

## **Wage bill change in Ireland during recession - how have employers reacted to the downturn**

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**Abstract:** The Earnings, Hours and Employment Costs Survey (EHECS) captures information each quarter on total earnings, paid hours and level of employment from a large representative sample of employers. Responses received typically cover more than 70% of all employees in the state. The main purpose of the survey is to gauge trends in the average level of earnings and hours worked over time across all sectors of the economy. However the presence of the same employers in the sample over time creates a valuable opportunity to undertake longitudinal analysis of the manner in which employers change their wage bill over time. A previously published study from EHECS comparing quarter 3 2008 with quarter 3 2009 showed that for the matched employers, covering over half of all employees in the state, nearly two thirds of those employers had cut their wage bill by more than 2 percent over the year with the primary method of reduction being a reduction in numbers employed, followed by reductions in hours worked and reductions in hourly rates of pay. The level and type of change differed significantly across sectors. This paper will present an update of the findings from that publication for the following years (covering 2009 to 2011) to assess how the behaviour of employers changed as the economic downturn continued.

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*Keywords:* Employment, Earnings, Nominal wage rigidity, wage bill reductions during recession  
*JEL Classifications:* D21, D22, J30, J63

### **1. INTRODUCTION**

#### **1.1 General Background**

The evidence presented in this paper focuses on explaining how employers have acted in trying to adjust their total wage bill between 2009 and 2011. This is an update of analysis previously published in July 2010 covering the period from the third quarter of 2008 to the third quarter of 2009 (CSO, 2010).

The basic premise underlying the analysis is that employers can change their wage bill through three different components, namely:

- Level and composition of employment
- Hours worked by employees
- Basic rate of pay

The paper presents evidence as to how employers have adjusted their wage bills through these three components.

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<sup>1</sup> The author would like to acknowledge the very helpful comments from colleagues in the CSO. The views expressed are those of the author and the data presented are not official CSO data unless otherwise stated.

The data source for the analysis is the Earnings, Hours and Employment Costs Survey (EHECS). This survey was introduced by the CSO in 2005, initially for a limited number of sub-sectors of the economy. In the first quarter of 2008 the survey was expanded to cover all sectors of the economy. The introduction of EHECS sought to develop a comprehensive and comparable set of statistics on earnings, hours worked and employment.

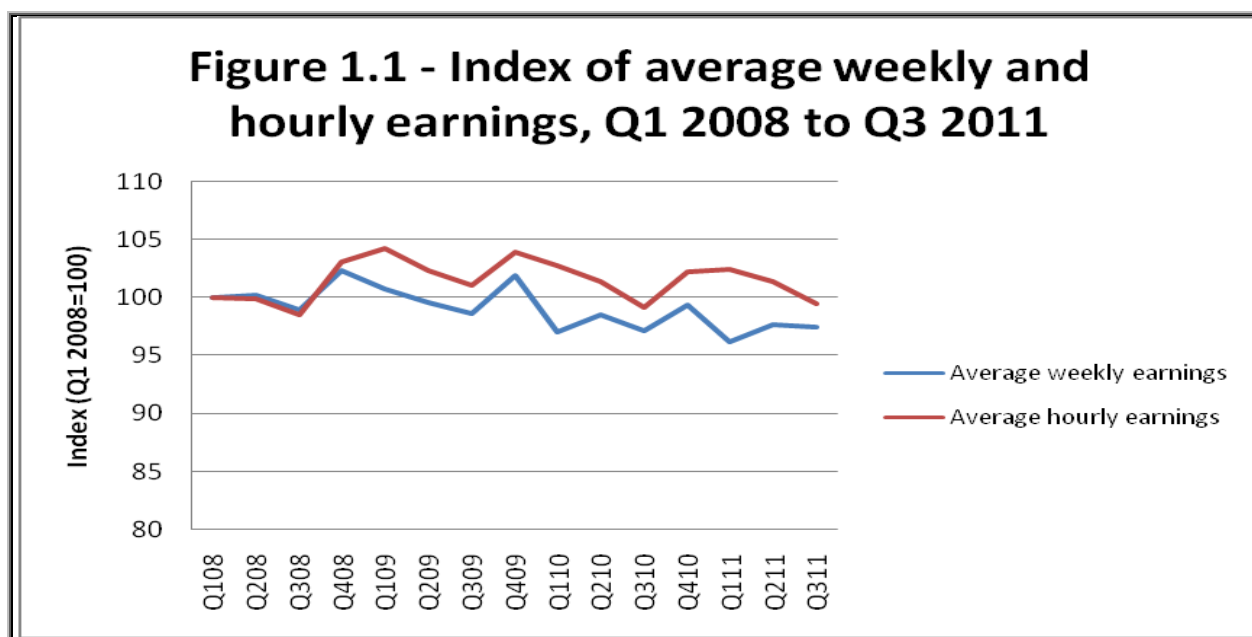
While this goal was achieved with the publication of the first set of results in late 2009, it was immediately evident that while the survey was fit for the purpose it was designed the range of regularly published statistics did not answer many of the questions data users had. Two particular questions raised were:

- To what extent did aggregate level movements in earnings mask the level of activity actually taking place?
- To what extent were changes in the composition of employment influencing average earnings? Specifically, as employment loss was heaviest in lower paid occupations to what degree were earnings being falsely inflated as a result?

In relation to the first question the context, both at the time in 2009 and more recently, has been relatively low levels of movement in published average earnings levels. Figure 1.1 shows that while fluctuations have occurred, the net effect on average hourly earnings from Q1 2008 to Q3 2011 has been only a slight drop (-0.5%), while average weekly earnings have fallen by somewhat more (-2.5%) due to reductions in average weekly paid hours (CSO, 2009 to date).

The bulk of this paper will focus on answering the first question by the presentation of evidence on the range of wage bill changing activities being engaged in by employers. In particular it will be shown that employers have often focused their activities on changes in employment which may or may not have any impact on average earnings levels for remaining employees. However, patterns of activity have changed over time and this will be discussed.

The nature of the analysis undertaken also allows some insight to be gained into the question of the effect of compositional change and this will be dealt with later in the paper.



## 1.2 Data source

As already mentioned the source of data for this analysis is EHECS. A comprehensive set of information on earnings (and its components), paid hours and employment is collected from a large sample of employers on a quarterly basis.

An aspect of EHECS relevant to the question of compositional change is that it incorporates a three way occupational split for all data collected. The three groups were:

- Managers, professionals and associated professionals
- Clerical, sales and service employees
- Production, transport, craft and other manual workers

As such it is not only possible to look at the change in employment at the aggregate level but also assess the impact on average earnings of changes in the composition of employment (across the three occupational groups). Other aspects of changes in the composition in employment cannot be corrected for using the EHECS data source but it does offer some insight into high level compositional change.

### **1.3 Treatment of the data and estimation**

Given that the purpose of this analysis is to assess changes made by employers over time it requires a longitudinal analysis of employer level data. Through EHECS, employers make quarterly returns and to facilitate longitudinal analysis these returns have been merged over time.

Previous analysis of this type was published in July 2010 using the reference period for change as Q3 2008 to Q3 2009 (CSO, 2010). One reason for the selection of this period was the relative infancy of the survey. For many enterprises data collection had only commenced in Q1 2008. Given that the three way occupational split was not an intrinsic part of payroll information for many if not all employers, some adjusted their initial setup over the early periods. The impact of these teething issues in the survey would not have any impact on key published series but did impact heavily on a longitudinal analysis at employer level. Analysis showed the majority of these issues to have been dealt with by Q3 2008.

In addition the period in question was considered to be worthy of particular focus given that this was the period of greatest recorded employment loss (-8.8% overall loss in employment as recorded by the QNHS with a reduction of 9.5% for employees) (CSO, 2008 to date).

This analysis is now updated to cover the following 2 years. One slight change from the earlier approach is that instead of focussing on a single quarter of the year the first three quarters of each year are compared. To facilitate this, the returns for the first three quarters have been combined at the employer level for 2009, 2010 and 2011 (for the remainder of this paper just referred to as 2009, 2010 and 2011). While this creates a partial overlap with the period covered by the earlier analysis it was felt worthwhile in order to filter out potentially short term changes which could arise when comparing single quarters in consecutive years. Furthermore three quarters of the employment loss between Q3 2008 and Q3 2009 occurred in the period up to Q1 2009 meaning the substantial part of the adjustment in that period took place in the non-overlapping quarters and as such this should not significantly influence longer term analysis.

For each employer a comparison is undertaken for consecutive years, i.e. the overall wage bill for Q1 to Q3 2009 is compared to the overall wage bill for Q1 to Q3 2010 and a similar analysis was undertaken to compare 2010 to 2011.

This micro level analysis is supplemented by aggregate level analysis across all the matched enterprises with results presented for different sub-sectors of the economy.

A substantial amount of data checking is performed on EHECS returns as a matter of course. Given the different focus of this particular analysis a range of additional edit checks were used and where necessary observations removed from the dataset for analysis. However, these checks removed less than 1% of returns.

A particular point of note for the updated analysis relates to a change to the survey which was implemented in Q2 2010. Following a detailed analysis of the data collection operation a decision was taken by the CSO to shorten the form for smaller enterprises. This new 'Form B' has removed the occupational split for the enterprises involved. This substantially reduced the response burden for these enterprises. However, it did mean the returns for these enterprises could not be used in the estimation of standardised average weekly paid hours and average hourly earnings necessary for this analysis.

As such, this mean two datasets were created for separate stages of the analysis. Stage 1 analysis focuses on total wage bill and employment change and uses the full set of matched enterprises. Stage 2 analysis, which estimates standardised average hours and standardised hourly earnings, uses a reduced dataset involving just those enterprises who continued to provide the occupational breakdown (covering approximately 90% of the employment of the full matched group).

#### **1.4 Sample size and representativeness**

Obviously the strength of inference we can take from this analysis depends on how representative the matched dataset is. EHECS is a broadly based survey. It covers all sectors of the economy with the exception of agriculture, forestry and fishing. Responses received each quarter typically cover close to 70% of all employees in the state (i.e. over 1 million of the 1.5 million active employees in the state).

The matching process used in this analysis required that enterprises provided returns consistently over time. The EHECS sample is quite stable over time and all medium to large enterprises (those with 50 employees or more) are continuously covered. Sampling fractions and rotation are applied for smaller enterprises.

As such the matched dataset will inevitably be far more representative of larger enterprises than smaller enterprises. Specifically while the matched returns cover approximately 80% of employees in medium to large enterprises over time the coverage for smaller enterprises is approximately 1% of employment. In overall terms the analysis covered approximately half of all employees in the state (between 750,000 and 800,000 depending on the period).

Given the particularly low representation of small enterprises in the matched sample it has been decided not to weight by size class as might typically be done given the sampling approach used. Given these concerns results for small enterprises are not presented separately although these enterprises have not been removed from the dataset entirely.

The results from the matched dataset were assessed against two other sources of earnings and employment data to establish the level of representativeness. The first source was the estimate of compensation of employees derived for the national accounts. The second source was the P35 analysis dataset. Both these sources confirmed that the level of reduction in the wage bill as recorded in this analysis was substantially in line with the trend in both the alternative sources when the differences in coverage, timing etc. were considered. In particular this assessment confirms that the analysis is highly representative of medium to large enterprises but less so of small enterprises. Given the proportion of employment accounted for by these large enterprises this represents a strong basis for analysis. The issue of representativeness and in particular the impact of the under-representation of small enterprises is discussed in more detail in annex 1 to the paper.

Another obvious point to note is that EHECS only covers enterprises, i.e. self-employed people are not covered.

#### **1.5 Detailed data tables**

The main findings in the paper are presented in graphs. The detailed tables supporting the analysis have been prepared in excel spreadsheets and are being made available with this paper as supporting material.

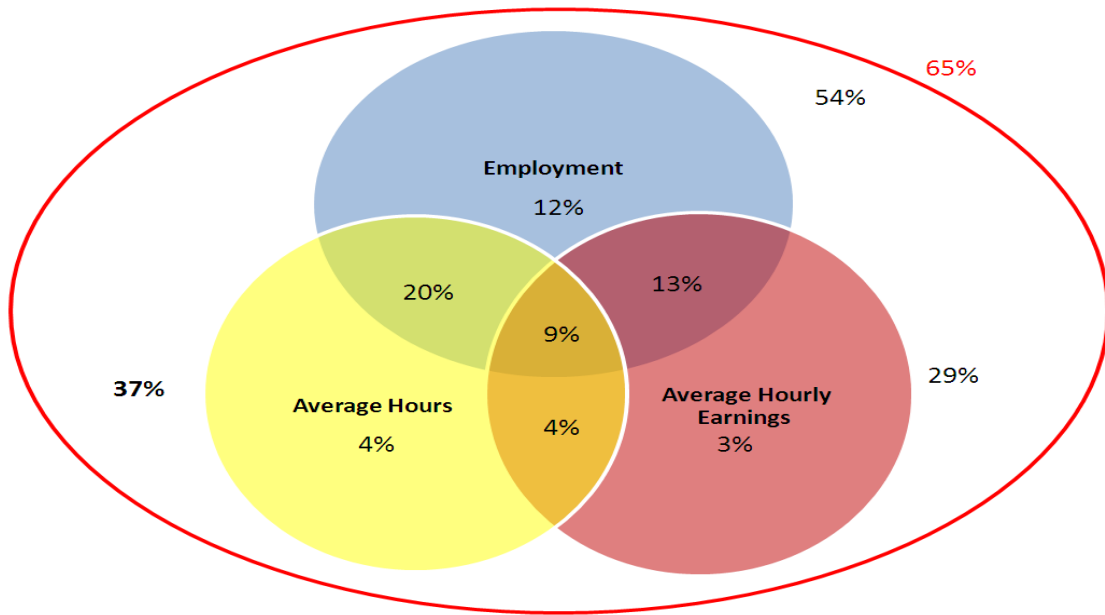
### **2. MAIN FINDINGS**

The previously published findings relating to changes from Q3 2008 to Q3 2009 showed that nearly two thirds of all enterprises reduced their wage bill by more than two percent in the year to the Q3 2009 (CSO, 2010). The total reduction in the wage bill among the matched enterprises was 7%. Some of the other key findings included:

- In that period (pre the public sector pay cut) a higher proportion of private sector enterprises had cut their wage bill than public sector enterprises (67% compared with 37%). The total wage bill of the matched private sector enterprises was cut by 11% while the wage bill of the matched public sector enterprises was unchanged. It can be noted this excluded the effect of the pension levy as the levy did not reduce gross earnings as paid by employers so it would not appear as a cut in the wage bill even though it reduced the take home pay of public servants.
- One quarter of enterprises (25%) had increased their wage bill by more than two percent over the year.
- The most frequently cut component of the wage bill was employment followed by average weekly paid hours. Average hourly earnings were the least frequently cut component and indeed a greater proportion of enterprises had increased average hourly earnings over the year rather than decreasing them.

The range of actions of wage cutting enterprises is represented in Figure 2.1 below.

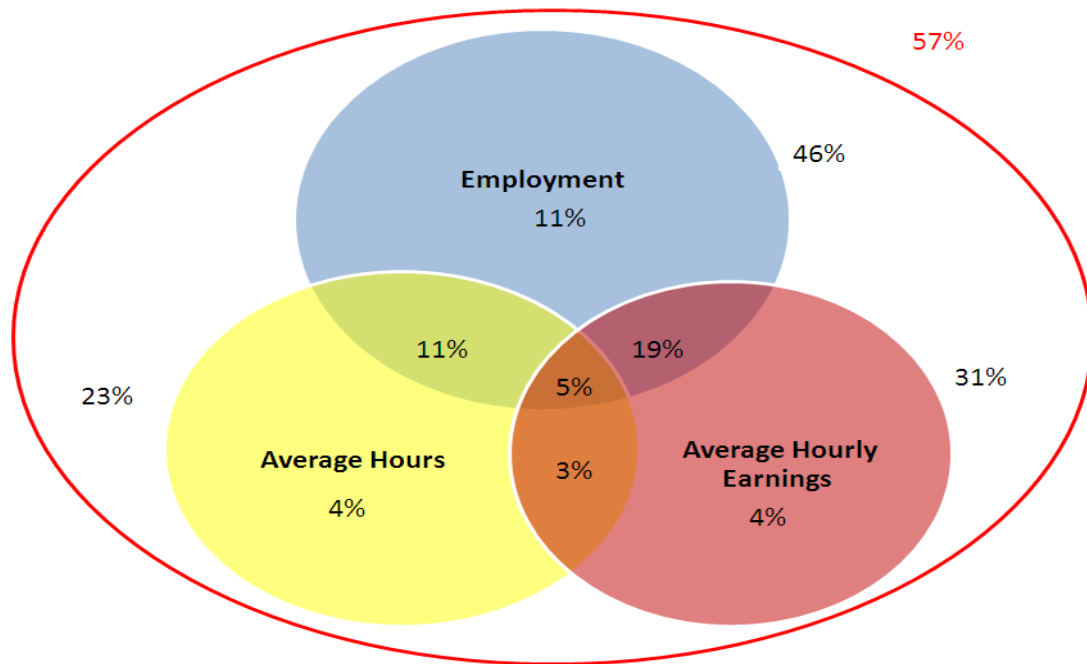
**Figure 2.1 – How enterprises cut their wage bill, Q3 2008 to Q3 2009**



This shows that 54% of all enterprises cut their wage bill using employment as part of the cut. The equivalent percentages for average hours and hourly earnings were 37% and 29%. It was also possible to estimate what combinations of activities enterprises used in implementing changes. Specifically 9% of all enterprises cut their wage bill and cut all 3 components in the process. The single most common combination of actions was a cut in both employment and average hours. Also, notably a relatively low proportion of enterprises (11% in total) made a cut in the wage bill but did not cut employment in the process.

Over the following two years the nature of activity evolved. Between 2009 and 2010 the overall wage bill continued to fall, albeit to a slightly lesser degree (-6%), and this continued to be most heavily driven by reductions in employment. On this occasion the relatively greater wage bill cut was recorded for matched public sector enterprises (-9% compared with -4% for private sector enterprises). However, cuts in hourly earnings made up a larger part of this reduction than in the earlier period (see Figure 2.2). As will be shown later in the paper this was heavily associated with the public sector pay cut.

**Figure 2.2 – How enterprises cut their wage bill, 2009 to 2010**



Between 2010 and 2011 a moderate reduction in the total wage bill was recorded (-1%). In line with this, the range of activities was more balanced, i.e, both increases and decreases were being recorded at similar frequencies.

These findings highlight a variety of issues which put context on wage setting activities. In particular while headline earnings indicators may be quite stable over time this masks the level of activity engaged in by enterprises with the majority of activity in recent years focussing on employment cuts with average hours and average hourly earnings making contributions to the overall wage bill reduction at different points in time.

The remainder of this paper presents more detailed findings on the level of change in wage bills which has been reported and how this has been implemented.

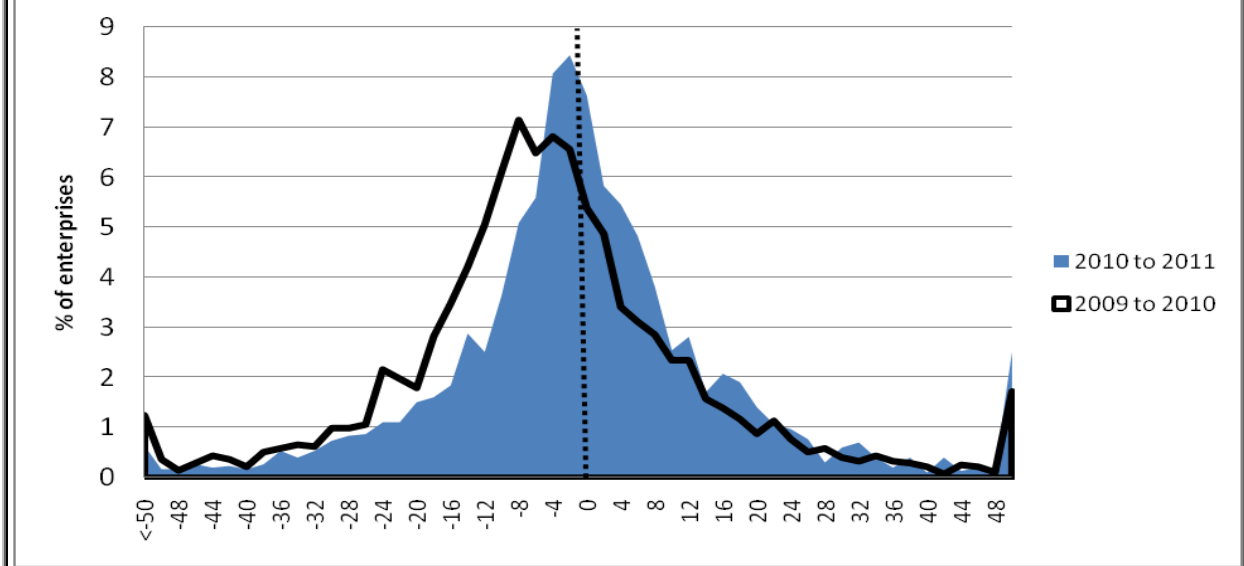
### **3. UPDATED FINDINGS: OVERALL WAGE BILL CHANGE**

#### **3.1 Total wage bill change**

The total wage bill reduction among the full set of matched enterprises was 6% between 2009 and 2010. Between 2010 and 2011 a more moderate reduction of 1% was recorded.

These overall changes are put in better context by considering the full distribution of wage bill changes across enterprises as shown in Figure 3.1 below.

**Figure 3.1 - Distribution of wage bill changes, all sectors, 2009 to 2010 and 2010 to 2011**



The transparent area bordered by the heavy black line represents the distribution of enterprises by the percentage wage bill change (the x-axis) between 2009 and 2010, while the shaded area represents the change between 2010 and 2011. The dotted black line represents no change in the wage bill. As can be immediately seen heavier cuts were far more prevalent between 2009 and 2010 than in the following year. Specifically, 57% of enterprises cut their wage bill by more than two percent in the first year, the comparable figure for the following year was 42% (recall this had been 65% between Q3 2008 and Q3 2009). It is also clear that the black line is above the shaded area at all more significant levels of wage bill cuts. Specifically, 30% of enterprises recorded a reduction of greater than ten percent between 2009 and 2010 while this applied to 18% of enterprises between 2010 and 2011.

On the opposite side of the scale it can be noted that wage bill increases continued to be recorded for reasonably substantial proportions of enterprises across both periods. Specifically, 31% of enterprises recorded increases of more than two percent between 2009 and 2010, rising to 42% in the following year.

Indeed while the proportion of enterprises cutting their wage bill was far higher than those increasing their wage bill for the first year covered (57% vs 31%), this was no longer the case between 2010 and 2011 with equal proportions of enterprises cutting and increasing their wage bills. This explains the relatively moderate 1% total reduction recorded in the later period.

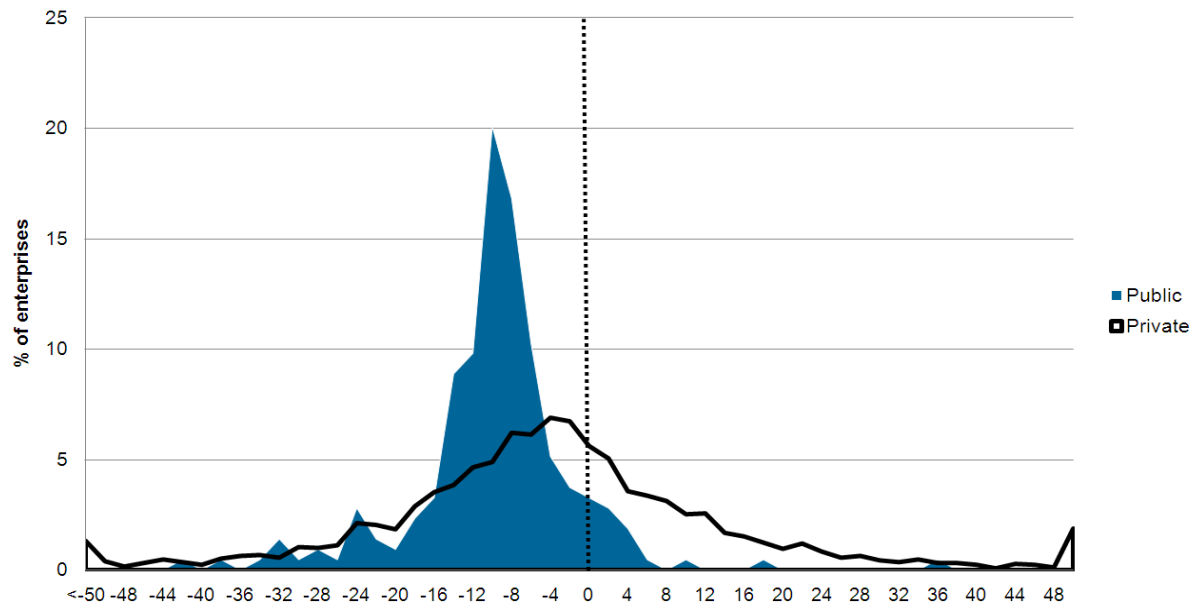
### 3.2 Public/private sector changes

While a far heavier wage bill reduction had been recorded in the private sector between Q3 2008 and Q3 2009, heavier reductions have been recorded in the total wage bill of the matched public sector enterprises since.

Between 2009 and 2010 the wage bill reduction in the public sector was 9% compared with 4% in the private sector. Between 2010 and 2011 a reduction of 2% was recorded for the public sector while no change was recorded for the matched private sector enterprises.

It is again useful to consider the distribution of wage bill changes for public and private sector enterprises as shown in Figure 3.2 for 2009 to 2010 and 3.3 for 2010 to 2011.

**Figure 3.2 - Distribution of enterprises by level of wage bill change by sector, 2009 to 2010**



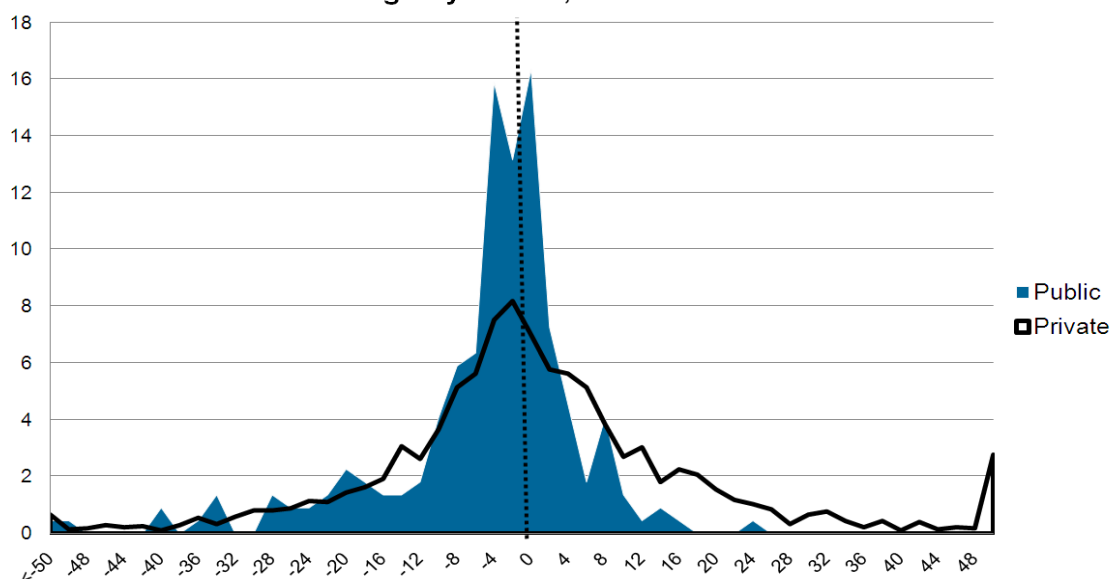
In considering the change between 2009 and 2010 one obvious context is the public sector pay cut which averaged between 5% and 6% of gross pay. This, along with initiatives to cut the number of employees in the public sector leads to an unsurprising cluster of public sector enterprises with reductions in their pay bill. This is demonstrated in the fact that 86% of public sector enterprises cut their wage bill by more than two percent over the period. The heaviest concentration of enterprises is found in the 4% to 14% reduction range with 66% of public sector enterprises falling within these bounds. A low number of employers in the public sector did record wage bill increases over the period (7% with increases of more than two percent) but this can be attributed to increases in employment in limited parts of the public sector, which in itself is not surprising given increasing demands for certain public services during the downturn.

The range of wage bill changes in the private sector is far wider as can be seen in Figure 3.2, but on balance wage bill cuts were more prevalent than increases with 54% of private sector enterprises having cut their wage bill by more than two percent between 2009 and 2010 while 34% had increased their wage bill by more than two percent.

Figure 3.3 shows the distribution of changes which were recorded between 2010 and 2011 and as expected, given the overall distribution discussed above, changes are more closely clustered around zero and the balance of reductions and increases is more even. Notwithstanding this it continued to be the case that wage bill reductions were more prevalent in the public sector than the private sector (49% compared with 41%) and wage bill increases were more prevalent in the matched private sector enterprises (44% compared with 21% in the public sector). The net effect of these varied changes was the overall wage bill reduction of 2% for the public sector while the changes in the private sector enterprises cancelled each other out leaving the total wage bill unchanged.



**Figure 3.3 - Distribution of enterprises by level of wage bill change by sector, 2010 to 2011**



### 3.3 Changes in sub-sectors

Results for more detailed sub-sectors within the public and private sectors are presented in the supporting tables being made available with this paper (tables A1 and A2). Specifically, 11 sub-sectors are presented for the private sector while 4 sub-sectors of the public sector are included. The main points of note include:

- The construction sector (within the private sector) had the greatest decrease in its wage bill over both periods covered (this had also been the case between Q3 2008 and Q3 2009 when a decrease of 28% had been recorded in the total wage bill of the matched enterprises). Between 2009 and 2010 the reduction was 23% followed by 7% between 2010 and 2011.
- Between 2009 and 2010 reductions in the total wage bill were recorded for the matched enterprises across all subsectors of the economy with the exception of private sector industry where no change was recorded.
- Between 2010 and 2011 a more mixed range of activities can be seen, particularly in the private sector where reductions were recorded for 5 of the sub sectors, no change was recorded for 2 sectors and increases were recorded for 4 sectors. As mentioned earlier the net effect of this was that the total wage bill of the matched private sector enterprises as a whole was unchanged between 2010 and 2011.
- The range of activity across the sub sectors of the public sector was relatively narrow. Compounding the results across the two year period suggests total wage bill reductions across the four presented sub-sectors were in the range of 9% to 12%.

## 4. EMPLOYMENT CHANGE

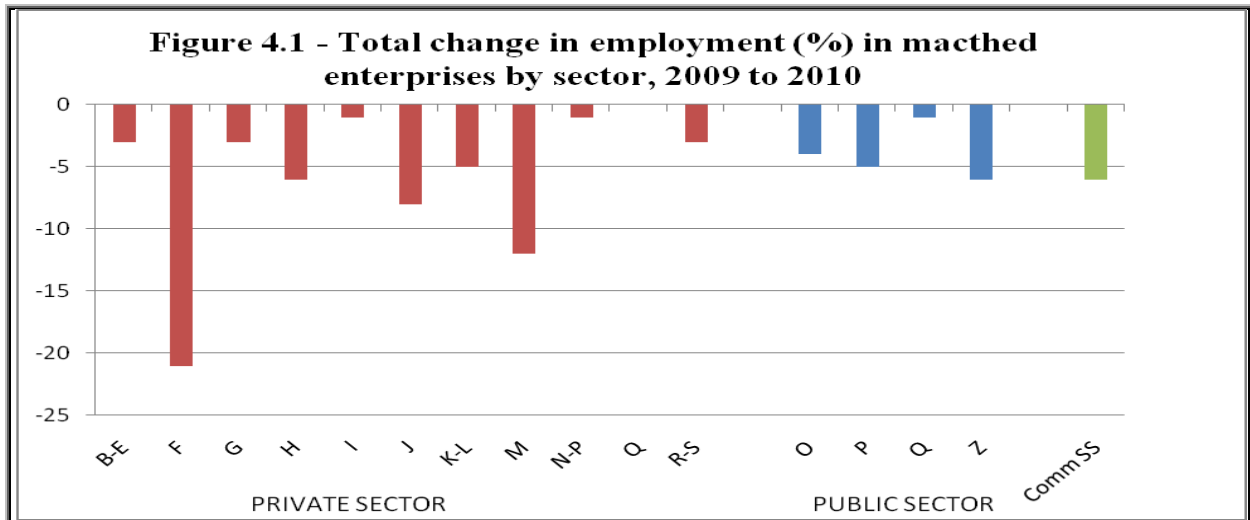
The analysis for Q3 2008 to Q3 2009 showed that employment was the component of the wage bill most frequently cut by enterprises that were reducing their wage bill. This will be discussed in more depth in later sections of the paper alongside changes in average hours and average hourly earnings. However, it can be noted that it continued to be the case that employment was the most volatile component of the wage bill with regard to the range of increases and decreases. This in itself is not surprising as the range of change around hours worked and hourly earnings is likely to be more tightly bound, e.g. while employment, particularly in small enterprises, could increase in multiples, average hours worked and hourly earnings are less likely to change to such great degrees.

Total employment in the matched enterprises fell by 4% between 2009 and 2010. The same level of employment reduction was recorded for both public and private sector matched enterprises (-4%).

By way of comparison estimates of job creation and destruction from a Forfás survey showed that job destruction rates in 2010 were 9% while job creation rates were 7% implying a net 2% destruction of jobs

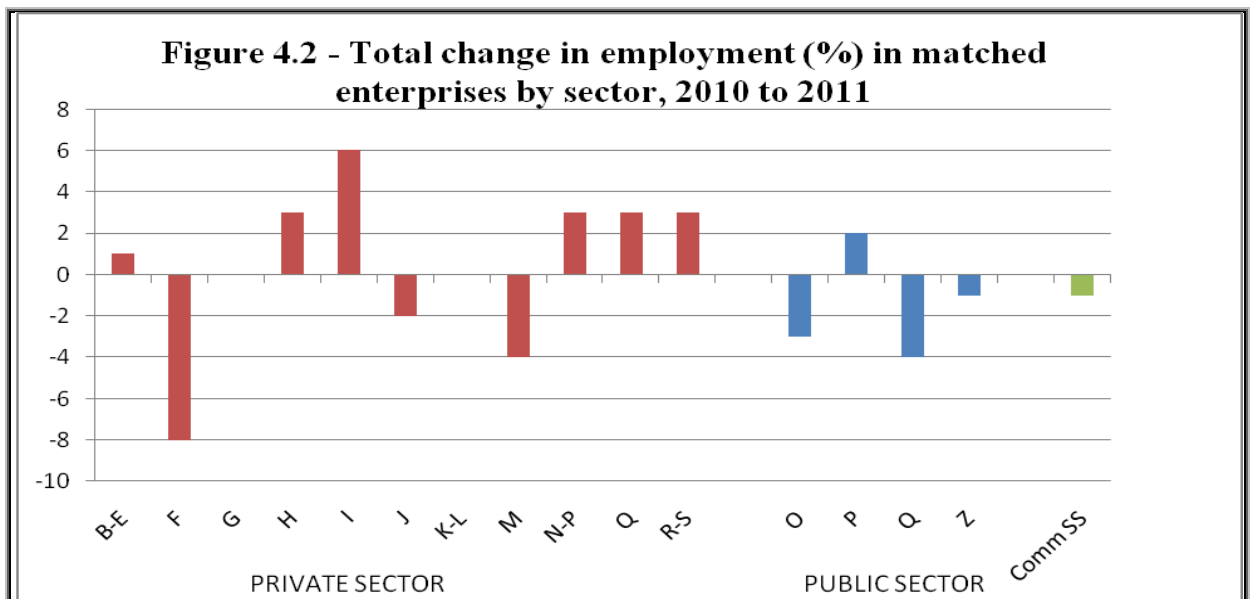
(Lawless 2012). The reduction in employees recorded in the QNHS was 3.8% over the comparable period so on balance this suggests the matched enterprises were reasonably representative in terms of employment change.

However, while the change in the subsectors of the public sector was within a relatively narrow range (-1% to -6%) a wider range was recorded in the private sector. Not surprisingly the greatest reduction in the private sector was recorded in construction (-21%) followed by professional scientific and technical. All sub sectors with the exception of private sector health recorded some reduction in employment over the year (see Figure 4.1).



Reflecting this overall reduction the majority of enterprises had cut their employment level by more than two percent between 2009 and 2010 (55% overall). Just over half as many enterprises (29%) had increased their employment levels by more than two percent. These proportions varied heavily across sub sectors but in the large majority of cases employment cuts were far more prevalent than employment increases.

Details for the change between 2010 and 2011 are presented in figure 4.2. In line with official employment estimates a lesser change in employment was recorded between 2010 and 2011 in the matched enterprises. Overall employment was unchanged for the matched group over the period and the range of employment changes within enterprises was both far narrower and more evenly balanced than the in previous year. While a significant proportion of enterprises had cut their employment level by more than two percent (39%) a slightly higher proportion had recorded increases (42%).



For the matched public sector enterprises a reduction of 2% was recorded while an increase of 1% was recorded for the matched private sector enterprises. Across the 15 sub sectors covered for both the public and private sectors the total percentage change in employment was three percent or less in 11 of the 15. The single largest change was the reduction in construction of 8% although even this should be seen in the context of much heavier decreases in earlier periods.

As such the lack of change in total employment in the group between 2010 and 2011 is a result of two things:

1. Relatively lesser volatility in employment than previously – while changes were still recorded frequently they were in the main in a narrower range.
2. Balancing out of increases and decreases across sectors – in the previous year all sectors had recorded decreases with the exception of one where no change had been recorded. However, between 2010 and 2011 there was a more even balance with some sectors recording increases and a similar number recording decreases.

*Key to figures 4.1 and 4.2*

<b>Private Sector</b>	<b>Public Sector</b>
B-E Industry	O Public administration and defence
F Construction	P Education
G Wholesale and retail	Q Human health and social work
H Transportation and storage	Other Public Sector
I Accommodation and food services	
J Information and communication	<b>Comm SS Commercial semi-state</b>
K-L Financial , insurance and real estate	
M Professional, scientific and technical	
N-P Administrative and support services and education	
Q Human health and social work	
R-S Arts, entertainment, recreation and other social service activities	

## 5. STANDARDISED AVERAGE WEEKLY PAID HOURS

Sections 5 and 6 of this paper cover changes in average weekly paid hours and average hourly earnings recorded between periods. However, as discussed in the introduction to this paper, and in more detail later, changes in composition of employment can have an impact on these averages, both at the enterprise level and as a consequence at aggregate levels. To attempt to correct, in so far as possible, for these changes in composition a process of standardisation of hours and hourly earnings has been used.

An illustration of the standardisation process was provided in the publication from July 2010 (CSO, 2010). In summary the process involves a standardisation at all stages of estimation in the case of average weekly paid hours and average hourly earnings. Specifically it involves a number of steps:

- For matched enterprises weight the hourly earnings of both periods according to the split of occupational employment in the earlier period (i.e. answering the question ‘what would average hours/hourly earnings have been for the enterprise in both periods on the basis of the same composition of employment across the three occupations?’).
- Apply fixed weights to all the matched enterprises to estimated standardised averages at sector and all sectors level (i.e. answering the question ‘what would average hours/hourly earnings have been had the composition of employment across enterprises remained the same?’).

The standardised averages both at enterprise and sectoral level are then compared to estimate the level of underlying change in average hours and average hourly earnings. It is possible that unmeasured compositional change (e.g. an enterprise retaining higher paid managers while laying off lower paid managers) could still exist and account for some changes recorded but this analysis at least accounts for compositional change across

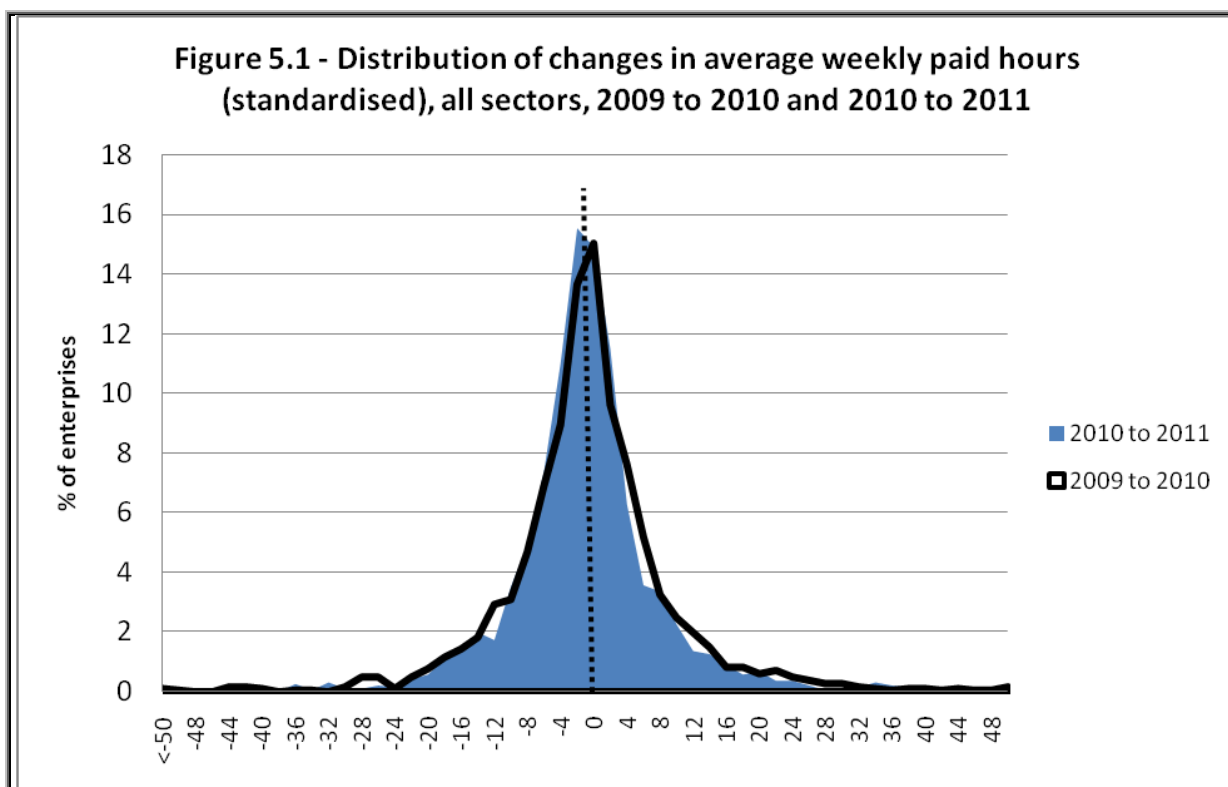
occupations (e.g. laying off clerical staff but retaining managers) and across enterprises (e.g. lower paying enterprises laying workers off).

In the previously published analysis it was seen that there was a 2% reduction in standardised average hours between Q3 2008 and Q3 2009, with approximately half (51%) of all enterprises recording decreases of more than two percent while just less than one third (31%) had recorded increases of greater than two percent (CSO, 2010). While decreases were recorded in the majority of sub sectors the level of change was less than recorded in the case of employment.

Updated analysis shows little if any change in standardised average hours both for 2009 to 2010 and also 2010 to 2011. Indeed at the overall level standardised average hours were unchanged over both years. In each consecutive pair of years close to one third of all matched enterprises had increased their average hours with similar proportions having recorded decreases or little change. As such a relatively narrow and balanced distribution could be seen in the range of activity as shown in Figure 5.1.

What is particularly notable is that the distribution of changes made by enterprises is very similar between the two periods. It is also clearly the case that the distribution is far narrower than the distribution seen for total wage bill change as discussed earlier. Indeed approximately 80% of all enterprises had changes of less than ten percent while the comparable figure in the case of total wage bill change was between forty and fifty percent for both years covered.

Notwithstanding this, the fact that one in five enterprises had changed their average hours by ten percent or more between consecutive years on both occasions is worthy of note and highlights the fact that change, even of relatively greater orders of magnitude, was not uncommon even where this did not manifest itself in substantial changes in aggregate level averages.



Little change was recorded in either the public or private sectors across both periods. Specifically the public sector was unchanged in both years while a slight increase of 1% was recorded for matched private sector enterprises between 2009 and 2010 followed by no change in the following year.

Similarly, for the more detailed sub-sectors (tables C1 and C2 in the supporting tables) relatively little change was recorded with changes being 2% or less in all but one case. The exception was in the construction sector

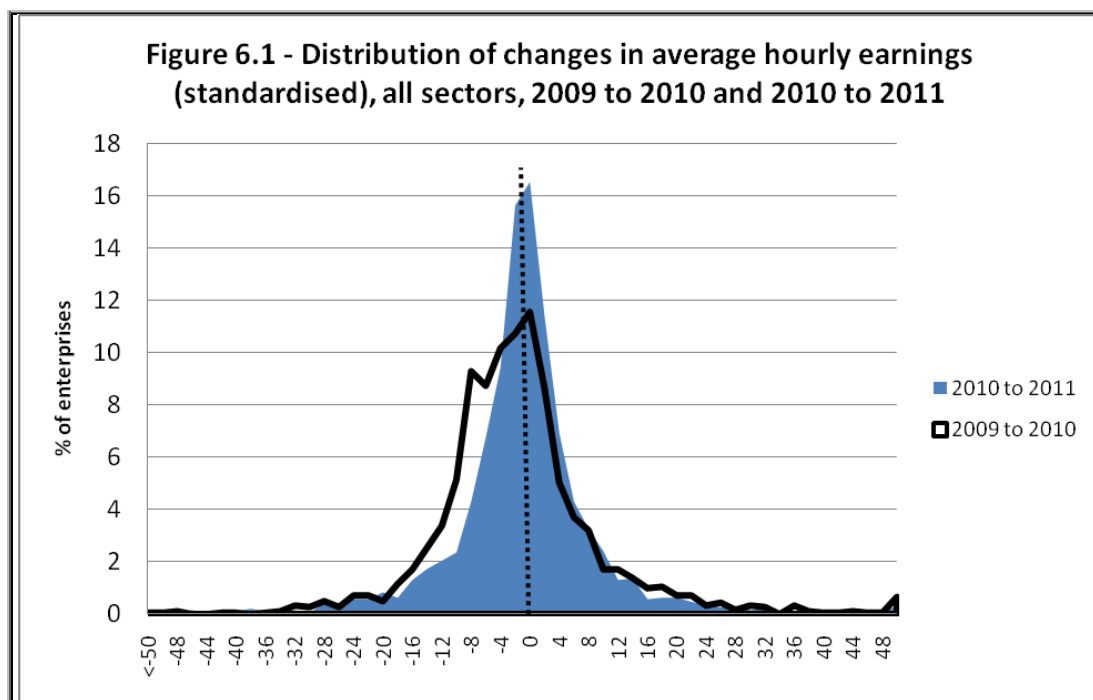
where a 4% increase was recorded between 2010 and 2011, suggesting that while employment was still falling in the sector there was perhaps some underlying increase in average hours worked for remaining employees.

## 6. STANDARDISED AVERAGE HOURLY EARNINGS

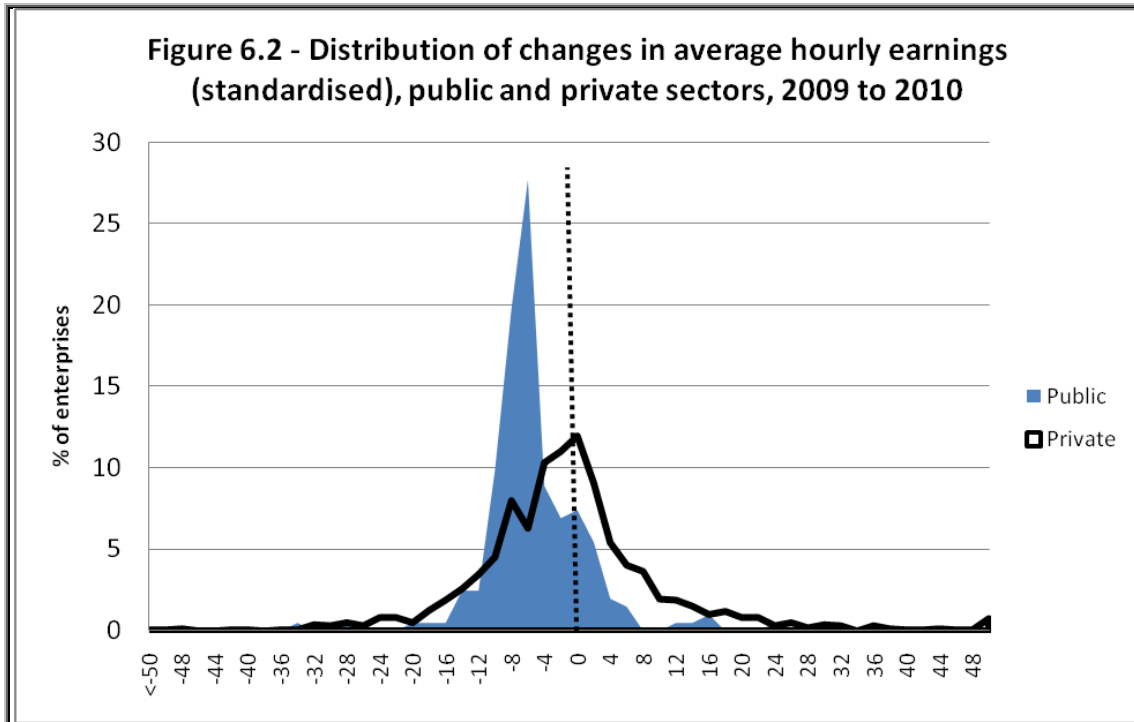
In the previously published results a small increase of 1% had been recorded in average hourly earnings (standardised) between Q3 2008 and Q3 2009. A larger proportion of enterprises had recorded increases than decreases.

This changes when we look at the comparison between 2009 and 2010 with a reduction of 2% being recorded for all matched enterprises. Between 2010 and 2011 no change was recorded.

In common with standardised average weekly paid hours the distribution of changes was far narrower than seen for employment and the total wage bill with approximately 80% of matched enterprises having recorded changes of less than ten percent. However as can be seen in Figure 6.1 there is a different profile between the two years with a larger group of enterprises reporting heavier average hourly earnings reductions between 2009 and 2010 than in the following year. This accounts for the 2% reduction overall in average hourly earnings in that period.



When we look at the split between public and private we can see that the source of this overall reduction is the public sector pay cut with a 5% reduction being recorded in the public sector while standardised average hourly earnings in the private sector were unchanged over the year. Figure 6.2 shows that between 2009 and 2010 there was a clear cluster of public sector enterprises recording hourly earnings reductions. Indeed, approximately three quarters of all the matched public sector enterprises recorded reductions of between zero and ten percent. In the private sector the situation was more balanced with 40% of private sector enterprises recording a reduction of between zero and ten percent while 34% recorded increases in that range.



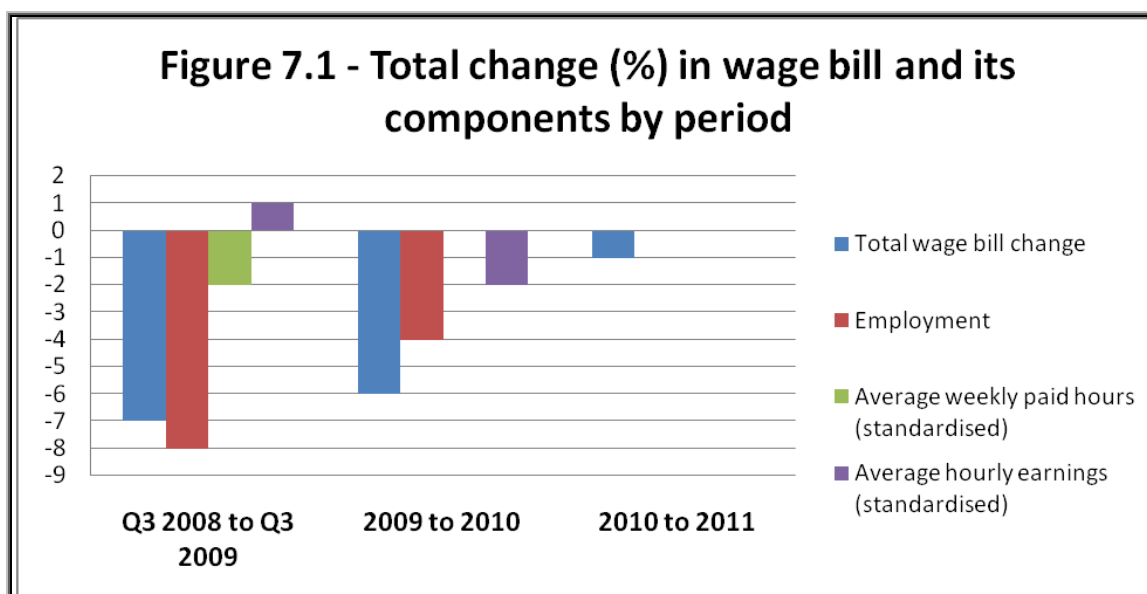
The more detailed sub sectors as presented in the supporting tables (tables D1 and D2) also show that reductions were more prevalent across different sectors between 2009 and 2010 than they were between 2010 and 2011. However, the levels of change were of relatively low order of magnitude in the main and increases and decreases heavily balanced each other out which accounts for the relative lack of change in hourly earnings (-2% between 2009 and 2010 and unchanged between 2010 and 2011).

## 7. WAGE BILL CHANGES BY COMPONENT – COMBINED VIEW

Having discussed the individual components of the wage bill it is also possible to look at them in a combined manner both at aggregate level and also at the level of individual enterprises.

### 7.1 Aggregate effect of different components

Starting with the aggregate level, Figure 7.1 below shows overall wage bill change and component change for each period covered by the analysis. In this case note the partial overlap between the first and second periods as discussed earlier in the paper.



Between Q3 2008 and Q3 2009 clearly employment made the heaviest contribution to the overall wage bill reduction of 7% (8% reduction in employment). In addition to the employment reduction, a 2% reduction in average weekly paid hours was recorded and a slight increase in hourly earnings partially offset the decreases in the other components. As such the primary cutting activities were targeted at reduction in the volume of work rather than unit pay rates.

Between 2009 and 2010 employment continued to be the heaviest contributor to the 6% reduction in the wage bill change (4% reduction in employment). On this occasion no change was recorded in average hours indicating that the level of volume reduction was lesser than in the earlier period and entirely focussed on employment. The hourly earnings reduction (-2%) also contributed to the overall reduction between 2009 and 2010 which as discussed earlier was primarily due to the public sector wage cut.

Between 2010 and 2011 little change was recorded in the overall wage bill (-1%) or any of its components.

## **7.2 Enterprise level activity: changes in multiple components**

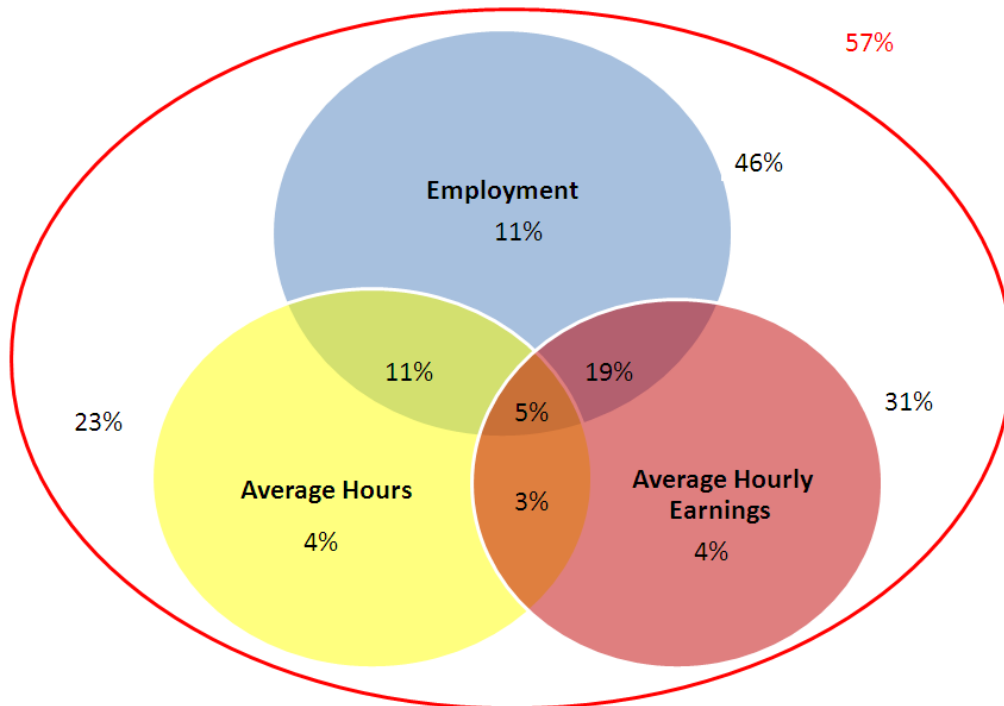
While the aggregate level view is useful in understanding the source of overall change in the wage bill, as discussed throughout the paper aggregate level change masks the frequency of changes at the enterprise level which may substantially balance out. Specifically in no case is it true that aggregate reductions are the result of reductions across all enterprises in the group in question, rather an indication that while increases and decreases were recorded, decreases were on balance more prevalent.

Also when taking a combined view of the different components of the wage bill it is possible to assess what combination of actions enterprises have taken. For example, enterprises who cut their wage bill may do so by reducing their employment level but actually increase hours worked for remaining employees. The next part of the paper discusses the combined actions taken by enterprises. This has already been discussed in summary terms in section 2 of the paper.

### **7.2.1 2009 to 2010**

Given that the majority of enterprises cut their wage bill between 2009 and 2010 (57%) it is valid again to look at the group who cut their wage bill see what combination was used to achieve this. Figure 7.2 has already been presented in section 2 but is discussed in more detail here.

**Figure 7.2 – How enterprises cut their wage bill, 2009 to 2010**



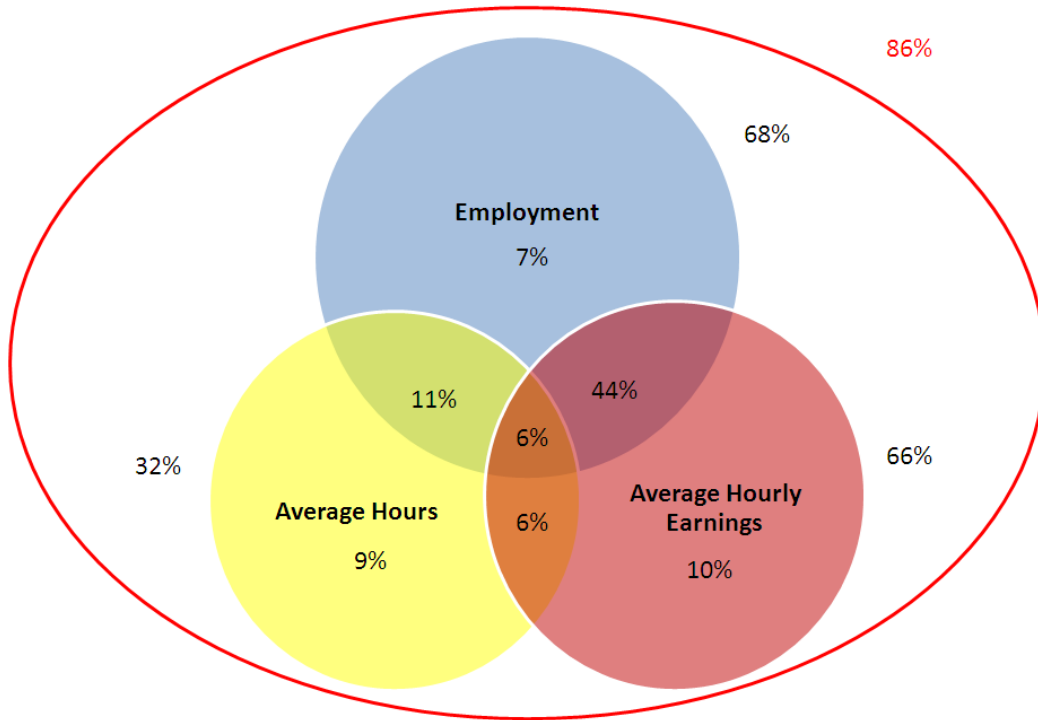
As with Q3 2008 to Q3 2009 the large majority of enterprises who cut their wage bill between 2009 and 2010 used employment as part of that cut with 46% of all enterprises falling into this group. Given that 57% of enterprises cut their wage bill by more than two percent this indicates that approximately four fifths of that group used an employment reduction as part of the cut.

In common with the earlier period the other two components were less frequently cut, but on this occasion their relative importance has been reversed. Specifically between Q3 2008 and Q3 2009 average hours had been the second most frequently cut component for enterprises that cut their wage bill (37% versus 29%). Between 2009 and 2010 average hourly earnings had been cut more frequently (31% versus 23%).

This higher prevalence of average hourly earnings cuts can be primarily linked to the public sector pay cut. This can be seen from Figure 7.3 below. While employment remained the most frequently cut element (68% of all public sector enterprises cut their wage bill with employment as part of the cut) average hourly earnings were cut almost as frequently (66%). Furthermore the most frequently recorded activity was to cut wages using both employment and hourly earnings as part of the cut. Specifically 44% of all public sector enterprises cut their wage bill using both those components as part of the cut. This is more than half the full group of public sector enterprises who cut their wage bill.

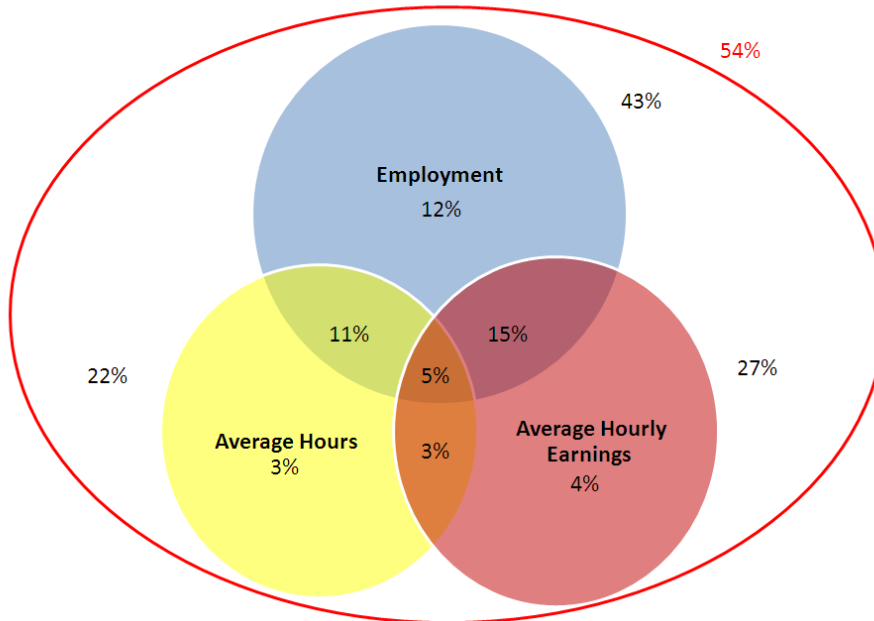


**Figure 7.3 – How public sector enterprises cut their wage bill, 2009 to 2010**



Looking at the private sector, Figure 7.4 shows us that employment was clearly the most frequently cut component. While 54% of all matched private sector enterprises cut their wage bill by more than two percent between 2009 and 2010, 43% did so using employment as part of the cut. The next most frequently cut component was average hourly earnings (27% of enterprises). As seen at the overall level this is a reversal of the trend seen between Q3 2008 and Q3 2009 when average hours had been more frequently cut than average hourly earnings.

**Figure 7.4 – How private sector enterprises cut their wage bill, 2009 to 2010**

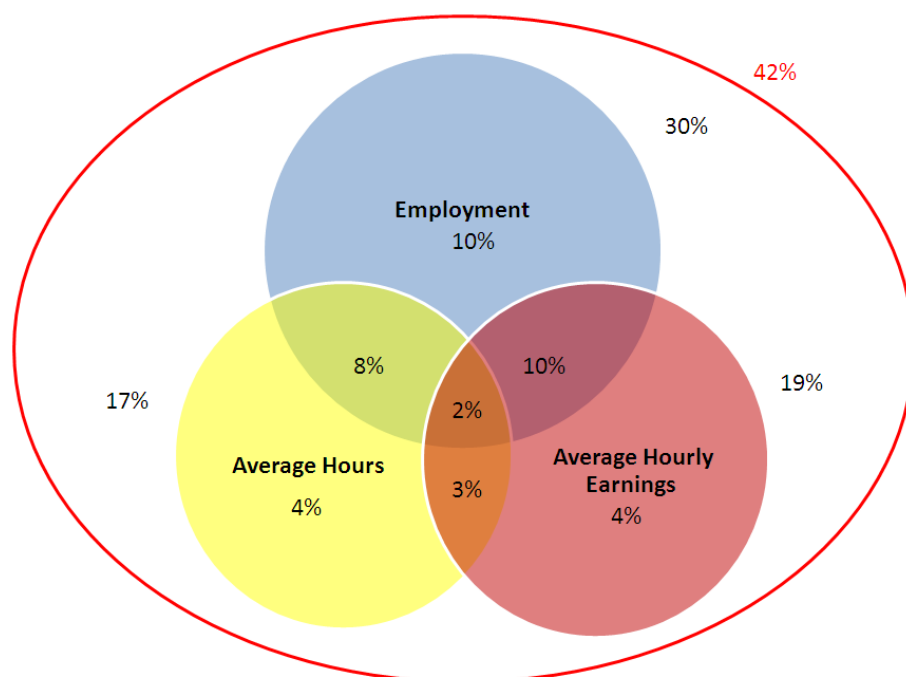


### 7.2.2 2010 to 2011

Looking at 2010 to 2011 it has already been noted that the situation was more neutral with the same proportion of enterprises reducing and increasing their wage bills (42%). In the case of the enterprises who cut their wage bill it could yet again be seen that employment was the most frequently used component (30% of enterprises cut employment as part of a wage bill cut) while the other two components were used with the same frequency (18%).

Given that the situation was more balanced in between 2010 and 2011 it is perhaps useful to focus in slightly more detail on enterprises that increased their wage bill. This was now the case for 42% of enterprises having been 31% in the previous year and 25% between Q3 2008 and Q3 2009.

**Figure 7.5 – How enterprises increased their wage bill, 2010 to 2011**



The first thing to note regarding Figure 7.5 is that all the activities are at lower orders of magnitude than the cutting activities which were undertaken in earlier periods. Nonetheless, employment was the most frequently increased component with 30% of enterprises increasing their wage bill with employment as part of that increase. The majority of those did so in conjunction with at least one other component (10% increased both employment and hourly earnings and 8% increased both employment and average hours).

### 7.3 Some conclusions regarding changes in multiple components

Putting aside the changes over time which have already been discussed one conclusion which could be drawn is that whether enterprises are increasing or decreasing their wage bill it is a relative rarity for this to be done without involving employment levels as part of the change. Table 7.1 below summarises this, showing that across periods and both for increases and decreases approximately one in ten enterprises made wage bill changes which did not involve employment as part of the change. It can also be seen that even where another component was used to cut the wage bill (such as the public sector pay cut which applied to many public sector enterprises) it was generally paired with an employment cut.

<b>Table 7.1 - Changes in wage bill not involving employment by period (%)</b>			
	Q3 2008 to Q3 2009	2009 to 2010	2010 to 2011
<b>% of enterprises with wage bill decrease</b>	65	57	42
% of enterprises with wage bill decrease excluding employment cut	11	11	11
<b>% of enterprises with wage bill increase</b>	25	31	42
% of enterprises with wage bill increase excluding employment increase	11	9	11

This finding is usefully put in the context of discussion surrounding the role of earnings in the recovery from the economic downturn. The need for the reduction in wages to improve competitiveness has often been discussed. This takes additional significance given the fact Ireland shares a common monetary policy with other members of the euro area and as such lacks the ability to alter exchange rates in the pursuit of greater competitiveness. In such a scenario, wage and price inflation take added significance particularly with reference to the expected length of any adjustment process following the downturn.

As discussed by Lane (2009, 2010) it is generally accepted that shocks of the nature experienced in Ireland are expected to lead to temporary shifts in wages, prices and employment levels. However, as discussed extensively in economic literature, even in recession, nominal wage rigidity is often seen and recently observed to have occurred in Ireland given the relative lack of change in aggregate earnings indicators (Krugman, 2012). Different theories have been put forward for this, such as the role of unions in preventing wage cutting by employers, or that employers use stable wages to facilitate lower wage levels in the longer term (i.e. employees accept lower wages in return for the expectation of stability). Bewley (1999) studied this issue by interviewing employers and others involved in the labour market and found that contrary to various theories the primary reason for sticky nominal wages during recession was employers concern at the effect on morale of their employees and that the cost associated with this would more than outweigh the cost saving achieved.

The arguments in favour of wage adjustment are also often covered. While acknowledging Bewley's finding regarding the effect on employee morale of nominal wage cuts, Lane (2009) argued that such morale effects would be lessened if such wage cuts were widespread and employees felt their relative position was unchanged. This could justify a cut in public sector wages if it facilitated a broader reduction in wages while still retaining a sense of parity for employees.

The impact of slow wage adjustments is similarly broadly discussed. Blanchard (2007) found that in Portugal's case the lack of nominal wage reductions lengthened the overall period of adjustment and in particular required higher unemployment to achieve improved competitiveness. Indeed in Portugal's case there were legal restrictions against unjustified reductions in wages which contributed to this rigidity. The European Commission (2006) noted that the responsiveness of wages to cyclical slack varies substantially across countries with quite weak responses in some cases.

Given the perceived importance of earnings adjustments what then can be said of the Irish case in the course of the downturn? The early response to the downturn appears very heavily to have been a reduction in the volume of work. Between Q3 2008 and Q3 2009 this was heavily led by an employment reduction but supplemented by a reduction in average hours worked. Between 2009 and 2010 employment again contributed the greatest proportion of the wage bill cut, this time supplemented by a reduction in hourly earnings in the case of the public sector pay cut. Notably in the absence of this cut in 2010, average hourly earnings would not have reduced at all over the full period covered (2008 to 2011). In 2011, the situation has been more neutral as employment itself has changed less than previously.

This focus on reductions in the volume of work appears plausible as employers reacted to reduced demand for their goods and services, in some cases very severely such as in the case of construction. In such a scenario retaining workers but lowering wage rates would not make sense unless there was an expectation of increases in demand which would not have been likely for the majority of contracting businesses in Ireland in recent years. In the specific case of anticipated pay cuts in the private sector following the public sector pay cut, there may well have been instances of such cuts taking place but they would not appear to have been very widespread or to have had a substantial impact on average earnings.

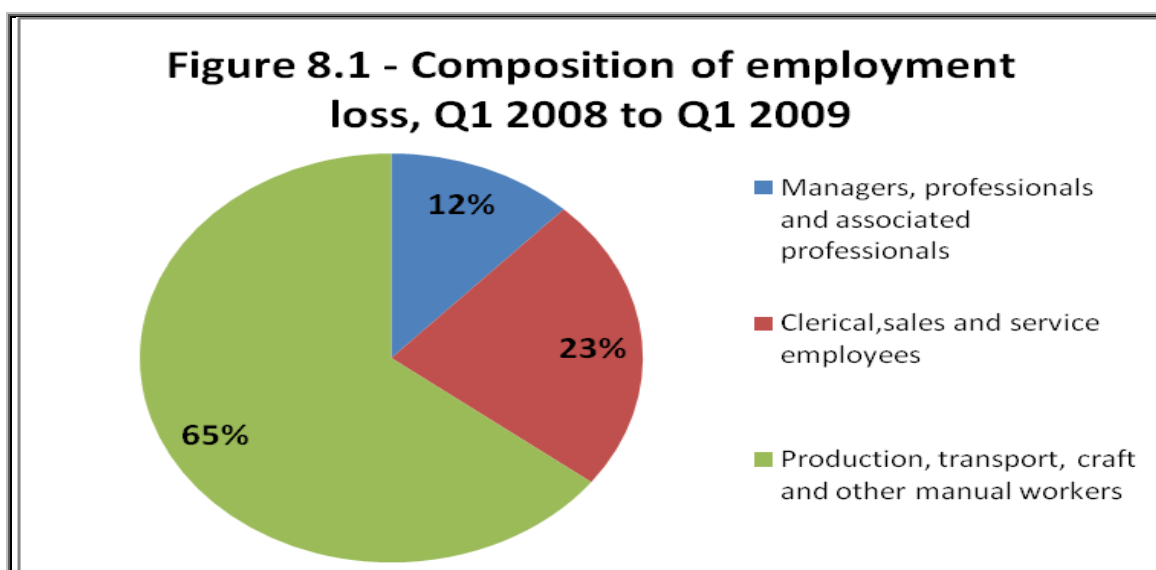
However, we must be careful not to conclude that there have been no adjustments in basic wages. The evidence from this analysis shows that 29% of enterprises cut pay levels as part of a wage bill cut between Q3 2008 and Q3 2009. Close to one third (31% overall and 27% in the private sector) did this between 2009 and 2010 and 18% did so between 2010 and 2011. However these decreases were in the main not of very high order of magnitude and balanced out by increases resulting in rigidity in published averages.

Another conclusion is that some level of change appears to occur for the majority of enterprises. To understand to what degree low level changes can be considered noise would require a longer term analysis looking at the degree to which enterprises change, even when the economy is stable. For the time being we must try to draw conclusions based on the balance of behaviours with wage cutting activities being seen more frequently in earlier periods covered, but a more balanced distribution being seen in 2011. This mainly explains the direction of overall wage bill change across the periods.

### 8. EFFECT OF COMPOSITIONAL CHANGE ON EARNINGS

The issue of how changes in the composition of employment has impacted on average earnings levels has often been raised right from the initial publication of EHECS earnings estimates.

Initial published EHECS results showed that the managerial group had close to double the average hourly earnings levels of the other two occupational groups. These results also showed that the majority of employment loss between Q1 2008 and Q1 2009 was recorded for the ‘Production and other’ group, a group which was particularly prevalent in the construction and industry sectors which accounted for the bulk of employment loss as measured by both EHECS and separately by the Quarterly National Household Survey (see Figure 8.1).



The effect of this unbalanced employment loss was that, as measured by EHECS, the managerial group went from 31% of total employment in Q1 2008 to 33% in Q1 2009 (see Table 8.1). This created an expectation that compositional change over the period was keeping average earnings levels higher than would have been the case had the composition of total employment stayed the same.

<b>Table 8.1 - Composition of Employment</b>	<b>Q1 2008</b>	<b>Q1 2009</b>
Managers, professionals and associated professionals	31	33
Clerical, sales and service employees	39	40
Production, transport, craft and other manual workers	30	27

Internationally, the issue of compositional change is not often considered in the design of earnings surveys for official statistical purposes. One example of an exception to this can be seen in Australia where a short term earnings survey has been designed to allow the estimation of a labour price index. The approach adopted is to collect labour cost information based on a fixed set of specified roles within enterprises. Over time this cost is measured for this fixed basket of roles regardless of whether the person undertaking the role changes or not (ABS, 2004). In addition to pricing a fixed basket of roles other possible compositional changes are excluded by applying fixed weights to enterprises within sectors and sectors within the economy. In simple terms this seeks

to answer the question ‘What would the trend in average earnings be if the overall composition of labour input within the economy stayed fixed over time?’.

The nature of short-term earnings data collection in most other countries does not facilitate such an analytical approach given that typically just aggregate level information for the enterprise is collected (i.e. total earnings for the enterprise etc.). The existence of the three way occupational breakdown in the Irish case at least creates an opportunity for a deeper analysis than is typically possible albeit that it would still not represent a labour price index.

Furthermore, in estimating published average earnings fixed weights are typically not applied, either to enterprises or sectors, as the series in question seeks to estimate the overall average level of earnings across all sectors based on the current composition of employment. This issue could be addressed by applying fixed weights at all stages of estimation on a matched basket approach and this is the approach which has been adopted in the analysis presented in this paper in the case of standardised average hours and standardised hourly earnings.

Based on the standardised average hourly earnings which have been estimated and discussed in section 6 of the paper an estimate of the effect of compositional change can be made by comparing the trend in published average hourly earnings to the standardised equivalent (see Table 8.2).

<b>Table 8.2 - Average hourly earnings change (standardised and published) and estimated compositional effect by period (%)</b>				
	Q3 2008 to Q3 2009		2009 to 2010	2010 to 2011
<b>Average hourly earnings change</b>				
Published*	+2%		-1%	0
Standardised	+1%		-2%	0
Estimated compositional effect	+1%		+1%	0

\* Note that the published figure for 2009 to 2010 and 2010 to 2011 is based on the change in the averages across the first 3 quarters of 2009 to 2011

In the period Q3 2008 to Q3 2009 the compositional effect was +1% (i.e. the increase in earnings of 2% would only have been 1% if there had been no compositional change). While earnings fell between 2009 and 2010 the compositional effect was the same (+1%). In the case of Q3 2008 to Q3 2009 the positive compositional effect appeared to be most heavily linked to the heavier loss in employment in the private sector than the public sector. This was not the case to any large degree for the subsequent periods so for the comparison between 2009 and 2010 it must be assumed that the compositional effect related to changes in composition across the more detailed sectors. Between 2010 and 2011 no compositional effect was measured.

It can of course also be the case that composition effect could occur both within enterprises and within sectors in a manner which cannot be measured through the EHECS survey. One example would be a new enterprise starting up which had lower earnings for all occupation groups. If such an enterprise entered the sample of EHECS it would reduce average earnings levels. However based on the very broad coverage of the EHECS survey, the relatively low rates of change recorded in published estimates and lack of measurable compositional effect on trends there is no evidence to support any substantial compositional effect beyond what has been measured. As with much of the activity covered in this paper there are undoubtedly instances of compositional change which have an effect on earnings within enterprises but they would not appear to be having a substantial effect on average earnings levels.

## **9. CONCLUDING REMARKS AND FUTURE AREAS OF WORK**

In this paper I have sought to reconcile available evidence with some of the preconceptions and expectations regarding wage bill change in Ireland over recent years.

With regard to how well published earnings estimates reflect the level of change occurring in the Irish economy, the detailed data underlying those published estimates show that indeed a great level of change has occurred and continues to occur. All three components of the wage bill which can be measured are changed by enterprises to some degree with a reasonable frequency. The published statistics are primarily driven by how those changes balance out. Between Q3 2008 and Q3 2009 and again between 2009 and 2010 the heavier frequency of activity

was focussed on wage bill cutting. However, these cuts were primarily achieved through employment reductions with relatively low contributions at the aggregate level from changes in average hourly earnings and average weekly paid hours. The public sector pay cut did make a contribution in so far as it was a single substantial cut in hourly earnings applied to a large group of employers and employees.

In general in comparing the public and private sectors a wider range of changes (i.e. greater volatility) were seen in the private sector across all the components. In the earlier periods covered, the balance of these changes was focussed on wage bill reduction and employment reduction in particular. However, between 2010 and 2011 while changes continued to be recorded the increases and decreases balanced each other out.

These findings do not easily reconcile with expectations of wage level adjustments following the shock to the Irish economy.

In relation to other pertinent questions we can see that nominal wage rigidity is not something seen universally but the level of hourly wage reductions has been relatively low over the period and as such hourly wage reductions do not appear to be a measure easily resorted to by employers. Employers have been far more likely to cut employment levels in particular than impose cuts in hourly rates of pay, although this does not imply that such cuts do not occur at all.

Based on recent findings from an IBEC survey this stickiness of wages is likely to continue given that only 5% of employers surveyed expected to cut wage rates during 2012. Indeed, almost a quarter (23%) of employers (IBEC 2012) expected to increase basic pay rates and the average expected change in basic pay rates was +0.4%. The large majority of enterprises expected to implement a pay freeze (69%). The IBEC survey also points to a reasonably even distribution of activity with regard to the overall wage bill with approximately two in five enterprises expecting their wage bill to be unchanged in 2012 and similar proportions expecting increases and decreases.

Both the analysis presented in this paper and the IBEC source call into question the proposal put forward in 2009 that widespread wage cuts could be expected in the private sector if a public sector pay cut was imposed. While cuts have occurred they have been balanced out by increases in other enterprises and based on the IBEC findings this would be expected to continue into 2012 (indeed increases would more than offset decreases based on those findings). While some private sector employers may have used the public sector pay cut to justify pay cuts for their employees this does not appear to have happened to such a degree as to influence overall average earnings levels substantially.

This evidence does not however imply that there has been little impact on wage bills. The overall wage bill reduction has been substantial. Employment has been cut heavily in particular and while there has been relatively little movement at the aggregate level in average hourly earnings it is worth noting that longer term norms would suggest that in stable or growing economies wages grow, i.e. even a zero change indicates either a greater level of wage cutting or freezing than is typically seen.

All of the analysis presented has had very much an economic focus. A social commentary could look very different. Other sources such as the Survey on Income and Living Conditions (SILC) show us that incomes have fallen sharply up to 2010 (CSO), heavily driven by the employment loss discussed in this paper along with reductions in take home pay due to successive budgetary measures which would not be covered in this analysis. A complete perspective of the social impact needs to take other such information into account.

Some future areas of work present themselves. Obviously if this analysis is found to be useful then it can be updated although as of the time of publication it incorporates the latest available data (up to Q3 2011). An additional aspect which warrants further investigation is the issue of longer term behaviour of individual employers, for example looking at whether the same employers have cut their wage bill in multiple instances over time or whether different employers implemented cuts in earlier periods than in later periods. Additional classifications could be used to draw other related insights, for example looking at how exporting enterprises have fared as compared with other enterprises (or foreign owner vs indigenous etc.).

The jobs churn explorer provided by the CSO and the underlying P35 analysis file also offer excellent opportunities for deeper analysis of overall pay bill change. These datasets have the benefit of their comprehensive nature, allowing very detailed analysis. They also have the advantage of additional information not available via EHECS (e.g. gender, age) and are available from 2006 onwards meaning the period immediately preceding the recession can also be analysed. As of the time of publication of this paper data for

2010 had just been made available and could not be heavily referenced. The P35 analysis dataset also offers particularly good opportunities for assessing the activities of small enterprises which are under-represented in the analysis presented in this paper. The specific issue of the level of representation of small enterprises is discussed in annex 1 of this paper.

The National Employment Survey (NES) also offers possibilities for analysis given that it has more detailed data on employees (rather than aggregate level returns for the enterprise). However, the latest available instance for the NES is 2009 (October 2009 reference month for earnings) so while it might supplement EHECS it will not allow as contemporary an analysis.

## ANNEX 1: REPRESENTATIVENESS OF THE RESULTS

A number of possible sources for comparison of the findings presented in this paper exist which give a sense of how representative the matched group of enterprises analysed is.

An obvious source is the compensation of employees series available from the National Accounts (see Table 1a) (CSO, 2009 to date). The National Accounts show that total compensation fell by 7.8% between 2009 and 2010 when just comparing Q1 to Q3 in the consecutive years. On the matched EHECS group focussed on in this paper the fall was 5.6%. Between the same periods of 2010 to 2011 the National Accounts recorded a drop of 0.2% compared with a drop of 0.8% on the matched group.

**Table 1a – Comparison of change in wage bill, National Accounts vs EHECS matched dataset**

	% Change 2009 to 2010	% Change 2010 to 2011
National Accounts CoE	-7.8%	-0.2%
EHECS matched dataset	-5.6%	-0.8%

Some difference is expected as the National Accounts will be influenced by births and deaths of enterprises while the matched group will only include enterprises that operate on a continuous basis. As such the relatively greater fall in the National Accounts between 2009 and 2010 can be interpreted as indicating that net loss in the total wage bill associated with closing enterprises was greater than the net gain associated with start-ups. The difference shown in comparing the change between 2010 and 2011 is of a much lesser scale and both sources indicate relatively low levels of change (i.e. less than one percent drop in the total wage bill). Given the relatively neutral trend between 2010 and 2011 it would also seem reasonable that the net effect of start ups and closures would similarly be reasonably neutral over that period. As such the comparison with National Accounts does not indicate any inexplicable differences in trend and implies reasonable representativeness of the dataset in assessing overall changes for continuously operating enterprises. However a feature of the compilation of the National Accounts series is that EHECS estimates are used as one of the inputs and as such some level of circularity could be involved in the relative coherence displayed.

One external source for comparison is the P35 dataset as presented through the jobs churn explorer available on the CSO website (CSO, 2012). The P35 dataset has both advantages and disadvantages over other sources. The clear advantage is that it covers all employers and employees rather than a sample. However, it only provides comprehensive coverage for the private sector. Additionally, reckonable pay (taxable pay) rather than gross pay is provided. A final issue is that this dataset is only available up to 2010 meaning no comparison for the later period covered in this paper is possible. In relation to comparability to the EHECS analysis an additional point of note is that the P35 file covers the full calendar year, whereas the EHECS analysis covered just part of the years in question.

Notwithstanding this, particularly in terms of trend analysis, it provides a very useful comparator for the period up to 2010. Furthermore it also gives an opportunity to distinguish between the trend in all employers from those who continuously operated across the period. The latter group are a closer approximation to the group covered in this paper.

<b>Table 1b - % Change in wage bill (reckonable pay) of continuously operating enterprises, EHECS and P35 analysis dataset</b>		
	2008 to 2009	2009 to 2010
P35 file (all enterprises)	-14.6	-6.8
P35 file (continuously operating enterprises only)	-12.7	-5.6
EHECS analysis (private sector)	-11.0	-4.1

A first point of note is that the first two rows in Table 1b illustrate the effect of the reduction in the wage bill associated the negative net contribution of enterprise births and deaths. In other words, given that enterprise deaths would have reduced the wage bill by more than the increase associated with enterprise births the relatively greater fall for all enterprises is expected.

However, in principle the second and third rows have similar coverage albeit from different sources and with slightly different time periods. As such the difference in the rate of reduction is worthy of consideration. The source of this difference can be explained by the breaking the P35 data down by enterprise size class. As can be seen in Table 1c the greatest wage bill reductions among continuously operating enterprises have been shown



among small enterprises. Therefore their relatively low representation in the EHECS based analysis would create a difference in the level of reduction recorded in the wage bill.

**Table 1c - Changes in reckonable pay by size class, P35 file**

	2008 to 2009	2009 to 2010
<b>Size Class</b>		
Small (Less than 50)	-18.8	-8.4
Medium (50 to 249)	-13.2	-5.8
Large (250+)	-5.8	-3.0

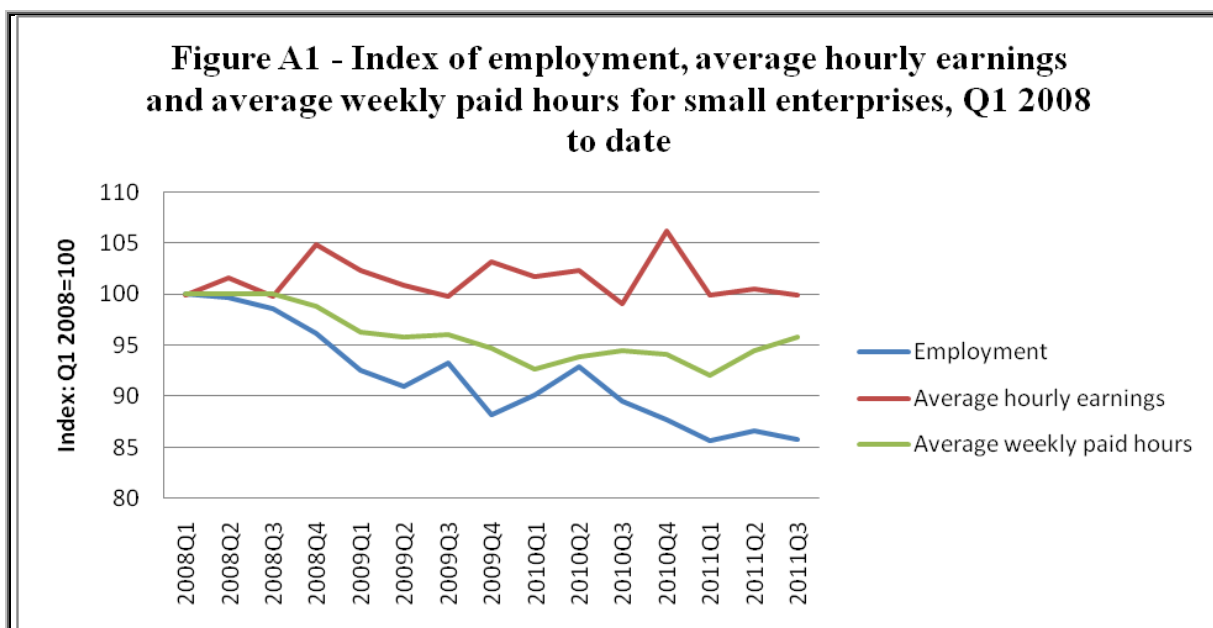
The reason the differences between the EHECS based analysis and the P35 file are relatively low in Table 1b (less than two percentage points) is the high proportion of employment covered by the larger enterprises.

Consequently, with respect to the analysis presented in this paper it is suggested that the analysis is taken to be highly representative of the activities of medium to large enterprises but less so of small enterprises. Bearing in mind that small enterprises as a whole have seen the greatest level of wage bill reduction this group would be worthy of a separate detailed analysis which would need to be based on an alternative source such as the P35 dataset. However, given the proportion of employment covered by the larger enterprises (over 50% of all employees) the EHECS based analysis still offers strong analytical value.

### ***The case of small enterprises***

As we have seen the P35 dataset indicates that the level of reduction in wage bills among small enterprises was greater than either medium or large enterprises between 2008 and 2010. While this has a noted effect (albeit relatively low) on the overall wage bill reduction as reported among matched enterprises covered in this paper, it is worth considering whether there is any evidence that the method of making such changes was any different for small enterprises. Specifically, does it hold true that employment was the primary contributor to wage bill reduction?

Figure A1 below presents published results from EHECS for small enterprises. In this case the published enterprises are based on the full sample of enterprises, not constrained by the matching exercise used in this paper. This would therefore represent a larger and more representative sample of small enterprises than those which could be used for the longitudinal analysis. Such as we believe this offers a reasonable view change in small enterprises since 2008 this would support that employment has indeed been the primary source of wage bill adjustment (down approximately 15% over the period), followed by average weekly paid hours (down between 5 and 10% depending on the period considered). Average hourly earnings have fluctuated but have not shown any notable reduction over the period. As such while we cannot quantify precisely the range of activities undertaken by small enterprises through the analysis presented in this paper, it would at least seem to be reasonable to conclude that while the overall wage bill reduction has been greater in small enterprises than larger enterprises, it has been implemented in predominantly the same manner as seen for larger private sector enterprises, i.e. employment as the main component of change, followed by average hours with relatively little movement in hourly earnings.



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**FIRST VOTE OF THANKS PROPOSED BY SEAMUS McGUINNESS,  
ECONOMIC AND SOCIAL RESEARCH INSTITUTE**

**Is Downward Pay rigidity necessarily a Bad thing?**

The issue of the evolution of the wage bill over the course of the downturn is of critical importance, as it gives us some measure of both the flexibility of firms and, I will argue, provides an important barometer of the extent to which enterprises are positioned to take advantage of any upturn. The research is to be strongly commended for shedding light on these issues and, in the process, helping to dispel many of the misconceptions that exist, particularly with regard to the widely held belief that rates of pay have fallen substantially over recent years. The paper demonstrates that while there has been substantial falls in the average wage bill over the period 2008 to 2011, these adjustments were largely restricted to the years 2008 through to 2010 and were principally driven by reductions in employment, with adjustments in both levels of hours worked and hourly pay much less common. In fact, when employment adjustments are excluded from the analysis, the author shows that, annually, only 1 in 10 enterprises reduced their wage bill during the 2008 to 2011 period with a similar proportion actually increasing their total wage bill in each year.

As the author points out, the wage bill in any firm is dependent on three factors (1) the total number of employees (2) the average number of hours worked per employee and (3) the average hourly wage paid to employees. In terms of these key indicators, it is perhaps reasonable to state that the earnings variable is the most widely researched on the grounds that it has implications for individual educational/training investment decisions, firm-level productivity and, at the macroeconomic level, unemployment. Rising wage costs during a recession are often interpreted in a negative light as they are indicative of a potential loss of international competitiveness and a failure of the labour market to clear which, in turn, results in persistently high unemployment. However, there may be good reasons for private sector firms to resist cutting pay and these may actually have positive implications for both unemployment and growth. Consequently, in my response I would like to explore the potential policy implications of the downward wage rigidity that the paper highlights so well. In terms of the economics literature, some of the principal explanations for downward wage rigidity during recessions include the following (see Bewley (1999) for a review):

1. The higher are wage rates, the greater the pressure on employees to meet the performance standards set by employers. Reducing wage rates may, in fact, prove more costly to employers as a consequence of increased monitoring costs (Eaton and White (1983), Shapiro and Stiglitz (1984)).
2. Insiders within firms resist pay cuts as they have no interest in saving the jobs of newly hired employees (insider-outsider theory; Lindbeck and Snower (1988)).
3. Pay rates have a positive impact on morale which, in turn, affects productivity. When determining wages, firms weigh reducing labour costs against the impact of pay on productivity and this trade-off determines the profit maximising wage (Solow (1979), Akerlof (1982), Akerlof and Yellem (1988, 1990)).

It is this third argument that I find most convincing with respect to explaining the downward wage rigidity evident within the paper. The Irish recession was caused by the combination of a number of factors, however, high wage levels was not among them. During the downturn many firms were forced to cut employment in response to lower levels of demand, with adjustment in sectors such as Construction (F), Financial, insurance and real estate (K-L) and Administrative and support services (N-P) particularly severe during the 2008 to 2010 period. However, by 2011, the situation had largely stabilised with the majority of industries experiencing employment growth. Therefore, to the extent that private sector wages reflect both worker productivity and firm-level profit maximisation, the research suggests that while some substantial downsizing has been necessary within most sectors in response to market conditions, those firms that have survived have done so by retaining their most productive workers and, as such, should be well placed to take advantage of any macro-economic upturn. Evidence of substantial reductions in wage costs could signal a move towards a lower skilled equilibrium which may make recovery more difficult. Therefore, a scenario of stable productivity and skill retention can only have positive implications in terms of achieving reductions in levels of unemployment in Ireland. Given such a conceptual framework, which is underpinned by productivity maximising firm-level behaviour, there is little or nothing to be gained by policies aimed at labour market deregulation such as, for instance, cutting the minimum wage.

With respect to the issue of public sector pay, however, the issue is less clear cut. Wage determination in the public sector has been traditionally set through a series of national wage agreements, with the size of the government surpluses pertaining in any given period representing the principal factor in determining pay

increases. The author states that the anticipated private sector wage decline following the public sector wage cuts imposed in 2010 failed to materialise. However, it is not at all clear that (a) the public/private sector pay differential was substantially impacted by the 2010 adjustment, or (b) that private sector wages were expected to decline in response to a fall in public sector pay. With respect to the differential, the ratio of public to private sector pay has declined only marginally from 1.51 in 2008 to 1.47 in 2011, thus, even if an adjustment in private sector wages was expected, it is not clear that the magnitude of the public sector pay cut would have been sufficient to induce it. However, it is not at all clear that there ever existed any expectation that private sector earnings would fall as a consequence of the 2010 public sector pay cuts. The principal argument for a reduction in the differential was that high public sector wages have the potential to “crowd out” private sector activity by driving up private sector wages as employers competed for workers within increasingly tight labour markets. Given current slack labour market conditions, there is little prospect of a “crowding out” effect arising from the apparent persistence of the public/private pay differential. Nevertheless, there are strong equity grounds for ensuring that any public/private sector pay gap is reduced in line with international norms. Furthermore, the failure to tackle the pay differential may adversely impact future competitiveness through private sector wage inflation, if future growth proves sufficient to substantially impact levels of unemployment to such an extent that “crowding out” again becomes a factor.

Thus, in conclusion, I would like to again congratulate the author for such an important contribution in extending our understanding of the process of labour market adjustment in Ireland during the course of the downturn. I believe the finding of downward private sector wage rigidity has largely positive implications for Ireland's growth potential and, as such, does not provide a basis for labour market deregulation as such policies are likely to have little impact on firm-level behaviour. On the flip-side, the research also indicates that little progress appears to have been made in terms of reducing the public/private sector pay differential and, consequently, it is likely that that this issue will remain central to the policy debate for some time to come.

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#### SECOND VOTE OF THANKS PROPOSED BY FERGAL O'BRIEN, IBEC

I wish to congratulate Kieran on an excellent paper which I think makes a very important contribution to our understanding of how private sector wages have responded to the economic downturn.

I would like to start by making a few comments on the overall economic context and importance of wage cost adjustments during this recession. Coming into the crisis Ireland had a substantial labour cost disadvantage, with unit labour costs about 30% above the EU-15 average. Aggregate data only tell so much, however, and the competitiveness challenge varied across sectors and markets. The currency issues of 2008/'09 had a particular impact for indigenous exporters, which are still heavily reliant on the UK market and they exacerbated an already difficult competitive position. For those firms operating in the domestic economy, the overriding

difficultly since the start of the crisis has been a demand problem but cost legacies from the boom years remain a major threat to firm viability. Crucially, competitiveness improvements have been achieved. The estimated 15% improvement in unit labour cost against the main eurozone trading partners is made up of a combination of relative nominal wage gains; productivity gains at firm level; and compositional issues at the macro level. This is manifested at the firm level by Irish businesses winning new customers even in difficult trading conditions and at the macro level in the improving share of world market trade.

In the context of this discussion it is also important to note the contribution of the improved productivity performance of firms over the duration of crisis, to competitiveness gains. Nominal cost adjustments are clearly only one part of the story but the issue of firm-level productivity performance has not received too much attention yet. A case-study analysis which we did in 2010 found very strong examples of productivity gains. Factors such as major restructuring initiatives; reengineering of processes – manufacturing and services; a large increase in Lean activity; changes to staffing ratios and reductions in overtime payments; all greatly boosted productivity.

Firm level data from IBEC pay surveys over the past few years also shed some further light on the flexibility of wage rates in Irish firms during the crisis. We have surveyed members on development in every quarter since 2009. Our membership employs 70% of private sector workforce, covering all sectors of the economy with the exception of construction. Our surveys found that nominal pay cuts were most prevalent in 2009, the incidence of wage reductions has reduced in more recent years with only a small percentage of firms expected to reduce basic pay in 2012. Some 25% of firms reported basic pay rate reductions in '09, 62% pay freezes and 13% increases. Smaller firms were much more likely to reduce basic rates and also likely to have larger pay rate reductions. We found that 28% of firms with less than 50 employees cut basic pay rates while 14% of firms with greater than 100 employees cut pay. The average pay rate reduction was 14% for the full sample with 16% for firms under 50 employees and 6% for firms over 100. In 2010, the percentage of firms cutting pay fell to 12% and to 7% in 2011.

I would now like to make some specific comments on Kieran's excellent paper. The matched sample and occupational composition correction are key advancements in this debate. There are two further issues which I think require some further examination, however. These are the firm size representativeness of the matched sample and compositional issues other than broad occupational category. In relation to firm size, I think it should be noted that the matched sample used has poor representation of small firms. This is significant as we know that smaller firms are more likely to be reliant on the domestic economy and therefore face more difficult trading conditions. The IBEC surveys have shown that small firms are twice as likely to have implemented basic pay rate reductions.

In relation to the compositional issue there are some further aspects worth considering which are central to our understanding of what is happening at firm level. We know that younger workers were much more likely to lose their jobs than older workers e.g. last-in-first-out redundancies; temporary and contract workers are also likely to be younger. Their wages are likely to be lower and this would then effect movements in the average wage rates. Our experience would also be of many firms letting go temporary and contract workers while simultaneously reducing the basic wage rates of remaining workers. This would then result in a possible no change or even average pay increase outcome on average. Finally, the distribution of the wage developments in the public sector enterprises surprises me – about one fifth are showing pay increases in 2010 and the results were not as closely bunched as would be expected, given the centralised nature of public sector pay policy.

In conclusion, I think that some further analysis would be useful in relation to compositional issues. The recently developed P35 job churn data also provides excellent material for further analysis and understanding of wage trends in the economy. Getting a handle on trends in the marginal wage, or new hire rate, will also be important as this will be a key influencer of future competitiveness adjustment once employment starts to grow again. From a policy perspective, I think nominal wage flexibility has been a component of competitiveness improvements but not the dominant one. Many of the firms under most acute competitiveness pressure have achieved nominal wage rate reductions but productivity improvements have also been a major determinant of competitiveness improvements. Future competitiveness gains will come from further productivity gains; relative wage cost gains similar to what Germany has achieved; and when employment increases, from lower marginal wage rates. It also possible that the aggregate data might not fully reflect wage flexibility until employment starts growing again.

## DISCUSSION

**Noel O’Gorman:** I commend the author for both the analysis and his presentation. I would suggest that the contribution to the wage bill change of cuts in basic pay *rates* might be over-stated, because of the probable interaction between the decline in hours worked and average hourly earnings - via the extent of overtime premia. In referring to the improvement in Ireland’s cost-competitiveness noted by another speaker, I would draw attention to the OECD’s analysis of trends in European unit labour costs in its latest ‘Economic Outlook’. This pointed to a major deterioration from 2000 in the position of other euro-zone countries vis-a-vis Germany, where costs in 2008 were virtually unchanged from 2000. Ireland’s labour cost increase was close to the highest in the crisis countries, and was considerably greater than in core euro-countries, such as France.

**Pat McArdle:** First, I would like to express my thanks to Kieran Walsh for undertaking this valuable piece of work. Like others, I find the results surprising. If I recall correctly, when the Q2 2009 Earnings and Labour Costs data were released in late 2009, the CSO made a rough adjustment to the figures to allow for sample change, in the case of the private sector, and the pensions levy in the public sector. This showed that in underlying terms, both public and private pay had fallen by 4 to 5% at that stage. Can you confirm this and have you attempted to update these calculations?

**Paul Gorecki:** This is a very useful paper on an important issue. I should like to raise one issue. The sample of enterprises refers to those that were continuing i.e. the enterprise existed in  $t$  and  $t+1$ . The paper pays attention to the wage bill of such enterprises and how this changes between  $t$  and  $t+1$ . One of the reasons that the wage bill of a continuing enterprise changes is because the enterprise decides to sell a division or branch to another enterprise (i.e. a decline in the wage bill), while another continuing enterprise may purchase this division or branch or alternatively acquire a complete enterprise (i.e. an increase in the wage bill). To what extent does the paper take such increases and decreases into account? Would it be more appropriate to consider these issues by building up the enterprise based on establishment data where these issues can be addressed much more easily and, perhaps, appropriately?

**Frances Ruane:** I would like to thank Kieran Walsh for this very interesting examination of how employers have responded to the downturn in terms of their wage bill. Since 2008 we have been hearing different accounts of what has been happening in the private sector and this paper shows that there is considerable heterogeneity which is consistent with what we hear anecdotally. Not all enterprises have followed the same adjustment path. Your findings and the comments made by Fergal O’Brien draw attention to another aspect of enterprise behaviour that is evident in the CSO/Forfás Community Innovation Survey data. My colleague Iulia Siedschlag has been working on these data for some time and one feature to emerge from her work is that Irish-owned enterprises indicate that they have been engaged in considerable organisational innovation. This, in addition to process innovation, has dominated their innovative activities. Such organisation and process innovation are precisely what enterprises would need if they are to reduce their unit labour costs without cutting wages.

**Rory O’Farrell:** With regard to changes in hourly pay, it is possible that people (such as sales) staff did not have their basic rates cut, but received a lot less in commissions and bonuses. Does the paper deal with this?

**Steve MacFeely:** I would like to congratulate Kieran on a most interesting paper and excellent presentation. It is gratifying to see the EHECS data being used to such good effect. The EHECS is a relatively new survey and one that was quite difficult to introduce, owing to the complexity associated with the automatic data extraction from payroll software systems. Today, a significant volume of EHECS data is transmitted to CSO automatically via XML, substantially reducing respondent burden on businesses. The EHECS data are a considerable improvement on the old earnings surveys for three reasons. Firstly, the automatic data returns have reduced human intervention, thus improving consistency and timeliness (the latter being a critical aspect of quality for a short-term statistic). Secondly, a common survey tool adopting a harmonised methodology across all economic sectors has replaced a plethora of sectoral surveys, each with their own methodology. Finally, the scope of the EHECS is more complete and comprehensive than its predecessors.

Some commentators have argued that EHECS is of lesser quality than the old earnings surveys because it produces more volatile results. One could legitimately argue, as I would, that at a time of such economic turbulence, more volatility might reasonably be expected. Certainly, one should not equate stability with accuracy! I would also note that, in addition to EHECS, CSO has recently introduced two additional statistical products; the Job Churn Explorer and the Business Demography statistics. Both of these datasets could usefully supplement this field of research, by allowing researchers to examine the impact of job churn and enterprise creation and destruction on enterprise wage bills.

Once again, I would like to congratulate Kieran on an excellent paper.

**Paul Sweeney:** I congratulate Kieran Walsh for an excellent paper with which I would concur as it reflects what I am finding was occurring in the economy and workplaces during this very deep economic crisis and with my own analysis of the data. I comment wearing my hat as chief economist at the Irish Congress of Trade Unions. In general, I also agree with the most points made by the two respondents. I am however critical of the mistake made by many “imprecise economists” who equated improving competitiveness with declining wages and or declining unit labour costs – generally over a short period of time. Competitiveness is far more complex than simple short run movements in wages. It is important to address movements in wages or unit labour costs as what it really is. This is part of “cost competitiveness”, which is just one aspect albeit an important one - of the issue. The National Competitiveness Council defines the area of competitiveness in all its complexity and this should inform policymakers in Ireland.

On the area of unit labour costs (productivity) which have been improving in Ireland, we should recognise that this was in part due to a) the collapse of the low productivity construction industry, b) the fall in employment in public services, which are difficult to measure but many agree have low productivity (e.g. health and education) and also the contribution of the general shake-out in employment in all sectors, as outlined in the paper, which must have contributed to more efficient firms and organisations.

Finally, the paper shows that there had been no general “internal devaluation” in wages and salaries for existing employees which had been an objective of the previous government, some economists and policymakers. Aggregate wages had in fact fallen from €79bn in 2008 to around €68bn in 2010, and remaining at that level in 2011 and 2012 for the reasons given in the paper – the biggest of which was the fall of 306,000 people at work. Had a large fall in aggregate earnings occurred for those 1.5m employees who remained in work on top of that, the impact on domestic demand would have been even more severe, coming on top of a fall of 24.9% from its peak to Q4, 2011.