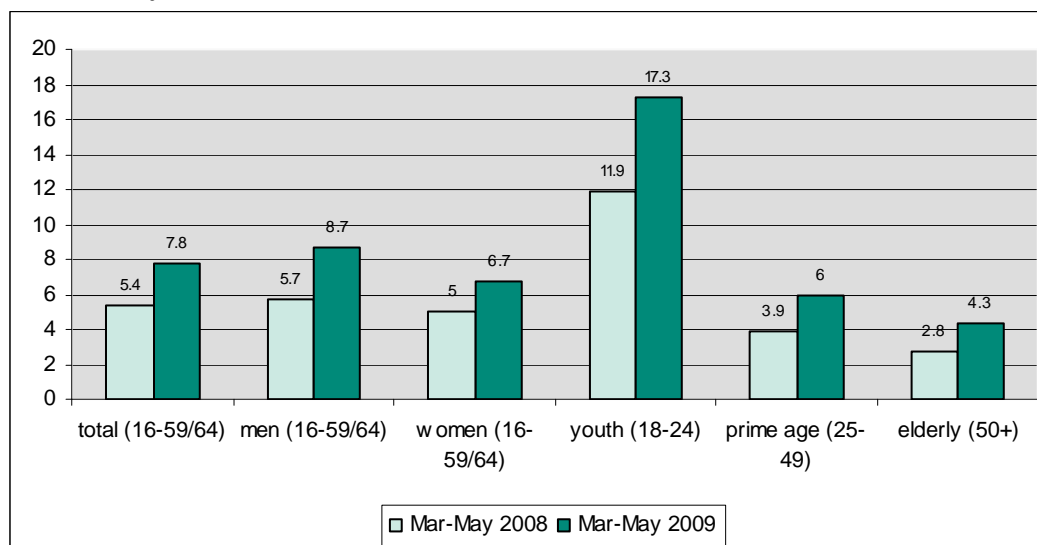
Source: Monthly Wages & Salaries Survey.

Note: seasonally adjusted.

Developments in unemployment

The overall unemployment rate increased by 2.4 pp between the spring of 2008 and 2009 (Figure 16). Reflecting the employment trends described above, this was heavily concentrated among male workers: in terms of unemployment rates the increase was almost twice as severe among men (3pp) than women (1.7pp), and a 2 pp gender gap has now opened up to the disadvantage of men. While unemployment has risen to a comparable extent for prime age and older workers, the rise in youth unemployment has been dramatic, by more than 5 pp, such that almost one in five young people on the labour market is unemployed.

Figure 16: Structure of unemployment: comparison March-May 2008 and March-May 2009



Source: UK Labour Force Survey

2.3.2 Institutional explanations for labour market developments in the crisis

Structural features

Employment protection legislation

The UK has very low employment protection legislation for both permanent and temporary contracts (notwithstanding some recent re-regulation). The overall OECD EPL indicator is 0.75 compares with an OECD average figure of 1.94 (on a 1-6 scale). This is especially true for workers on temporary contracts, however, it should be noted that restrictions on collective dismissals, which are likely to be particularly relevant. In the context of the crisis, are only lightly less restricted than the OECD average (2.88 vs. 2.96). Even so it seems plausible that generally liberal EPL rule in the UK, by themselves, reduce the incentives for firms to hoard labour in a downturn, compared with countries where state-mandated firing costs are higher. One consequence of liberal EPL rules is that the UK has a comparatively low share of temporary employment.

Past expenditure on and participation in ALMPs

Despite New Labour's New Deal reforms that intended to strengthen the activating component of the unemployment benefit system, expenditure on active measures remains among the lowest in the EU. With only about 0.3 % of the labour force participating in ALMP measures in 2006 (participant stock) the United Kingdom remains far behind Denmark (5.2 in 2004) and Germany (6% in 2006) (no numbers for Spain available). The bulk of recent UK expenditure on activating measures is on public employment services (job search assistance and the like) and administration with negligible expenditure on other types of measures.

The lack of existing schemes that can be rapidly expanded in a crisis would seem likely to result in a limited buffer between employment and unemployment changes, unless alternative measures reducing labour supply (early retirement, outward migration) perform this role.

Active labour market policies

No extension of active measures, no short-time working allowance

There do not seem to be any new ALMP measures introduced in light of the crisis and there is no state-funded short-time working scheme in place. Both the British employers' confederation (CBI) and the trade unions peak organisation TUC have called for the implementation of such schemes.¹³

The emphasis of government initiatives seems to be on support for job search, as in the past. The UK government announced in October 2008 that an extra GBP 100 million would be made available over three years to help people using the Jobcentre Plus scheme. This funding is to help people to retrain and develop their skills in order to enhance their chances of finding employment. This measure is co-financed by the European Social Fund (Eironline (5.1.2009)).

Since autumn 2008 more resources are available for small and medium sized enterprises under the “Train to Gain” programme. This is to help business meet staff training requirement during the economic crisis.¹⁴

Participation of specific groups in active measures in the crisis

In addition to general ALMP measures a number schemes exist for specific labour market groups. However, as can be seen from Table 7, their impact so far in mitigating the rise in unemployment has been mixed. Participation in the New Deal measure for adults has actually been decreasing while at the same time unemployment has been increasing. This partly reflects the fact that however the New Deal 25+ is only mandatory after 18 months of JSA receipt. One may therefore expect increased numbers of participants from the end of 2009. Thus the unemployment-reducing effect of this measure will be delayed by a year and a half.

This institutional feature is shown by the contrast with the New Deal scheme for young people. Here participation has increased by around one third: this measure is mandatory after 6 months of claiming benefits (Table 8).

¹³ See

<http://www.cbi.org.uk/ndbs/Press.nsf/0363c1f07c6ca12a8025671c00381cc7/9b9a4bacc1622174802575e400370f75?OpenDocument/> and <http://www.tuc.org.uk/extras/wagesubsidies.pdf/>

¹⁴ See http://www.traintogain.gov.uk/Helping_Your_Business/extrasupport/

Table 8: Participants (thousands) in active measures: comparison February (April) 2008 and February (April) 2009

	Feb 2008	Feb 2009
	thousands	
New Deal 25+ (total)	64.74	56.91
New Deal 25+ (male)	52.62	46.49
New Deal 25+ (female)	12.12	10.41
New Deal for young people (total)	74.71	101.08
New Deal for young people (male)	52.44	73.37
New Deal for young people (female)	22.26	27.70
	April 2008	April 2009
Employment Zones (total)	30.97	27.31
Employment Zones (male)	17.51	15.71
Employment Zones (female)	13.46	12.13

Source: Department for Work and Pensions, Information Directorate. Downloadable at: http://research.dwp.gov.uk/asd/asd1/tabtools/tabtool_nd.asp

Finally there has been a (small) decline in the number of participants in so-called Employment Zones. These were introduced in April 2000 to 15 areas with consistently high levels of long term unemployment. They pool funds for training, Jobcentre Plus support and the equivalent of benefit to with the aim of helping long term unemployed people to find sustainable employment. Employment Zones are a mandatory programme for participants, aged 25 or over, receiving Income-Based Jobseekers Allowance who have been unemployed for 12 or 18 months (depending on the Zone). The scheme has recently been extended to two further client groups: young people aged 18-24 years, who have already participated on New Deal for Young People, and lone parents.¹⁵

Overall only the New Deal for Young People programme saw a notable increase in participation between Feb 2008 and Feb 2009 in line with the increases in JSA claimant counts, which as we have seen was particularly strong among young people.. Other schemes will only have an effect after an extended period of unemployment. Such measures would have the effect of reducing the inflow into unemployment (assuming that participants report that they are not looking for work while on the schemes). However, their limited quantitative importance and the failure to expand existing schemes to address the rise in unemployment quickly suggests a limited buffer in the UK between employment and unemployment changes in the form of active labour market policy.

Additional labour supply buffers

In addition to active labour market policy measures we finally consider other schemes or structures that can have the effect of reducing labour supply in response to a fall in employment. Among the most potentially important are early retirement and partial retirement, disability, and outward migration

¹⁵ http://research.dwp.gov.uk/asd/emp_zones/EZ_Background_Information.pdf

State-supported early retirement schemes have been abolished, and indeed postponing retirement is encouraged (MISSOC 2008). In past recessions some redundant workers were provided for in various disability schemes, rather than via the unemployment benefit system. The latest data we have are for November 2008. 2.6 million working age people claimed Employment and Support Allowance and incapacity benefits. This was a year-on-year decrease of 39000 but an increase of 13000 on the previous quarter (DWP 13th May 2009). Apart from a small rise in November 2007, this is the first increase since August 2004. Given these ambiguous and not up-to-date figures, it is not yet possible to assess the use of such schemes as a labour market buffer.

Since 2004 and the opening up of the EU labour market, the UK has been the destination of choice for large numbers of migrant workers from central and eastern Europe (Galgoczi/Leschke/Watt 2009). A possible adjustment mechanism to falling employment would therefore be the return (outward) migration of some of these workers. Unfortunately we lack reliable, timely data with which to gain an idea of the size of this effect.

What does seem clear is that labour inflow has slowed: during first quarter of 2009 the number of applications approved under the workers registration scheme was 21,275 – considerably down from the 46,645 approved in the first quarter of 2008. However what is of key concern is the net in/outflow. However, information on the numbers returning to their country of origin is limited (no suitable statistics in the UK nor in the countries of origin).

There is flow data from the International Passenger Survey for the year ending in September 2008. Comparisons with 2007 showed a fall in total net migration to the UK from 182,000 to 147,000. There was little change in non-British inflow, but outflow rose from 168,000 to 218,000. In the same time period, inflow from A8 citizens rose slightly from 96,000 to 100,000 while their outflow rose stronger from 26,000 to 56,000 (Dobson/Latham/Salt 2009).

On these data it seems that while the crisis has clearly affected migration flows, net outward migration has not – yet – become a factor easing the pressure on the UK labour market.

2.4 Spain case study

TO BE ADDED LATER

2.5 Denmark case study

TO BE ADDED LATER

3. Conclusion

- Output losses translate reliably into – considerably smaller – employment losses. These are also translated into rises in unemployment. However, there are important buffer mechanisms.
- There are a number of countries that depart from the average (European) coefficients considerably, showing either very large or very small buffers either between output and employment or between employment and unemployment.
- The differences between the European countries in the sensitivity of their unemployment reaction to output result primarily, but not exclusively, from the country differences in the buffer between output and employment.
- The importance of the third buffer – between headcount employment and unemployment – varies less between the EU countries than that between output and (headcount) employment.
- This means that various institutions and policies, be they governmental, negotiated by social partners or implemented by firms autonomously, that are at work at the plant level, and serve to maintain employment despite production losses, are more important for explaining intra-European differentials in unemployment outcomes (for a given output shock and at least in the short run) than those institutions and policies that mitigate the impact of a fall in employment on the rise in unemployment.

Provisional conclusions from two country case studies:

- Germany: extreme case of internal flexibility especially with regard to working hours by contrast the buffer between employment and unemployment (government labour market policy measures) has as of yet played a very limited role
- UK: little internal flexibility at the work-place to act as buffer and only limited ramping up of government policies
- Spain (provisional): extreme case of external flexibility (termination of fixed-term contracts)
- Denmark (provisional): external flexibility similar to UK, however question mark about the delayed reaction of labour market policies

Appendix

The relationships described verbally in section one can be expressed mathematically in simple equations as follows, where lower case letters indicate rates of change and capital letters absolute values

$$y = h + y/h$$

Economic growth equals change in hours plus change in hourly productivity

$$H = Y/(Y/H)$$

Total working hours equals output divided by hourly labour productivity

$$h = y - y/h$$

The change in total hours equals the rate of economic growth minus the change in hourly productivity

$$H = E * E/H$$

Total hours equals employment times average hours per worker

$$h = e + e/h$$

The change in total hours equals the change in employment plus that of average hours

$$E = P - U - I$$

Employment (in persons) equals the working age population minus unemployment minus 'inactives'

$$e = p - [u(U/P) + i(I/P)]$$

Change in employment is equal to the change in the population of working age minus the changes in unemployment and inactives (weighted with their respective shares of the working age population).

$$UR_t = U_t/(E_t+U_t)$$

The unemployment rate is equal to unemployment divided by the sum of employment and unemployment (all at time t)

$$\text{And thus the percentage point change in UR} = U_{t+1}/(E_{t+1}+U_{t+1}) - U_t/(E_t+U_t)$$

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