



Central Statistics Office
IRELAND

Analysis of Wage Bill Change in Enterprises and Components of Change, Quarter 3 2008 to Quarter 3 2009

Supplementary Analysis: Earnings and Labour Costs



An Phríomh-Oifig Staidrimh
Central Statistics Office

Analysis of wage bill change in enterprises and components of change, Quarter 3 2008 to Quarter 3 2009

Supplementary analysis: Earnings and Labour Costs

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Summary Findings

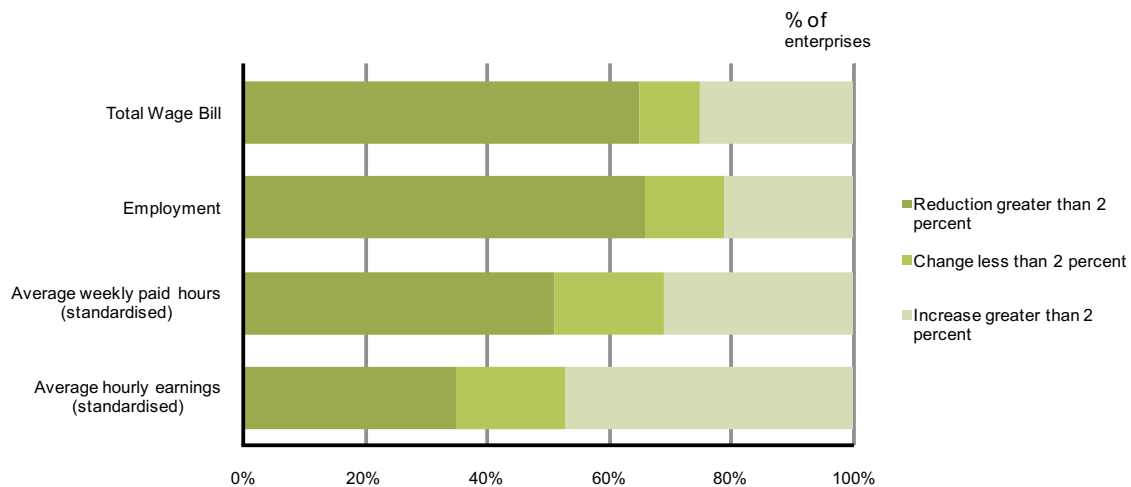
This report presents the results of a new analysis of data from the Earnings Hours and Employment Costs Survey looking at the proportion of enterprises who recorded a change in their wage bill over the period Quarter 3 2008 to Quarter 3 2009 and how this change was implemented with reference to 3 components which drive the overall wage bill, namely number of employees, average paid hours per employee and average hourly earnings per employee. Some fluctuation in the wage bill is normal. The main focus in this analysis is on enterprises who changed their wage bill or its components by more than 2 percent to distinguish between enterprises with low levels of change and those with more significant levels of change. The main points of note include:

- ◆ Nearly two thirds of all enterprises (65%) reduced their wage bill by more than 2 percent in the year to Quarter 3 2009. A higher proportion of private sector enterprises had cut their wage bill than public sector enterprises (67% compared with 37%). *See Chapter 1.*
- ◆ One quarter of enterprises (25%) reported an increase in their wage bill of more than 2 percent over the year.
- ◆ Of the three components of the wage bill analysed, the number of employees was the component which was reduced by the highest proportion of enterprises, followed by average weekly paid hours and average hourly earnings. As well as a greater frequency of change a higher level of change was typically recorded in employment than the other two components. *See Chapters 2, 3, 4 and figure A.*
- ◆ Similar to the overall wage bill approximately two thirds of enterprises (66%) reduced their employment level by more than 2 percent over the year while less than one quarter (21%) increased their employment by more than 2 percent over the year. *See Chapter 2.*
- ◆ On a standardised basis average weekly paid hours fell by 2%. Average weekly paid hours were reduced by more than 2 percent in just over half of the enterprises covered (51%) while they rose by more than 2 percent in 31% of enterprises. *See Chapter 3.*
- ◆ Average hourly earnings (standardised) increased by 1% over the year with a greater percentage of enterprises reporting increases than decreases of more than 2 percent (47% reporting increases compared with 35% reporting decreases). *See Chapter 4.*
- ◆ Of the 65% of enterprises who reduced their wage bill by more than 2 percent the large majority had cut more than one of the components of the wage bill (46% of all enterprises). Just less than one in ten enterprises (9%) had reduced their total wage bill and all three of the components. *See Chapter 5.*
- ◆ An employment reduction was recorded in the majority of enterprises who reduced their wage bill (54% of the 65% of enterprises who reduced their wage bill), while 37% of enterprises reduced their wage bill and average hours. Average hourly earnings was the component least frequently reduced by enterprises who reduced their wage bill (29% of the 65% or less than half of enterprises who cut their wage bill). *See Chapter 5.*

- ◆ Among the 25% of enterprises who increased their wage bill by more than 2 percent the patterns across components were less clear with similar proportions of enterprises increasing employment, hours and average earnings.

Variations in the above patterns can be seen across different economic sectors and these variations are discussed in more detail in the main body of the report. In considering the results it must be noted that the effect of the pension levy introduced for public sector workers in April 2009 is not reflected as it did not reduce the actual wage bill as reported by public sector enterprises. Also the effects of the public sector pay reduction introduced in the December 2009 budget with effect from January 2010 will not be reflected until results for Quarter 1 2010 are available.

Figure A - Change in total wage bill and components of the wage bill by level of change, Quarter 3 2008 to Quarter 3 2009



Introduction

The Earnings, Hours and Employment Costs Survey (EHECS) is the source of short term earnings statistics in Ireland. It commenced in 2005 covering certain subsectors of the economy and expanded to cover all sectors from Quarter 1 2008 onwards. A range of information is collected from enterprises including:

- ◆ Total earnings (both regular and irregular)
- ◆ Other labour costs (such as social insurance, benefits in kind etc.)
- ◆ Number of persons employed
- ◆ Hours worked and paid

These data allow the main national earnings indicators to be estimated on a quarterly basis, most notably average weekly earnings, average weekly paid hours and average hourly earnings. The presentation of results focuses most significantly on estimates broken down by economic sector and the unit of analysis is the employee (i.e. averages per employee).

An additional form of analysis which can be generated from EHECS relates to changes in total wage bill at the enterprise level, for example, to answer the question what percentage of enterprises reduced or increased their wage bill over a period. In such an analysis the unit of analysis becomes the enterprise rather than the employee. The primary purpose of this report is to examine this aspect of EHECS data over the period Quarter 3 2008 to Quarter 3 2009. This particular period is chosen as it is the period over which the greatest fall in employment (both in absolute and proportional terms) occurred as measured by the QNHS (the number of employees fell by 165,200 or 9.5% over the year).

A second question this report seeks to answer is how the change in the wage bill was made. The broad assumption is that there are three different components of the wage bill which can be changed by an enterprise, namely:

- ◆ Number of employees employed by the enterprise
- ◆ Average weekly paid hours of employees
- ◆ Average hourly earnings of employees

Each of these three components is analysed individually and subsequently jointly to show where enterprises might have reduced or increased more than one of the components.

The analysis focuses on enterprises who have changed the wage bill or any of the components by more than 2 percent. The aim of this is to distinguish between enterprises who recorded a minor change which would be relatively normal and those who reported a more significant change. The choice of 2 percent was arbitrary as there is no clear 'normal' change in these components or the total wage bill of an enterprise

which can be dismissed as insignificant. However, it was based on an analysis of the distribution of levels of change reported by enterprises. In the case of the overall wage bill, 10% of enterprises had changed their wage bill by 2 percent or less.

Compositional effect on average earnings:

One difficulty typically faced in analysis of short-term earnings data is that the lack of data on the composition of employment within an organisation does not allow the effect of changes in the composition of employment to be estimated. For example, if within an enterprise a group of high paid workers were hired at a point in time then the average earnings for that enterprise will rise, not because of any change in pay-rates but solely due to the compositional effect of having a greater proportion of workers on higher pay scales. More detailed structural surveys (such as the National Employment Survey in Ireland) contain sufficient detail to allow a greater depth of analysis to be undertaken regarding the nature of compositional effect. However, over shorter periods compositional effect can be significant and the typical lack of detail in short-term surveys makes any estimate of compositional effect difficult.

A significant feature of EHECS is that data is collected by three occupational groups namely:

- ◆ Managers, professionals and associate professionals
- ◆ Clerical, sales and service workers
- ◆ Production, transport, craft and trade-persons and other manual workers

Each enterprise is asked to provide earnings, employment, hours etc. for each of these occupational groups. The availability of this data allows for some analysis of the effect of compositional change to be undertaken.

In the context of this report this information on composition has been used to estimate standardised average weekly paid hours and standardised average hourly earnings. In essence these estimates represent the average weekly paid hours and average hourly earnings which would have resulted had employment composition within the enterprise not changed over the year. These standardised averages are the basis of data presented in tables 3 to 5 and form a significant part of the analysis within this release.

In providing these estimates it is noted that there are significant other aspects of compositional change which are known to impact employee earnings and which cannot be corrected for based on data available from EHECS including length of service, educational attainment level, whether the role involves supervision etc. Also to truly measure the economic impact of compositional effect some information on productivity should be included in the analysis, this however is not possible from the data available. Therefore the analysis presented on paid weekly hours and hourly earnings should be interpreted as the outcome only correcting for changes in the composition of employment across the three occupational groups covered.

Sample of Enterprises:

For the purposes of these estimates only enterprises for which data was available for both periods covered (Quarter 3 2008 and Quarter 3 2009) could be included. Close to 4,000 (3,794) enterprises were matched which represents approximately two thirds of the total EHECS sample of enterprises for Quarter 3 2009. The enterprises covered reported a total employment of 876,600 in Quarter 3 2008 and this had fallen to 810,300 by Quarter 3 2009 representing 51% of the total estimated number of employees in the State in each period. Table A1 below shows the number of enterprises and employees covered by the analysis for each sector presented in the tables.

The use of a matched sample approach raises some issues in terms of coherence with published estimates, such as:

- ◆ The fall in employment over the period is underestimated as enterprises who ceased trading would not be matched and as such not represented. This would also be true of start-up enterprises,

however, given the period involved this is certainly an underestimation in this case as the loss in employment in the enterprises who ceased trading would be greater than the employment in start up enterprises. The overall employment reduction in the matched enterprises was 8% compared with an annual reduction of 9.5% in the number of employees as reported for the QNHS in Quarter 3 2009.

- ◆ In addition to issues surrounding start-ups or closures the matched sample does not exactly match the overall sample for other reasons such as the reduction in the size of the sample covered in early 2009 and non-response. However each sector for which estimates are presented have sufficient numbers in terms of enterprises and employees covered to allow reasonable inferences to be drawn. Table A1 below shows the number of enterprises in the matched sample in each sector presented. In addition the total number of employees in the relevant respondents in Quarter 3 2008 and Quarter 3 2009 is presented for information. Greater caution in interpretation is needed in sectors with lower numbers of enterprises and employees covered.

The relevant sample sizes within the public and private sectors at a detailed level necessitated the amalgamation of certain sectors into the classification as displayed on the tables. This limits the direct comparability of the data with data from other surveys where a public/private split and the amalgamations in question are not typically used.

It is proposed that this analysis will be repeated in Quarter 1 2010 once two full years of EHECS data is available. Comment and feedback on the content of this report is welcome and can be directed to Kieran.walsh@csso.ie, tel: 021 453 5091.

For more detail on methodology of the Earnings, Hours and Employment Costs Survey please refer to the Earnings and Labour Costs quarterly release which can be found on www.csso.ie by clicking on 'Releases and Publications' and then 'Earnings'.

Table A1 - Sample Size: Number of respondent enterprises and employees, Quarter 3 2008 and Quarter 3 2009

	Number of Enterprises Matched	Number of Employees in matched enterprises	
		Quarter 3 2008	Quarter 3 2009
Private Sector			
B-E Industry	743	150,300	135,500
F Construction	263	29,100	21,500
G Wholesale and retail	822	140,300	130,500
H Transportation and storage	113	16,800	15,900
I Accommodation and food services	513	58,800	52,600
J Information and communication	143	32,000	30,400
K-L Financial , insurance and real estate	129	67,900	63,200
M Professional, scientific and technical	180	31,400	27,900
N-P Administrative and support services and education	237	55,100	47,000
Q Human health and social work	268	36,000	34,600
R-S Arts, entertainment, recreation and other social service activities	132	16,000	14,000
Public Sector			
O Public administration and defence	121	116,700	111,600
P Education	60	46,200	45,900
Q Human health and social work	38	37,200	37,200
Other Public Sector	32	42,800	42,400
All private sector enterprises	3,543	633,700	573,200
All public sector enterprises	251	242,800	237,100
Total: All enterprises	3,794	876,600	810,300

Chapter 1

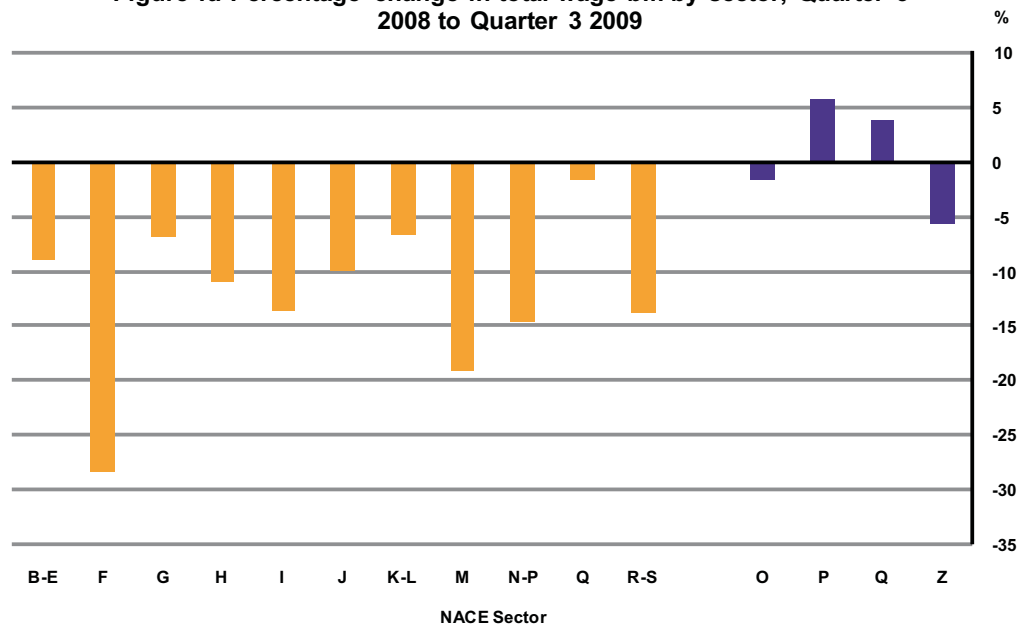
Total Wage Bill Changes

This chapter covers changes in the total wage bill reported by enterprises. The changes in different components of the wage bill are discussed in subsequent chapters of the report. The total wage bill across all enterprises covered in the matched sample fell by 7% between Quarter 3 2008 and Quarter 3 2009. As discussed in the introduction to this report this is an underestimate of the full reduction in the wage bill as enterprises who ceased trading are not covered in the matched sample. See table 1.

The overall wage bill reduction for private sector enterprises within the matched sample was 11% while the overall wage bill was unchanged in the matched public sector enterprises.

The economic sectors within the report are distinguished by NACE Rev 2 economic sector with an additional distinction between the public and the private sector. The total wage bill of matched enterprises was cut in each economic sector within the private sector. See figure 1a.

Figure 1a Percentage change in total wage bill by sector, Quarter 3 2008 to Quarter 3 2009



Private Sector		Public Sector	
B-E	Industry	O	Public administration and defence
F	Construction	P	Education
G	Wholesale and retail trade	Q	Human health and social work
H	Transportation and storage	Z	Other public sector
I	Accommodation and food services		
J	Information and communication		
K-L	Financial, insurance and real estate activities		
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		

- ◆ The largest reduction was recorded in *Construction* (-28%), followed by *Professional, scientific and technical* (-19%) and *Administrative and support services and education* (-15%).
- ◆ Within the public sector a reduction of 2% was recorded in the *Public administration and defence* sector while a reduction of 6% was recorded in *Other public sector* which includes all public sector enterprises other than those in the main 3 sectors of *Public administration and defence*, *Human health and social work* and *Education*. Increases of 6% and 4% were recorded in the *Education* and *Human health and social work* sectors respectively.

Nearly two thirds of all enterprises (65%) reduced their wage bill by more than 2 percent over the year. Two thirds (67%) of private sector enterprises and over one third (37%) of public sector enterprises had reduced their wage bill by more than 2 percent. More than half of private sector enterprises in each sector had reduced their wage bill by more than 2 percent with the exception of only one sector, namely *Human health and social work*. See figure 1b.

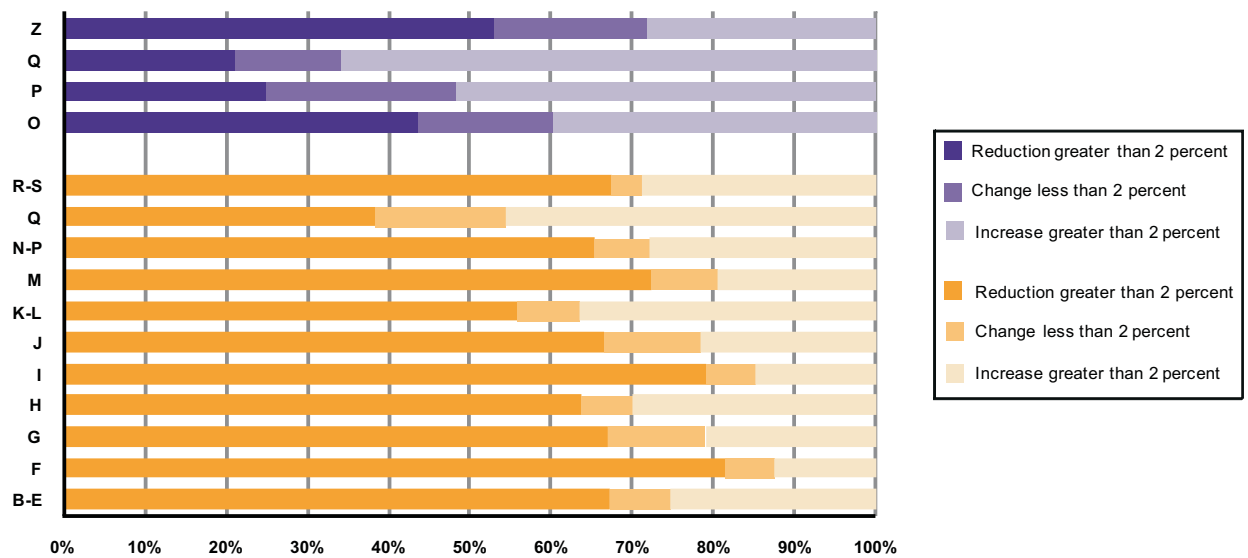
- ◆ 81% of enterprises in the *Construction* sector had reduced their wage bill by more than 2 percent. The next highest proportion of enterprises reporting a reduction of more than 2 percent was recorded in the *Accommodation and food services* sector (79%).
- ◆ In several sectors close to two thirds of enterprises recorded a reduction of greater than 2 percent including *Industry* (67%), *Wholesale and retail trade* (67%), *Transportation and storage* (64%), *Information and communication* (66%), *Administrative and support services and education* (65%) and *Arts, entertainment, recreation and other service activities* (67%).

In the public sector 37% of enterprises recorded a reduction in their wage bill of more than 2 percent with the greatest proportion of enterprises reporting a reduction being recorded in *Other public sector* (53%) and *Public administration and defence* (44%).

A sizeable minority of enterprises (25%) increased their wage bill by more than 2 percent over the period with 24% of private sector enterprises reporting an increase of greater than 2 percent compared with 45% of public sector enterprises.

- ◆ Within the private sector only in the *Human health and social work* sector did a higher percentage of enterprises increase rather than reduce their wage bill (46% compared with 38%) while only 13% of enterprises in the *Construction* sector recorded an increase of greater than 2 percent.
- ◆ In the public sector 66% of enterprises in the *Human health and social work* sector recorded an increase of greater than 2 percent in their wage bill compared with 28% in *Other public sector*.

Figure 1b Percentage of enterprises who changed their total wage bill by level of change and sector, Quarter 3 2008 to Quarter 3 2009



Private Sector		Public Sector	
B-E	Industry	O	Public administration and defence
F	Construction	P	Education
G	Wholesale and retail trade	Q	Human health and social work
H	Transportation and storage	Z	Other public sector
I	Accommodation and food services		
J	Information and communication		
K-L	Financial, insurance and real estate activities		
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		

Average level of change in wage bill

While the overall change in the wage bill has already been discussed, table 1 also presents estimates of the average of the percentage changes reported by enterprises and more notably the average increases and decreases recorded by enterprises who recorded an increase or decrease of greater than 2 percent. This illustrates the relative level of change made by enterprises who either increased or decreased their wage bill.

- ◆ Of those enterprises who reduced their wage bill by more than 2 percent the average reduction was 23%. In the case of enterprises who had increased their wage bill by more than 2 percent the average increase was 24%.
- ◆ Across sectors one clear conclusion is that the level of variability in the wage bill was lower in the public sector than the private sector with the average decrease in the public sector being 11% compared with 24% in the private sector. Similarly, in the case of increases, the average increase in the wage bill of private sector enterprises who increased their wage bill by more than 2 percent was 25% compared with 9% in the public sector. A broadly similar pattern could be seen across the different economic sectors within the private and public sectors respectively.

Table 1 - Changes in average wage bill by sector, Quarter 3 2008 to Quarter 3 2009

	Total % Change in Wage Bill	% of enterprises with reduction greater than 2%	% of enterprises with increase greater than 2%	Average % change by enterprise	Average % reduction of enterprises with reduction of more than 2%	Average % increase of enterprises with increase of more than 2%
Private Sector						
B-E Industry	-9	67	25	-10	-22	21
F Construction	-28	81	13	-30	-41	26
G Wholesale and retail	-7	67	21	-10	-21	22
H Transportation and storage	-11	64	30	-2	-18	32
I Accommodation and food services	-14	79	15	-8	-19	46
J Information and communication	-10	66	22	-9	-22	27
K-L Financial , insurance and real estate	-7	56	36	-5	-23	22
M Professional, scientific and technical	-19	72	19	-16	-29	26
N-P Administrative and support services and education	-15	65	28	-11	-28	27
Q Human health and social work	-2	38	46	1	-27	25
R-S Arts, entertainment, recreation and other social service activities	-14	67	29	-10	-23	18
Public Sector						
O Public administration and defence	-2	44	40	-2	-10	6
P Education	6	25	52	3	-11	10
Q Human health and social work	4	21	66	6	-10	13
Other Public Sector	-6	53	28	-4	-14	14
All private sector enterprises	-11	67	24	-10	-24	25
All public sector enterprises	0	37	45	0	-11	9
Total: All enterprises	-7	65	25	-9	-23	24

Chapter 2

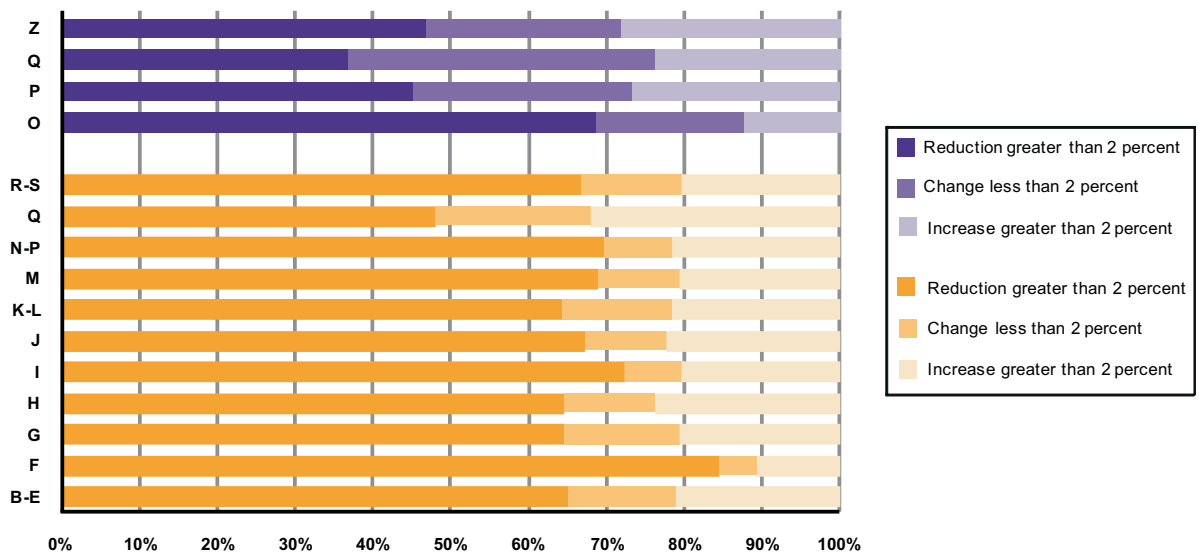
Employment

The situation with regard to employment was very similar to the situation observed for the overall wage bill. The overall reduction in the level of employment recorded in matched enterprises was 8%. By comparison the number of employees recorded by the QNHS fell by 9.5% over the year from Quarter 3 2008 to Quarter 3 2009. The non-coverage in this analysis of enterprises who ceased trading is one explanation for the difference in the estimates and this would explain why the estimate from this analysis would be lower than the true loss in employment over the period. However, there are also methodological differences between the two sources the direct effect of which cannot be estimated. See table 2.

The similarity in the patterns observed in wage bill and employment change suggest that employment was the component of the wage bill most frequently changed by enterprises who recorded a change in their wage bill. This is further illustrated in Chapter 5 of this report.

Similar to the situation recorded for the overall wage bill, two thirds of all enterprises (66%) reported a reduction in employment of greater than 2 percent over the year. See figure 2a.

Figure 2a Percentage of enterprises who changed their employment level by level of change and sector, Quarter 3 2008 to Quarter 3 2009



■ Private Sector	■ Public Sector
B-E Industry	O Public administration and defence
F Construction	P Education
G Wholesale and retail trade	Q Human health and social work
H Transportation and storage	Z Other public sector
I Accommodation and food services	
J Information and communication	
K-L Financial, insurance and real estate activities	
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	

As with the overall wage bill the greatest decrease in employment in the private sector was recorded in the *Construction* sector (-26%). An increase in employment was not recorded for the matched enterprises in any sector in the private sector. The overall reduction in employment recorded in matched enterprises in the private sector was 10%.

Within the private sector overall 67% of enterprises reported a reduction in employment of more than 2 percent.

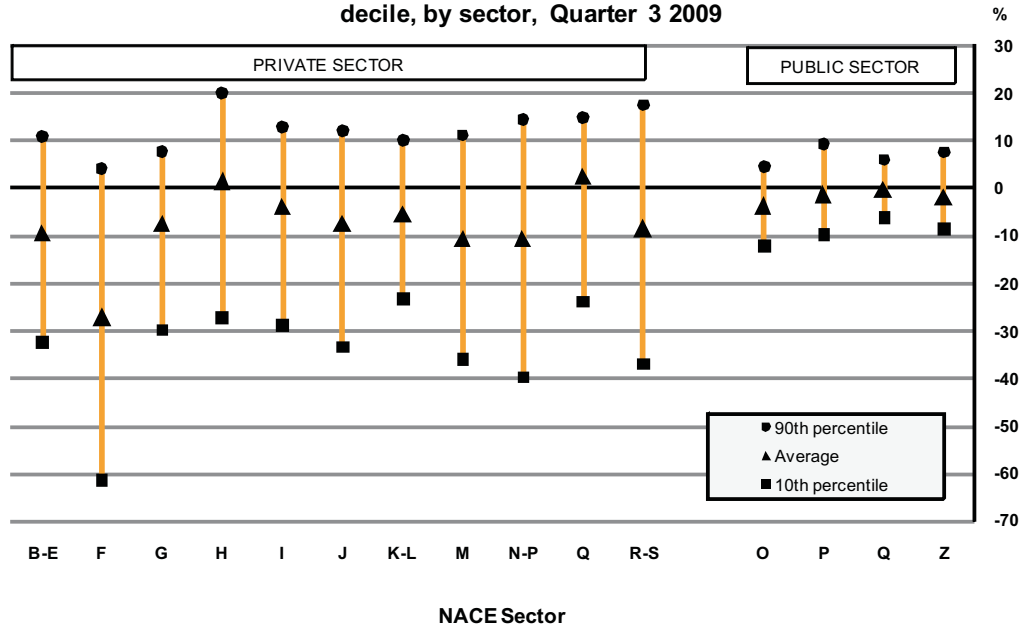
- ◆ Within the majority of sectors in the private sector close to two thirds of enterprises cut their employment level by more than 2 percent (between 64% and 70% of enterprises in 8 of the 11 sectors).
- ◆ The exceptions were *Construction* (84% of enterprises), *Accommodation and food services* (72% of enterprises) and *Human health and social work* (48% of enterprises).

There was a lower level of change in employment across the public sector. The overall reduction in employment in the public sector was 2%. The only sector within the public sector to record a change of greater than 1% was *Public administration and defence* (-4%). Over half of matched enterprises in the public sector (55%) had reduced employment by more than 2 percent over the year and reductions were most prevalent in the *Public administration and defence* sector (69% of enterprises).

Where enterprises did record an increase or decrease the average level of change was higher in the private sector than in the public sector. For example the average percentage decrease in employment of enterprises in the private sector who recorded a reduction in employment of greater than 2 percent was 20% compared with an average reduction of 8% in the comparable public sector enterprises and a similar pattern is seen for increases.

A further conclusion which can be drawn when comparing table 2 with tables 3 and 4 is that the level of change in employment where enterprises did record a change was greater than the level of change recorded in either standardised average weekly paid hours or standardised average hourly earnings. In other words both in terms of frequency and level of change employment was the component of the wage bill most changed over the year.

Figure 2b Annual employment change, average, 10th decile and 90th decile, by sector, Quarter 3 2009



Private Sector		Public Sector	
B-E	Industry	O	Public administration and defence
F	Construction	P	Education
G	Wholesale and retail trade	Q	Human health and social work
H	Transportation and storage	Z	Other public sector
I	Accommodation and food services		
J	Information and communication		
K-L	Financial, insurance and real estate activities		
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		

Table 2 - Changes in employment by sector, Quarter 3 2008 to Quarter 3 2009

	Total % Change in employment	% of enterprises with reduction greater than 2%	% of enterprises with increase greater than 2%	Average % change by enterprise	Average % reduction of enterprises with reduction of more than 2%	Average % increase of enterprises with increase of more than 2%
Private Sector						
B-E Industry	-10	65	21	-9	-20	17
F Construction	-26	84	11	-27	-36	28
G Wholesale and retail	-7	65	21	-7	-18	20
H Transportation and storage	-5	65	24	1	-18	54
I Accommodation and food services	-11	72	20	-4	-17	40
J Information and communication	-5	67	22	-7	-18	20
K-L Financial , insurance and real estate	-7	64	22	-6	-17	24
M Professional, scientific and technical	-11	69	21	-11	-22	20
N-P Administrative and support services and education	-15	70	22	-11	-24	29
Q Human health and social work	-4	48	32	2	-17	34
R-S Arts, entertainment, recreation and other social service activities	-12	67	20	-9	-22	30
Public Sector						
O Public administration and defence	-4	69	12	-4	-8	13
P Education	-1	45	27	-1	-9	10
Q Human health and social work	0	37	24	0	-6	8
Other Public Sector	-1	47	28	-2	-8	7
All private sector enterprises	-10	67	21	-8	-20	26
All public sector enterprises	-2	55	20	-2	-8	10
Total: All enterprises	-8	66	21	-8	-20	25

Chapter 3

Average Weekly Paid Hours (Standardised)

Standardised average weekly paid hours (and average hourly earnings as presented in Chapter 4) have been derived by estimating an overall average at the enterprise level using the proportion of employment recorded in the three occupational groups in Quarter 3 2008 as weights. The effect of this is to remove the effect of compositional change across the three occupational groups from the estimated average for the enterprise. The estimates for Quarter 3 2008 and Quarter 3 2009 estimated on this basis can then be compared to establish the level of change over the year. See *Background Notes for more information*.

It can be seen that following employment, average weekly paid hours was the next most frequently cut of the three components of average hourly earnings in the year to Quarter 3 2009.

At an overall level standardised average weekly paid hours in the matched enterprises fell by 2% over the year. The published annual change in average weekly paid hours for Quarter 3 2009 is -2.7% or -3% rounded suggesting a low downward compositional effect of up to 1%.

In common with average hourly earnings the level of change in average paid hours was relatively less than the change in employment recorded. In all sectors across the public and private sectors standardised average weekly paid hours changed by 4% or less. The overall reduction was 2% in the private sector compared with 1% in the public sector.

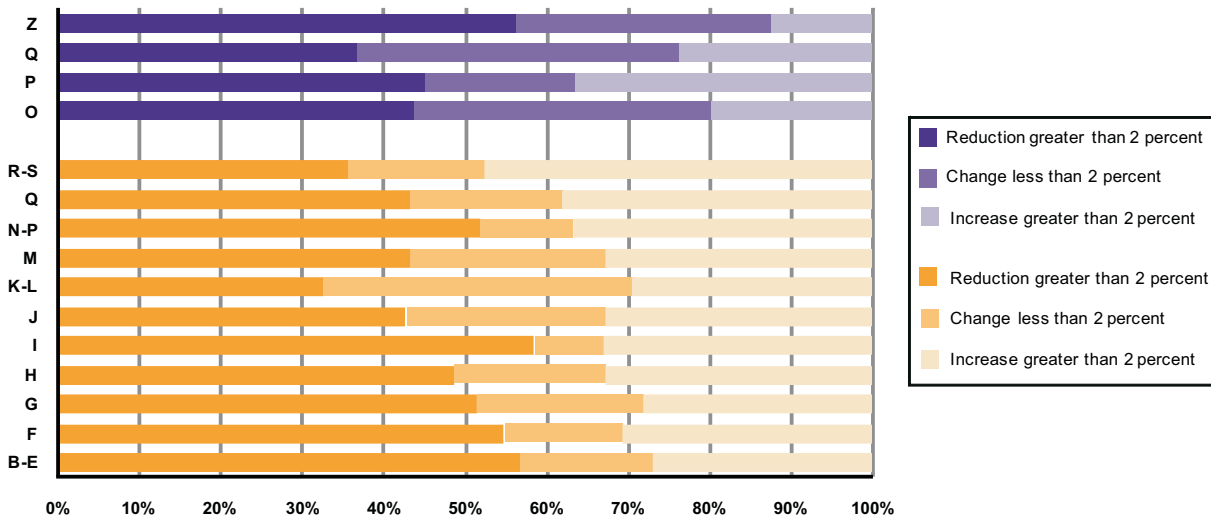
- ◆ The greatest reduction in standardised average weekly paid hours was 4% and this was recorded in 3 sectors within the private sector, namely *Industry, Accommodation and food services* and *Administrative and support services and education*. This level of reduction was also recorded in *Other public sector*.
- ◆ An increase in standardised average weekly paid hours was recorded in only one sector in the private sector, namely *Arts, entertainment, recreation and other social service activities* (+2%) and one sector in the public sector, namely *Education* (+4%).

Just over half of all enterprises (51%) recorded a reduction of more than 2 percent in standardised average weekly paid hours while less than one third (31%) recorded an increase of more than 2 percent. The remaining 18% of enterprises recorded a change of 2 percent or less.

A comparison of the private and public sectors shows a relatively greater level of change in the private sector with 51% of enterprises recording a reduction of greater than 2 percent, 31% showing an increase of greater than 2 percent and 18% showing little change over the year. In the public sector 45% showed a reduction of greater than 2 percent, 24% showed an increase of greater than 2 percent while 31% showed little change. See *figure 3a*.

However in both the public and private sector the most common situation recorded was a reduction in standardised average weekly paid hours. Only in the *Arts, entertainment, recreation and other social service activities* sector within the private sector did a greater proportion of enterprises record an increase rather than a decrease in average hours (48% of enterprises recording an increase of greater than 2 percent).

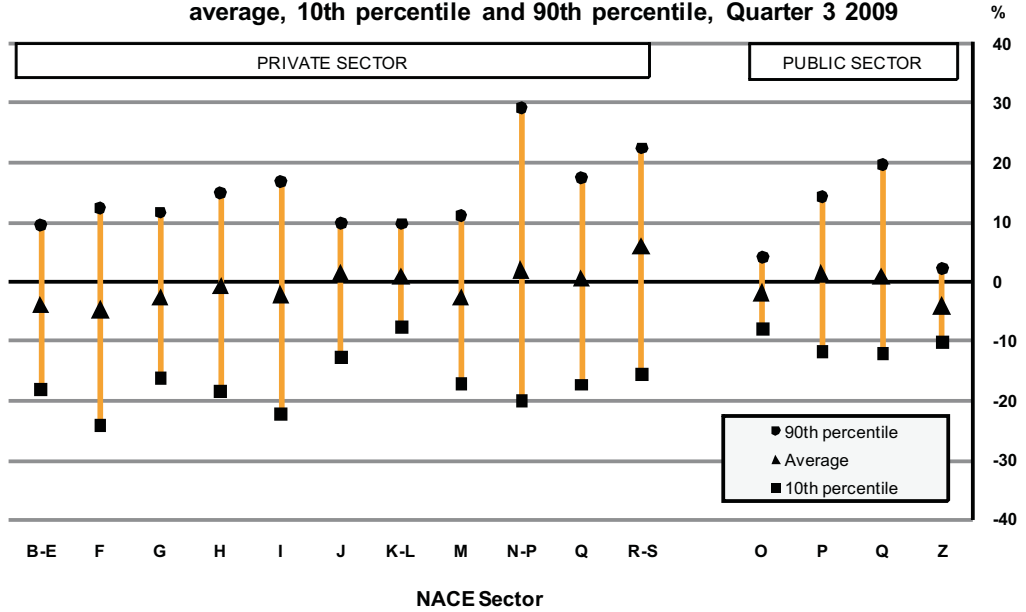
Figure 3a Percentage of enterprises who changed their average weekly paid hours (standardised) by level of change and sector, Quarter 3 2008 to Quarter 3 2009



Private Sector		Public Sector	
B-E	Industry	O	Public administration and defence
F	Construction	P	Education
G	Wholesale and retail trade	Q	Human health and social work
H	Transportation and storage	Z	Other public sector
I	Accommodation and food services		
J	Information and communication		
K-L	Financial, insurance and real estate activities		
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		

Looking at the level of change in average hours it is clear that the level of change in average hours was less than the level of change in employment. Within enterprises who had a reduction in their standardised average weekly paid hours of greater than 2 percent the average reduction was 12%, however among those who had an increase of greater than 2 percent the average increase was 14%. Another issue which is illustrated by figure 3b is that the level of difference both between the public and private sector and across the detailed sectors was relatively less than recorded for employment.

Figure 3b Annual change in standardised average weekly paid hours, average, 10th percentile and 90th percentile, Quarter 3 2009



Private Sector		Public Sector	
B-E	Industry	O	Public administration and defence
F	Construction	P	Education
G	Wholesale and retail trade	Q	Human health and social work
H	Transportation and storage	Z	Other public sector
I	Accommodation and food services		
J	Information and communication		
K-L	Financial, insurance and real estate activities		
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		

Table 3 - Changes in standardised average weekly paid hours¹ by sector, Quarter 3 2008 to Quarter 3 2009

	Total % Change in average weekly paid hours	% of enterprises with reduction greater than 2%	% of enterprises with increase greater than 2%	Average % change in by enterprise	Average % reduction of enterprises with reduction of more than 2%	Average % increase of enterprises with increase of more than 2%
Private Sector						
B-E Industry	-4	57	27	-4	-12	10
F Construction	-3	55	31	-5	-15	12
G Wholesale and retail	0	51	28	-3	-12	12
H Transportation and storage	-2	49	33	-1	-11	14
I Accommodation and food services	-4	58	33	-2	-14	18
J Information and communication	0	43	33	1	-8	14
K-L Financial , insurance and real estate	0	33	29	1	-7	11
M Professional, scientific and technical	-1	43	33	-3	-13	10
N-P Administrative and support services and education	-4	52	37	2	-14	25
Q Human health and social work	0	43	38	0	-12	15
R-S Arts, entertainment, recreation and other social service activities	2	36	48	6	-13	22
Public Sector						
O Public administration and defence	-1	44	20	-2	-7	6
P Education	4	45	37	1	-8	13
Q Human health and social work	0	37	24	1	-8	17
Other Public Sector	-4	56	13	-4	-8	7
All private sector enterprises	-2	51	31	-2	-12	14
All public sector enterprises	-1	45	24	-1	-7	10
Total: All enterprises	-2	51	31	-2	-12	14

¹Average weekly paid hours for each enterprise were standardised with reference to the level of employment in each occupational group for that enterprise in Quarter 3 2008. The effect of standardisation is to remove the effect of changes in the composition of employment across the occupational groups within the enterprise over the year.

Chapter 4

Average Hourly Earnings (Standardised)

Standardised average hourly earnings were estimated in a similar manner to standardised average weekly paid hours in order to remove the effect of change in the composition of employment within enterprises in so far as possible with the occupational data available.

Average hourly earnings were the least frequently reduced component of earnings and indeed overall average earnings increased marginally by 1% over the year on a standardised basis across the matched enterprises. Furthermore a higher proportion of enterprises increased rather than reduced their standardised average hourly earnings by more than 2 percent (47% compared with 35%). See *table 4*.

In both the public and private sectors an increase of 1% in standardised average hourly earnings was recorded over the year to Quarter 3 2009. In this particular comparison it must be noted that the pension levy is not reflected as this did not directly reduce the pay bill of public sector enterprises.

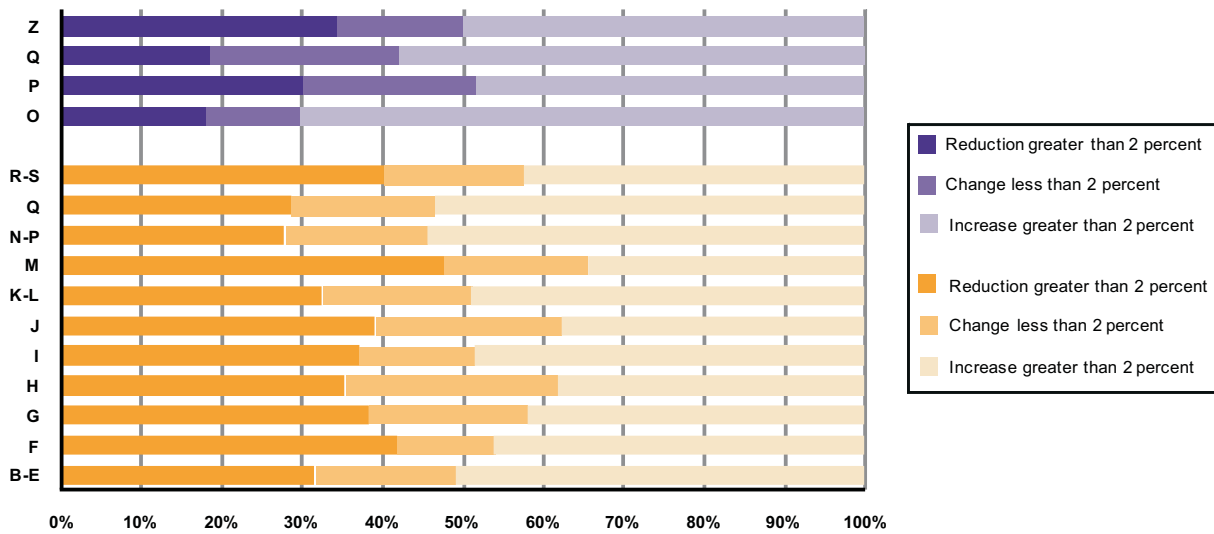
- ◆ Across sectors within the private sector standardised average hourly earnings fell in 3 of the 11 sectors, increased in 7 and were unchanged in 1 sector. The greatest level of decrease was recorded in *Professional, scientific and technical* (-5%) while the largest increase was recorded in *Industry* (+3%) and *Human health and social work* (+3%).
- ◆ Within the public sector the level of change in all 4 sectors covered was 2% or less with a 2% increase recorded in *Public administration and defence* and *Human health and social work*, while a 2% decrease was recorded in *Other public sector*. See *figure 4a*.

In terms of the frequency of reductions or increases in average hourly earnings it could be seen that a higher proportion of enterprises had recorded increases rather than reductions in average hourly earnings in the majority of sectors. In the private sector an increase in standardized average hourly earnings was recorded for 46% of enterprises while reductions were recorded for 36% of enterprises. In the public sector increases were recorded for 61% of enterprises while reductions were recorded for 23% of enterprises.

- ◆ Within the private sector a clearly higher proportion of enterprises had reduced rather than increased their standardised average hourly earnings by more than 2 percent in only 1 of the 12 sectors, namely *Professional, scientific and technical* (48% compared with 34%).
- ◆ The reverse situation was seen in 8 sectors (i.e. where clearly more enterprises increased average hourly earnings by more than 2 percent than reduced them), namely *Industry, Construction, Wholesale and retail, Transportation and storage, Accommodation and food services, Financial, insurance and real estate, Administrative and support services and education* and *Human health and social work*.
- ◆ In the remaining 2 sectors relatively little difference was seen (i.e. the proportion of enterprises reducing and increasing average hourly earnings was within a 2 percent range).

In the public sector larger proportions of enterprises increased rather than reduced standardised average hourly earnings in all 4 of the sectors presented.

Figure 4a Percentage of enterprises who changed their average hourly earnings (standardised) by level of change and sector, Quarter 3 2008 to Quarter 3 2009

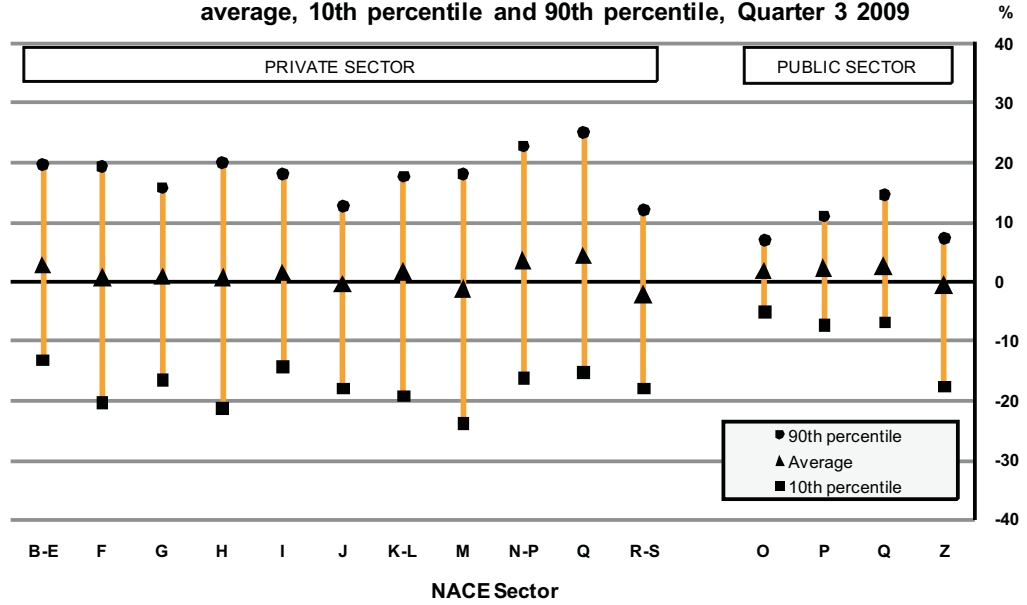


Private Sector		Public Sector	
B-E	Industry	O	Public administration and defence
F	Construction	P	Education
G	Wholesale and retail trade	Q	Human health and social work
H	Transportation and storage	Z	Other public sector
I	Accommodation and food services		
J	Information and communication		
K-L	Financial, insurance and real estate activities		
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		

Similar to average weekly paid hours the level of change made by enterprises was relatively lower than employment. Overall the average reduction made by enterprises who reduced their standardised average hourly earnings by more than 2 percent was 13%, for enterprises who had increases the corresponding average increase was 12%. See figure 4b.

In summary, standardised average hourly earnings were increased rather than cut by proportionally more enterprises over the year and this was true in both the public and private sectors. The level of change by enterprises however was lesser than that seen in the case of employment. This yielded a relatively low overall increase of 1% in standardised average hourly earnings over the year.

Figure 4b Annual change in standardised average hourly earnings, average, 10th percentile and 90th percentile, Quarter 3 2009



Private Sector	Public Sector
B-E Industry	O Public administration and defence
F Construction	P Education
G Wholesale and retail trade	Q Human health and social work
H Transportation and storage	Z Other public sector
I Accommodation and food services	
J Information and communication	
K-L Financial, insurance and real estate activities	
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	

Table 4 - Changes in standardised average hourly earnings¹ by sector, Quarter 3 2008 to Quarter 3 2009

	Total % Change in average hourly earnings (standardised)	% of enterprises with reduction greater than 2%	% of enterprises with increase greater than 2%	Average % change in by enterprise	Average % reduction of enterprises with reduction of more than 2%	Average % increase of enterprises with increase of more than 2%
Private Sector						
B-E Industry	3	32	51	3	-12	13
F Construction	1	42	46	1	-15	15
G Wholesale and retail	1	38	42	1	-12	13
H Transportation and storage	-1	35	38	1	-15	15
I Accommodation and food services	0	37	49	1	-11	12
J Information and communication	1	39	38	-1	-13	12
K-L Financial , insurance and real estate	1	33	49	1	-14	12
M Professional, scientific and technical	-5	48	34	-1	-15	17
N-P Administrative and support services and education	2	28	54	3	-15	14
Q Human health and social work	3	29	53	4	-14	15
R-S Arts, entertainment, recreation and other social service activities	-1	40	42	-2	-14	8
Public Sector						
O Public administration and defence	2	18	70	2	-11	5
P Education	1	30	48	2	-8	9
Q Human health and social work	2	18	58	2	-10	7
Other Public Sector	-2	34	50	-1	-12	7
All private sector enterprises	1	36	46	1	-13	13
All public sector enterprises	1	23	61	2	-10	6
Total: All enterprises	1	35	47	1	-13	12

¹Average hourly earnings for each enterprise were standardised with reference to the level of employment in each occupational group for that enterprise in Quarter 3 2008. The effect of standardisation is to remove the effect of changes in the composition of employment across the occupational groups within the enterprise over the year.

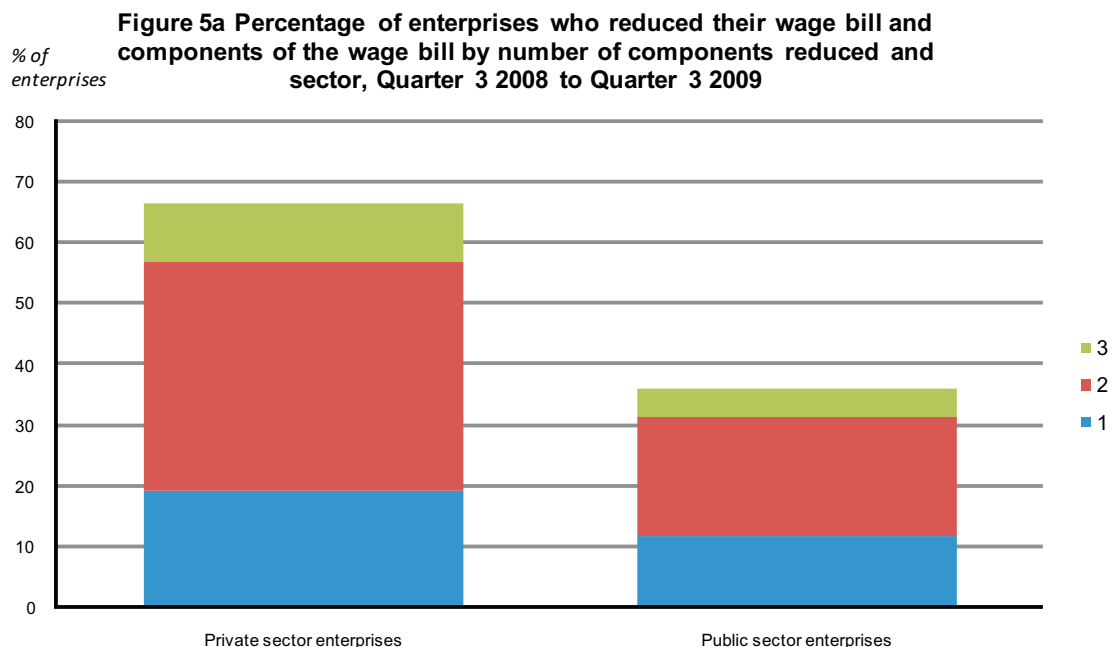
Chapter 5

Wage Bill Changes by Component - Combined

As already noted the numbers employed was the component of the wage bill most frequently changed by enterprises and in particular the most frequently cut component over the year to Quarter 3 2009 followed by average weekly paid hours and average hourly earnings. However, individual enterprises may have cut or increased all three components or two or only one. This section of the report focuses on what enterprises did in terms of combined component changes.

Enterprises with a reduced wage bill

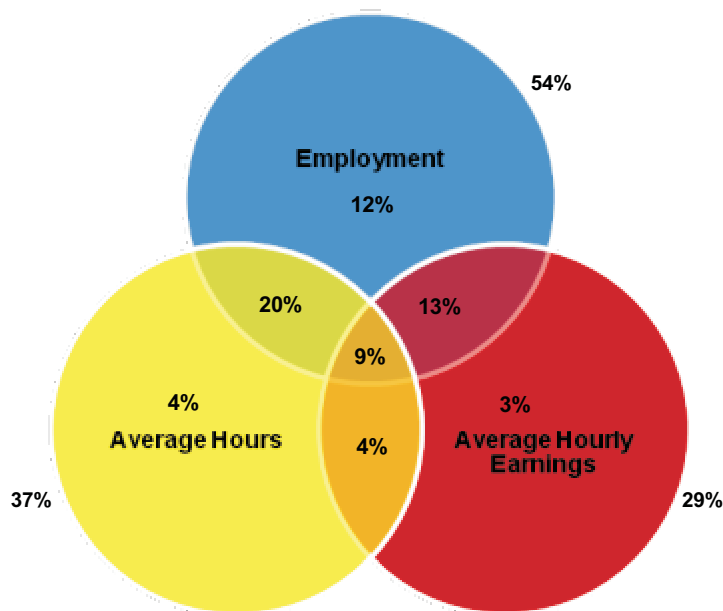
Table 5b shows the breakdown of those enterprises who recorded a reduction of more than 2 percent in their wage bill, i.e. it looks in more detail at the 65% of enterprises who reduced their wage bill by more than 2 percent over the year. See table 5a, table 5b and figure 5a.



- ◆ Just under one in ten enterprises (9%) reduced their wage bill and all three components. This group of enterprises represents just under one in seven of those enterprises who reduced their wage bill.
- ◆ The largest group of enterprises cut their wage bill and two of the three components (37%).
- ◆ 19% of enterprises cut their wage bill and only one of the components

- ◆ It can again be seen that employment was the most frequently cut component, 54% of all enterprises cut their wage bill using employment as at least one element of the reduction. This group represents approximately 83% of the enterprises who cut their wage bill. Another way of stating this is that only 11% of all enterprises (or 17% of enterprises who cut their wage bill by more than 2 percent) made wage bill cuts but did not reduce employment. See table 5b and figure 5b.
- ◆ Average weekly paid hours (standardised) was the next most frequently cut component with 37% of enterprises reducing their wage bill and using average weekly paid hours as part of the reduction. This group represented approximately 57% of the enterprises who reduced their wage bill by more than 2 percent.
- ◆ Average hourly earnings were included in a wage bill reduction by 29% of all enterprises (i.e. slightly less than half of the 65% of enterprises who had a reduced wage bill).

Figure 5b Percentage of enterprises reducing their wage bill and components of the wage bill, by components reduced, Quarter 3 2008 to Quarter 3 2009

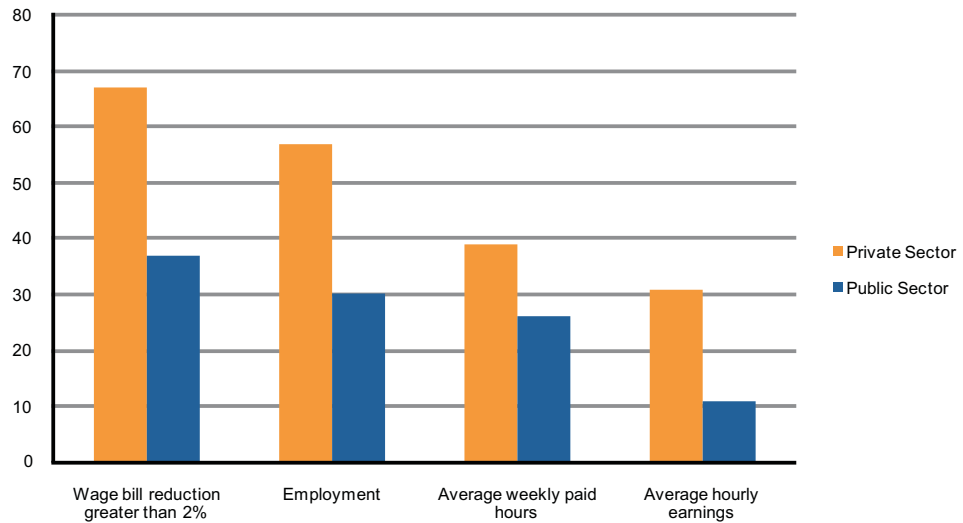


The private sector pattern was very similar to that described for all enterprises above. Employment was included in a reduction by the large majority of enterprises who reduced their wage bill. Nearly three fifths of all private sector enterprises (57%) had reduced their wage bill and employment, representing 85% of those private sector enterprises who had reduced their wage bill by more than 2 percent.

The pattern was somewhat similar in the public sector although at lower rates as 37% of public sector enterprises had cut their wage bill by more than 2 percent over the period compared with 67% in the private sector. Again, employment was the component most frequently included in a wage bill reduction (30% of all public sector enterprises), followed by average weekly paid hours (26% of all public sector enterprises) and average hourly earnings (11% of all public sector enterprises). See figure 5c.

Across the more detailed sectors for the most part the above pattern was repeated. With few exceptions the largest group of enterprises across sectors had reduced two of the three components, followed by one component with the lowest proportion of enterprises cutting all three components. Where one or two components had been reduced employment was reduced in the majority of cases, with hours being the next most frequently cut component, followed by average hourly earnings.

Figure 5c Percentage of enterprises reducing their wage bill and components of the wage bill by component reduced and sector, Quarter 3 2008 to Quarter 3 2009



Enterprises with an increased wage bill

Table 5d presents a similar range of information as table 5b with regard to the 25% of enterprises who increased their wage bill by more than 2 percent over the year. The overall proportion of enterprises reporting increases has already been discussed in Chapter 1. See table 5d.

No clear pattern emerges with regards to a predominant combination of components involved in such increases. Across all sectors a very low proportion of enterprises had increased their wage bill and all three components. Overall just 2% of enterprises fell into this grouping (2% of private sector enterprises and 1% of public sector enterprises). Similar proportions of enterprises had increased their wage bill and one or two components (12% increased two components while 10% increased one component). See table 5c and figure 5d.

Furthermore there was little evident pattern with regard to which component (or combination of components) was most frequently increased by enterprises increasing their wage bill, unlike the situation with enterprises who reduced their wage bill.

Figure 5d Percentage of enterprises increasing their wage bill and components of the wage bill by component increased and sector, Quarter 3 2008 to Quarter 3 2009

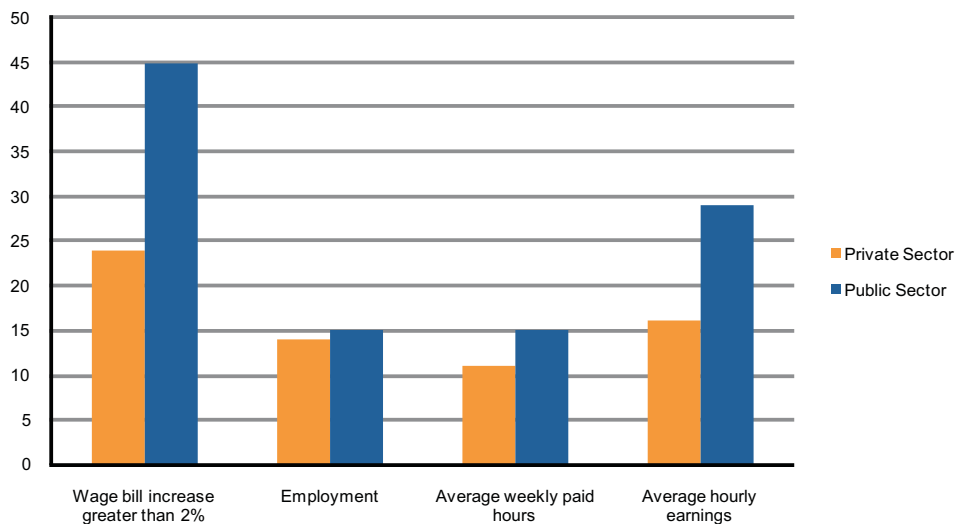


Table 5a - Reductions in total wage bill by number of components reduced and sector, Quarter 3 2008 to Quarter 3 2009

	% of enterprises with wage bill reduction greater than 2%	% of enterprises		
		Number of components reduced		
		3	2	1
Private Sector				
B-E Industry	67	9	40	18
F Construction	81	17	49	15
G Wholesale and retail	67	12	34	21
H Transportation and storage	64	4	37	21
I Accommodation and food services	79	7	54	18
J Information and communication	66	7	34	25
K-L Financial , insurance and real estate	56	3	28	23
M Professional, scientific and technical	72	15	35	21
N-P Administrative and support services and education	65	10	37	18
Q Human health and social work	38	6	18	13
R-S Arts, entertainment, recreation and other social service activities	67	8	31	29
Public Sector				
O Public administration and defence	44	8	17	18
P Education	25	2	20	3
Q Human health and social work	21	0	16	5
Other Public Sector	53	3	34	13
All private sector enterprises	67	10	38	19
All public sector enterprises	37	5	20	12
Total: All enterprises	65	9	37	19

Table 5b - Reductions in total wage bill by components of change¹ and sector, Quarter 3 2008 to Quarter 3 2009

	All components reduced			Two components reduced			One component reduced			% of enterprises
	% of enterprises with wage bill reduction greater than 2% ²	% of enterprises with reduced wage bill and all components	% of enterprises with reduced wage bill, employment and average hours	% of enterprises with reduced wage bill, employment and average hours	% of enterprises with reduced wage bill, average hours and hourly earnings	% of enterprises with reduced wage bill and employment	% of enterprises with reduced wage bill and average hours	% of enterprises with reduced wage bill and hourly earnings		
Private Sector										
B-E Industry	67	9	26	10	3	11	4	3		
F Construction	81	17	29	18	2	13	2	1		
G Wholesale and retail	67	12	16	13	5	12	5	3		
H Transportation and storage	64	4	17	17	4	15	4	2		
I Accommodation and food services	79	7	31	17	6	11	6	1		
J Information and communication	66	7	14	16	3	17	3	5		
K-L Financial, insurance and real estate	56	3	12	16	0	17	1	5		
M Professional, scientific and technical	72	15	13	20	2	14	4	3		
N-P Administrative and support services and education	65	10	24	10	3	12	5	2		
Q Human health and social work	38	6	9	7	1	5	4	4		
R-S Arts, entertainment, recreation and other social service activities	67	8	12	15	4	20	5	3		
Public Sector										
O Public administration and defence	44	8	14	1	2	14	3	1		
P Education	25	2	17	2	2	2	0	2		
Q Human health and social work	21	0	11	3	3	3	3	0		
Other Public Sector	53	3	19	6	9	6	6	0		
All private sector enterprises	67	10	21	14	4	12	4	3		
All public sector enterprises	37	5	15	2	3	8	3	1		
Total: All enterprises	65	9	20	13	4	12	4	3		

¹The 3 components of change to the total wage bill of an enterprise are taken to be employment level, average weekly paid hours per employee and average hourly earnings per employee.

Average weekly paid hours and average hourly earnings have been calculated on a standardised basis to remove the effect of the change in the composition of employment in the enterprise.

²The change across components may not sum to the total as there are a small percentage of enterprises who reduced their total wage bill without reducing the 3 identified components.

Changes in this case could be due solely to compositional change within the enterprise

Table 5c - Increase in total wage bill by number of components increased and sector, Quarter 3 2008 to Quarter 3 2009

	% of enterprises			
	% of enterprises with wage bill increase greater than 2%	Number of components increased		
		3	2	1
Private Sector				
B-E Industry	25	2	14	9
F Construction	13	1	7	5
G Wholesale and retail	21	1	9	9
H Transportation and storage	30	1	12	16
I Accommodation and food services	15	2	8	5
J Information and communication	22	1	12	7
K-L Financial , insurance and real estate	36	2	17	16
M Professional, scientific and technical	19	3	9	7
N-P Administrative and support services and education	28	4	17	6
Q Human health and social work	46	4	23	19
R-S Arts, entertainment, recreation and other social service activities	29	5	11	12
Public Sector				
O Public administration and defence	40	1	12	25
P Education	28	2	23	25
Q Human health and social work	52	3	24	29
Other Public Sector	66	0	13	16
All private sector enterprises	24	2	12	9
All public sector enterprises	45	1	17	24
Total: All enterprises	25	2	12	10

Table 5d - Increases in total wage bill by components of change¹ and sector, Quarter 3 2008 to Quarter 3 2009

	All components increased		Two components increased			One component increased			% of enterprises
	% of enterprises with wage bill increase greater than 2% ²	% of enterprises with increased wage bill and all components	% of enterprises with increased wage bill, employment and average hours	% of enterprises with increased wage bill, with employment and hourly earnings	% of enterprises with increased wage bill, average hours and hourly earnings	% of enterprises with increased wage bill and employment	% of enterprises with increased wage bill and average hours	% of enterprises with increased wage bill and hourly earnings	
Private Sector									
B-E Industry	25	2	3	8	3	3	1	4	
F Construction	13	1	3	3	1	2	1	2	
G Wholesale and retail	21	1	2	4	4	3	2	3	
H Transportation and storage	30	1	2	9	2	6	3	7	
I Accommodation and food services	15	2	2	4	2	2	2	1	
J Information and communication	22	1	3	6	3	3	3	1	
K-L Financial , insurance and real estate	36	2	5	7	5	4	1	12	
M Professional, scientific and technical	19	3	2	6	2	2	2	3	
N-P Administrative and support services and education	28	4	3	6	9	2	2	3	
Q Human health and social work	46	4	4	10	8	4	4	10	
R-S Arts, entertainment, recreation and other social service activities	29	5	5	2	5	2	5	5	
Public Sector									
O Public administration and defence	40	1	3	3	6	1	4	20	
P Education	52	2	7	13	3	2	8	15	
Q Human health and social work	66	3	5	8	11	8	3	18	
Other Public Sector	28	0	3	9	0	9	6	0	
All private sector enterprises	24	2	3	6	4	3	2	4	
All public sector enterprises	45	1	4	7	5	3	5	16	
Total: All enterprises	25	2	3	6	4	3	2	5	

¹The 3 components of change to the total wage bill of an enterprise are taken to be employment level, average weekly paid hours per employee and average hourly earnings per employee.

Average weekly paid hours and average hourly earnings have been calculated on a standardised basis to remove the effect of the change in the composition of employment in the enterprise.

²The change across components may not sum to the total as there are a small percentage of enterprises who increased their total wage bill without increasing the 3 identified components.

Changes in this case could be due solely to compositional change within the enterprise

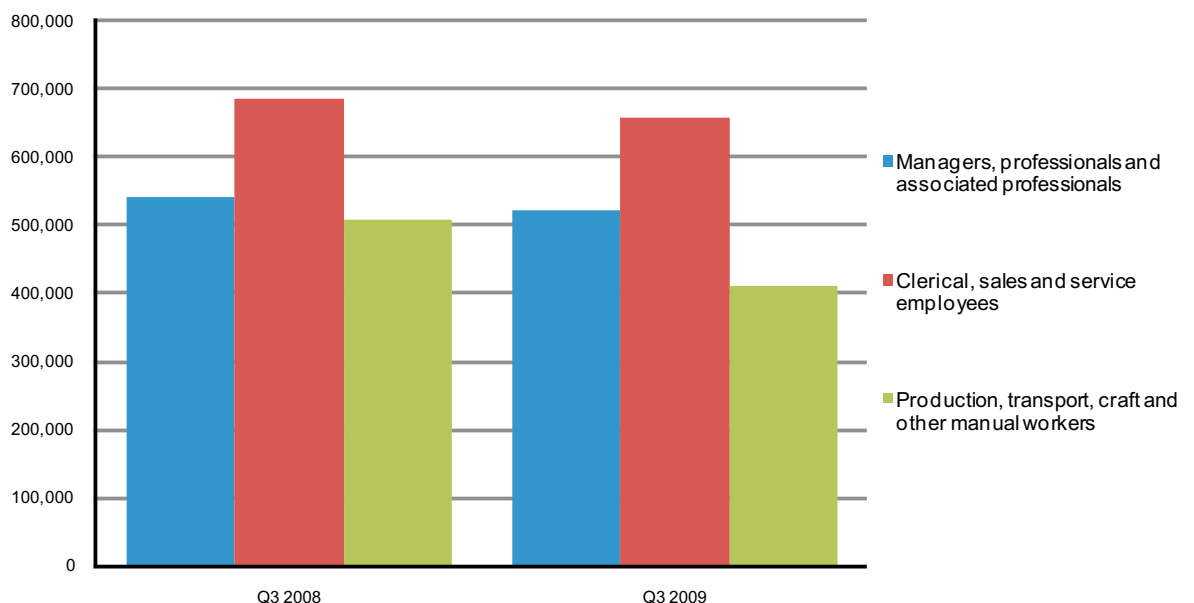
Chapter 6

Compositional Effect on Average Hourly Earnings

An issue which has been of interest in relation to the evolution of average earnings has been the issue of a compositional effect. The broad issue has been that as the greater fall in employment has been in the occupational groups with lower earnings then a positive compositional effect would have been expected to have occurred, i.e. average earnings were pulled up by the fact that a higher proportion of employees were in the *Managers, professionals and associated professionals* occupational group in Quarter 3 2009 than in Quarter 3 2008.

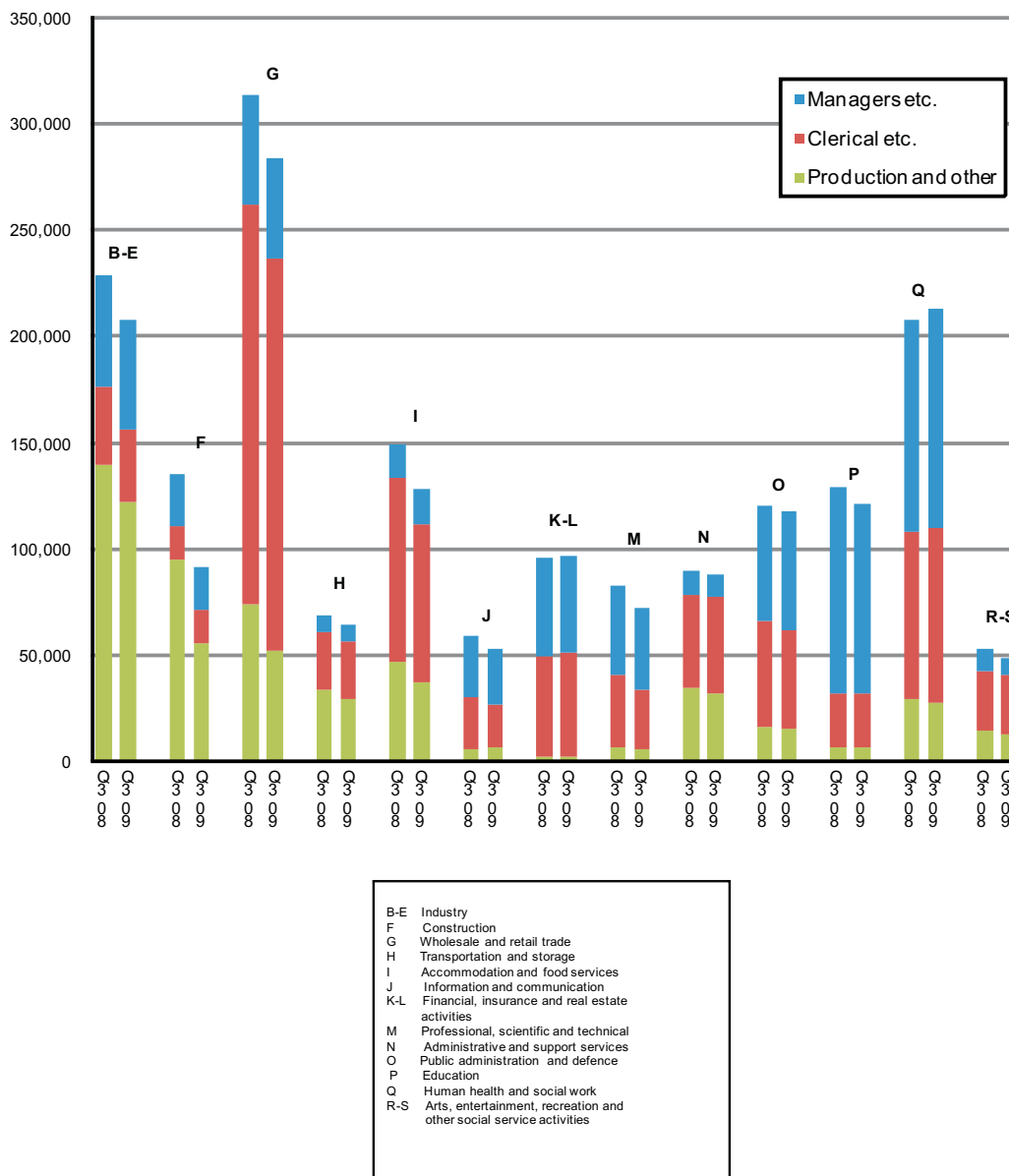
This high level change in the composition of employment is illustrated by figure 6a. In particular it can be noted that the decrease in the number of employees in the *Production, transport, craft and other manual workers* occupational group (-19.2%) was significantly greater than the reduction in employment recorded for *Managers, professionals and associated professionals* (-3.8%) and *Clerical, sales and service employees* (-4.0%). See figure 6a.

Figure 6a Number of employees by occupation, Quarter 3 2008 and Quarter 3 2009



However further analysis of this issue shows that the impact of compositional change is dependent upon the sectors within which the greatest compositional change occurs, as well as the occupations involved. This is true because both the composition of employment and the average level of earnings by occupation vary significantly across sectors. Table 6a shows the percentage change in earnings by occupational group and sector over the period Quarter 3 2008 to Quarter 3 2009. Table 6a also shows the average hourly earnings for employees in these different groups. These estimates are based on the full EHECS sample rather than the matched enterprises sample used in the majority of this report. It can quickly be seen that employment changes in the occupations are more heavily concentrated in certain sectors and also that average hourly earnings by occupation vary significantly by sector. See table 6a and figure 6b.

Figure 6b Number of employees by occupation by sector, Quarter 3 2008 and Quarter 3 2009



By using the Quarter 3 2008 total employment levels as weights it is possible to undertake a simple estimation of average hourly earnings by occupation in Quarter 3 2009 if employment composition by sector and occupation had not changed over the year. The estimated average hourly earnings for the three occupational groups holding composition constant in this manner are shown in table 6b. This illustrates that if the composition of employment had not changed over the year the average earnings of *Managers, professionals and associate professionals* would have increased by 1.5% over the year. The actual recorded change was a reduction of 0.2%. This suggests the change in composition across sectors, even based on high level estimation, reduced average hourly earnings of that occupational group by 1.7% over the year. See table 6b

The above finding suggests that an overall conclusion of an upward compositional effect due to greater reductions in employment among lower paid occupational groups cannot necessarily be relied upon when there were compositional effects within occupational groups themselves.

Using standardised average hourly earnings to estimate compositional effect

An additional aspect of compositional change is the change in numbers employed in different enterprises within sectors as there is also variation in earnings levels across enterprises. This is not in any way accounted for by the above analysis. The estimation of standardised average weekly paid hours and average hourly earnings attempts to deal with this aspect by holding the composition of employment fixed at the enterprise level. Even at this level of correction, this is far from an ideal measure of compositional effect as such a measure should take account of detailed differences in jobs and employees. However it is somewhat illustrative of the effect of high level change in the structure of employment as observed through the EHECS survey.

By comparing the trend in standardised average hourly earnings to the trend in average hourly earnings as published for Quarter 3 2009 in the *Earnings and Labour Costs* release a broad estimate of the compositional effect on the change in earnings over the year can be derived.

The published annual percentage change in average hourly earnings was +2% rounded to zero decimals. The change in standardised average hourly earnings over the same period is estimated as +1%. This implies an overall compositional effect of approximately +1% on average hourly earnings over the year based on the changes which could be observed using the collected data from matched enterprises. In other words a higher proportion of employees now being in higher paid occupations or sectors has increased average hourly earnings by 1%.

- ◆ Within the private sector the published annual change in average hourly earnings was +1.2%, or 1% rounded to zero decimals, this is the same as the 1% estimated based on standardised average hourly earnings. This suggests that, while there may have been compositional effects within sectors, the overall effect on balance is minimal.
- ◆ Within the public sector the annual change based on existing published data was +1.9% or 2% rounded. On a standardised basis an increase of 1% was recorded. As such this suggests an overall minor downward compositional effect of -1%.
- ◆ Despite the neutral or negative compositional effects within the public and private sectors the overall estimated compositional effect across all enterprises was positive (+1%) – this can be explained as the outcome of a change in composition between the public and private sectors whereby a higher proportion of total employment in Quarter 3 2009 was in the public sector than had been the case a year earlier and average hourly earnings are higher in the public sector.
- ◆ The more detailed sectoral breakdown within this report differs slightly to that published in the main *Earnings and Labour Costs* releases, as within this report the public and private sectors are separately distinguished in the more detailed sectors whereas in existing published data they are not. This limits the direct comparability of the more detailed sectoral data. In so far as broad comparisons can be made for individual sectors it can be concluded that the level and direction of compositional effect on average hourly earnings differs by sector, i.e. the compositional effect does not appear to be positive in all cases.

In summary it is not possible to fully deal with the effect of compositional change on earnings with available data. In so far as corrections can be made the broad conclusion is that the compositional effect is relatively low. At the all enterprises level using standardised average hourly earnings estimated compositional effect as of Quarter 3 2009 was +1%. In other words observable compositional change, such as (but not limited to) a higher proportion of managers in the workforce, increased average hourly earnings by 1% over the period. This compositional effect varied across sectors.

Table 6a Percentage change in employment, Quarter 3 2008 to Quarter 3 2009 and average hourly earnings Quarter 3 2009, by occupation

NACE Principal Activity	% Change in Employment Q308 to Q309			Average Hourly Earnings Q309		
	Managers etc. ¹ %	Clerical etc. ² %	Production etc. ³ %	Managers etc. ¹ €	Clerical etc. ² €	Production etc. ³ €
B-E Industry	-3.0	-7.9	-13.2	31.03	20.26	17.20
F Construction	-15.3	-3.1	-40.4	30.16	16.11	18.34
G Wholesale and retail trade; repair of motor vehicles and motorcycles	-7.6	-2.1	-29.0	25.68	13.70	13.55
H Transportation and Storage	-7.2	-1.1	-10.1	35.40	18.70	16.67
I Accommodation and Food Services	3.8	-12.5	-18.3	18.06	11.56	11.20
J Information and communication	-10.8	-13.9	17.2	31.70	18.48	18.54
K-L Financial, insurance and real estate	-0.7	4.5	0.0	36.39	18.30	16.92
M Professional, scientific and technical	-6.8	-18.2	-7.5	30.00	17.23	15.64
N Administrative and support services	-14.3	-7.5	-16.1	29.61	14.39	13.57
O Public administration and defence	1.1	-5.8	-3.7	33.61	23.24	19.41
P Education	-3.3	2.7	0.0	42.12	18.21	16.58
Q Human health and social work	3.4	4.8	-6.4	31.32	18.07	16.25
R-S Arts, entertainment, recreation and other service activities	-19.0	-0.4	-9.5	25.65	13.30	12.64
Total	-3.8	-4.0	-19.2	32.20	16.38	16.09

¹Managers, professionals and associated professionals²Clerical, sales and service employees³Production, transport, craft and other manual workers

Table 6b Average hourly earnings and annual % change in average hourly earnings, Q3 2009

Occupational group	Q308		Average Hourly Earnings		% Change Q308 to Q309	
	Published	Alternative ¹	Published	Alternative ¹	Published	Alternative ¹
	€	€	€	€		
Managers, professionals and associated professionals	32.26	32.74	32.20	32.74	-0.2	1.5
Clerical, sales and service employees	16.35	16.09	16.38	16.09	0.2	-1.6
Production, transport, craft and other manual workers	15.78	15.90	16.09	15.90	2.0	0.8

¹The alternative figures have been estimated by applying employment by occupational group by sector in Q3 2008 as weights to the Q3 2009 average hourly earnings estimates.

Background Notes

Introduction

The analysis in this release is generated from data collected through the quarterly Earnings, Hours and Employment Costs Survey (EHECS). For further details on the methodology of the survey see the quarterly Earnings and Labour Costs release on www.cso.ie.

These notes refer to issues specific to this analysis.

Sample

The sampling methodology of EHECS is outlined in the Earnings and Labour Costs release. For this particular report a matched sample of enterprises who responded both in Quarter 3 2008 and Quarter 3 2009 was used. The level of coverage in relation to the sectors presented in the release is shown in table A1 below:

Table A1 - Sample Size: Number of respondent enterprises and employees, Quarter 3 2008 and Quarter 3 2009

	Number of Enterprises Matched	Number of Employees in matched enterprises	
		Quarter 3 2008	Quarter 3 2009
Private Sector			
B-E Industry	743	150,300	135,500
F Construction	263	29,100	21,500
G Wholesale and retail	822	140,300	130,500
H Transportation and storage	113	16,800	15,900
I Accommodation and food services	513	58,800	52,600
J Information and communication	143	32,000	30,400
K-L Financial , insurance and real estate	129	67,900	63,200
M Professional, scientific and technical	180	31,400	27,900
N-P Administrative and support services and education	237	55,100	47,000
Q Human health and social work	268	36,000	34,600
R-S Arts, entertainment, recreation and other social service activities	132	16,000	14,000
Public Sector			
O Public administration and defence	121	116,700	111,600
P Education	60	46,200	45,900
Q Human health and social work	38	37,200	37,200
Other Public Sector	32	42,800	42,400
All private sector enterprises	3,543	633,700	573,200
All public sector enterprises	251	242,800	237,100
Total: All enterprises	3,794	876,600	810,300

The matched sample of enterprises represents 67% of all sampled enterprises in EHECS in Quarter 3 2009. The number of employees covered by the matched sample represents approximately 51% of all employees in the State in each period.

Data used for the analysis

A description of the data collected and the concepts covered is contained in the background notes of the quarterly Earnings and Labour Costs release. For the purposes of this release the variables of importance were:

- ◆ **Gross earnings:** This is the sum of regular earnings, overtime and irregular earnings (bonuses). At the enterprise level this is the variable which is used as the 'Total wage bill' as covered in Chapter 1 of the report.
- ◆ **Weekly paid hours:** Total contracted hours plus overtime hours.
- ◆ **Employment:** Total number of employees as reported by the enterprise.

From the above three key variables the following additional variables were derived:

- ◆ **Percentage change in total wage bill:** This is the percentage change in the total wage bill of the reported enterprises. At any given level of aggregation the total wage bill is simply the sum of the wage bill of the relevant matched enterprises.
- ◆ **Percentage of enterprises reporting a reduction/increase in wage bill of greater than 2%:** For each enterprise an annual percentage change in the total wage bill was estimated. Enterprises were then grouped into 3 groups:
 - ◆ Reduction greater than 2 percent
 - ◆ Increase greater than 2 percent
 - ◆ Change of less than 2 percent

The choice of a 2 percent threshold for distinguishing enterprises who had an insignificant change in their wage bill was arbitrary, but was seen as necessary to create a greater focus on enterprises who had more substantial changes.

- ◆ **Average percentage change in wage bill by enterprise:** The average percentage change in the wage bill for each enterprise was averaged across all enterprises in a given sector to give an overall average percentage change. This is similar to the percentage change in total wage bill but is effectively an unweighted average which gives each enterprise equal weighting. Its value is that it allows some analysis of the relative distribution of the level of change reported by enterprises to be undertaken which could be somewhat masked in analysis of the total wage bill change which can be dominated by larger enterprises.
- ◆ **Average percentage reduction/increase of enterprises with wage bill reduction/increase of more than 2 percent:** These variable focus just on those enterprises who have reported a change of greater than 2 percent thereby giving a sense of the relative level of change being made by enterprises who are making changes.

Each of these derived variables are applied in a similar manner to employment, average weekly paid hours and average hourly earnings. However in the case of average weekly paid hours and average hourly earnings the data was standardised before analysis.

Standardisation of average weekly paid hours and average hourly earnings:

The standardisation for the two variables was undertaken in the same manner. For each enterprise the employment structure within the enterprise in the first period was used as the weighting to calculate standardised averages for both periods. The table below illustrates how standardised average hourly earnings are estimated.

Standardisation of average hourly earnings		
	Quarter 3 2008	Quarter 3 2009
A. Employment		
Managers, professionals and associated professionals	100	75
Clerical, sales and service employees	50	30
Production, transport, craft and other manual workers	20	10
B. Total Employment	170	115
C. Average hourly earnings (unadjusted)		
	€	€
Managers, professionals and associated professionals	33	28
Clerical, sales and service employees	17	16
Production, transport, craft and other manual workers	18	13
D. Employment quarter 3 2008 x average hourly earnings		
Managers, professionals and associated professionals	3300	2800
Clerical, sales and service employees	850	800
Production, transport, craft and other manual workers	360	260
E. Total of D	4510	3860
	€	€
Standardised average hourly earnings (figure E divided by figure B for quarter 3 2008)	26.53	22.71

The example shows how the employment levels for Quarter 3 2008 were used as weights to estimate standardised average hourly earnings for the enterprise for both Quarter 3 2008 and Quarter 3 2009. In this manner the effect of the change in composition of employment across the three occupational groups within the enterprise is removed. In further aggregation (for example to sectoral level) the same weighting is used. This thereby ensures that at sectoral level the relative importance of both occupational groups and enterprises themselves in terms of employment is held constant.

To truly correct for compositional change more detailed data on jobs and employees would be necessary however this form of standardisation allows some conclusions to be drawn on the high level effect of changes in composition based on available data.

Analysis of changes by component and by combinations of components:

The overall proportions of enterprises who changed individual components is the focus of tables 2 to 4.

Tables 5a to 5d show estimates of the percentage of enterprises who changed their wage bill by more than 2 percent and which combinations of components they changed in order to achieve this. There could also be instances of enterprises who reduced or increased their wage bill but did not significantly change any of the components measured or perhaps reduced some components and increased others. The focus of tables 5a to 5d is on the components which drove the overall change in the wage bill for the enterprise.

Weighting

No explicit weighting was used for the estimates in tables 1 and 2. This was taken as the approach as much of the analysis focuses on the proportion of matched enterprises who reported changes and in these cases weighting is unnecessary. To maintain consistency with this approach no explicit weighting was used in the derivation of total wage bill changes or other aggregated measures.

In the case of standardised average weekly paid hours and standardised average hourly earnings the employment within each enterprise was used as weighting to derive standardised averages at higher levels of aggregation.