

***Evaluating the Impact of a National Minimum Wage:  
Evidence from a New Survey of Firms.***

***Brian Nolan\* and Donal O'Neill\*\****

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***Abstract***

*In April 2000 the Irish government introduced a national minimum wage of £4.40 an hour. This paper uses data from a specially designed panel survey of firms to estimate the labour market effects of this change. Initial results show that employment growth among firms with low wage workers prior to the legislation was not significantly different to that for firms not affected by the legislation. However, this measure of the minimum wage bite is likely to overestimate the number of firms affected by the legislation. When we use a more refined measure of the minimum wage bite, which takes account of general wage growth in the economy we find the minimum wage may have had a statistically significantly negative effect on employment for the small number of firms most severely affected by the legislation.*

***1. Introduction.***

The last 10 years have seen a number of studies that reexamine the labour market effects of minimum wage legislation. Much of this renewed interest has been generated by recent findings which seem to indicate that the employment effects of minimum wages are small and in some cases may even be positive (Card and Krueger (1995), Dickens, Machin and Manning (1999)). This is in contrast to the predictions of competitive textbook models of the labour market, where minimum wages reduce employment due to higher wage costs (Hicks (1963), Welch (1976)). This paper provides additional empirical evidence on the labour market effects of minimum wage legislation by examining the consequences of the national minimum wage (NMW) introduced in Ireland in April 2000.

Prior to April 2000, minimum wages in Ireland were set by Joint Labour Committees (JLC). However the wages specified in these agreements were often quite low and covered less than ¼ of the workforce. Furthermore the level of enforcement was quite weak. On April 1<sup>st</sup> 2000, the Irish government introduced a national minimum wage of £4.40 per hour for all adult workers aged 18

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\* The Economic and Social Research Institute, 4 Burlington Road, Dublin.

\*\* Economics Dept., NUI Maynooth, Maynooth, Co. Kildare, Ireland (corresponding author: donal.oneill@may.ie).

years or older. The national minimum wage corresponded to approximately 2/3 the median wage in 1997 and *directly* affected about 15% of the workforce.

In this paper we evaluate the impact of the national minimum wage on wages, employment and non-employment outcomes using data collected from a new survey of firms carried out before and after the introduction of the NMW. The panel survey contains detailed information on the employment structures and work practices of firms, as well as subjective questions relating to the company's attitude towards minimum wage laws. Comparisons of employment growth of firms with and without minimum wage workers suggest that the introduction of the minimum wage had little effect on employment over this period. However, these simple comparisons fail to take into account the significant growth in wages that was occurring in Ireland during this period. For some firms, low wage workers would have experienced a wage increase even in the absence of the legislation (wage drift). It may not be appropriate to consider these workers as "minimum wage workers" even though their initial wages might indicate otherwise. When we adjust our analysis to take this into account we find that the minimum wage has had a significant negative effect on employment growth. This is an important finding and to our knowledge is the first attempt to account for wage drift in minimum wage analysis.

## ***2. The Irish Labour Market Prior to the minimum wage.***

In 1999 a Commission was set up to oversee the introduction of a national minimum wage in Ireland. The Minimum Wage Commission recommended that

"The initial rate for the national minimum wage should be set at around two thirds of median earnings and should take into account employment, overall economic conditions and competitiveness" noting that "in today's terms, two thirds of median earnings would represent £4.40 per hour" (p. 59-60).

A separate rate for employees under 18 years of age, set at 70% of the full rate, was also recommended.

This section of the paper uses household survey data taken from the 1997 Living in Ireland Survey to document the characteristics of those affected by the legislation.<sup>1</sup> The 1997 Living in Ireland Survey is the third wave of the Irish element of the European Community Household Panel being carried out for Eurostat by the ESRI. The sample contained information on approximately 2700 individual employees who responded to questions about their earnings and hours of work, occupation,

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<sup>1</sup> In a later section we will supplement these figures with data from a survey of firms.

labour market experience, education, and a wide range of other individual and job characteristics. (A comprehensive description of the survey is in Callan *et al*, 1996).<sup>2</sup>

The survey indicates that 22% of employees in the 1997 sample were below £4.40 gross earnings per hour if aged 18 or over, or below £3.08 if aged under 18. To examine the numbers affected when the legislation was introduced in 2000 we can adopt a procedure similar to that employed in Nolan (1998) and project employment estimates forward from 1997 to 2000. Given assumptions about wage changes throughout the distribution (see Nolan and McCormick (1999)), the 1997 Living in Ireland survey suggests that approximately 13-15% of all employees would have been under £4.40 (or £3.08 if under 18) in 2000.

Approximately 55% of those estimated to be below the minimum wage from the 1997 survey are women. Since women make up a minority of all employees, this means of course that they face a significantly higher risk of being low paid: 17% of women employees compared with 11% of men in the 1997 survey were below the minimum. Part-time employees are also over-represented among those below the minimum. Those working less than 30 hours per week make up one-fifth of all employees but about one-third of those below the hourly minimum wage.

In terms of age, Table 1 shows the percentage below the minimum wage in various age categories and the composition of those below the minimum. More than half those aged under 21 are below the minimum. (Only a very small proportion of employees in the sample are aged under 18, the age cut-off below which the lower rate for the minimum wage recommended by the Commission applies). The percentage below the minimum wage is still relatively high for the 21-24 age group, but then falls sharply. There is then little systematic variation across the other age groups, with about 10% falling below the threshold. About one-quarter of those below the minimum are aged under 21.

The profile of those below the minimum wage in terms of occupational status is shown Table 2. As in Nolan (1998) we distinguish the nine broad occupational groupings used by the CSO in the Labour Force Survey. Table 2 shows that the numbers below the minimum wage are highest for agricultural workers, those in commerce, insurance and finance, and service workers. Labourers and unskilled workers have a much lower but still above average probability of being below the minimum. “Producers, makers and repairers” face about the average risk of being low paid, while clerical workers and to a lesser extent transport and communications workers have a below average risk. Professional and technical workers and “others” (which includes administrative, executive and

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<sup>2</sup> In an earlier paper Nolan (1998) used the 1994 Living in Ireland Survey to examine low pay and poverty in Ireland. There, he argued that two-thirds of median earnings would have risen from £4 per hour in 1994 to about £4.40 in 1997. This is the source the £4.40 figure quoted as two-thirds of the median by the Minimum Wage Commission and seems to have formed the basis for the rate chosen for the national minimum wage.

managerial workers) face a risk well below the average. About half of all those below the minimum wage are either commerce insurance and finance workers, or service workers – two categories holding less than one-quarter of all employees.

As well as the numbers affected, the immediate impact of the minimum wage on the wage bill is a crucial concern. Using our earlier assumptions about median and lower earnings growth between the 1997 survey and April 2000 we estimate that the minimum wage will have increased gross earnings by approximately 1.6% of total gross earnings in the sample. Although this is a very crude estimate it does nevertheless give an indication of the likely effects of the minimum wage on the wage-bill. It is not surprising that there is significant sectoral variation in the estimated wage bill effects. Table 3 shows the estimated percentage of employees falling below that minimum in each sector. Once again there is great variation, from 58% in agriculture, forestry and fishing, 44% in personal services and 28% in retailing down to virtually no-one in public administration and defense. Agriculture must be regarded as a rather special case, because gross earnings often represent only a proportion of total remuneration because of other benefits provided. These are taken into account in current JLC regulations for that sector and will be in the minimum wage, so the apparent very high numbers affected here substantially over-state the effect in that sector.

Table 4 presents the estimated immediate wage bill impact of the minimum wage in 2000 for the different sectors, from our projection of £4.40 (£3.08) with no spill-over. The impact of the minimum wage with no spill-over will vary across sectors not only because of the different proportion of the workforce affected, but also because of differences in the extent to which those affected fall below the minimum. The results show that the increase in earnings associated with the minimum wage would represent close to 4% of the wage bill in retailing and professional services sectors, and over 8% in personal services. In production industries, on the other hand, it would be about 1% of the wage bill.

### ***3. A New Survey of Firms.***

To examine the consequences of these changes on labour market outcomes we conducted a new survey of Irish firms. The initial survey was based on a random stratified sample of businesses in Ireland. During the last quarter of 1998 2,330 enterprises were asked to complete a questionnaire designed to collect details on current employment size, employment structures by hourly pay rates as well as age, gender and full or part-time status; the extent of vacancies, hirings, and departures from the enterprise in the 12 months preceding the survey; and direct and indirect questions to assess attitudes and perceptions among businesses to the introduction of minimum wage legislation. 1062

questionnaires were successfully completed, corresponding to a valid response rate of 46%. These data describe the work practices and employment structure of firms 12-14 months prior to the introduction of the minimum wage.

In the last quarter of 2000 we conducted a follow up survey of these establishments in order to examine firm level responses to the minimum wage.<sup>3</sup> Attempts were made to contact each of the firms in the original survey. As well as these firms a large number of additional firms were also surveyed. In total, 1045 firms responded to the second survey, of which 587 could be matched to the earlier survey.<sup>4</sup> Since the national minimum wage was introduced in April 2000, the data from the second survey reflects employment structures approximately 6 months after the minimum wage legislation was enacted. The matched firms are used to assess the impact of the minimum wage on labour market variables.

There are a number of potential problems associated with using panel surveys of this nature to analyse employment responses to minimum wages legislation. We have tried to address these issues in our survey design. It has been noted by a number of researchers (see for example Brown 1999 page 2132) that before-and-after comparisons may be affected by the *timing* of these comparisons. It is quite common for potential minimum wage legislation to be in the public domain for sometime prior to being passed. If this is the case then some firms, anticipating its introduction, may begin to make gradual changes to their employment structure even before the legislation is enacted. Studies that use employment levels before the minimum wage law is passed as the benchmark level of employment may therefore have already missed some of the employment response. To allow for this we included a series of questions at the end of the first survey examining the employers' awareness of the minimum wage and whether they had already taken steps to prepare for a situation where a minimum wage operates. Although 80% of firms reported having heard of the proposed minimum wage, less than half of those who had heard of it knew at what rate it was to be introduced.<sup>5</sup> Furthermore only 29% of these firms knew what year the legislation was due to be enacted (20% answered the wrong year and the remaining 51% said they did not know). Finally when asked if their company had taken any steps to prepare for the minimum wage only 13% of all

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<sup>3</sup> A copy of the questionnaire used for the follow up survey is given in the appendix.

<sup>4</sup> Thus far we have only carried out a preliminary analysis of the attrition rate between surveys. There is no significant relationship between the presence of low wage workers in sweep 1 and the likelihood of being present in both waves. However, it does seem as though Irish firms and firms for which profits had increased were more likely to respond to the second survey. This needs to be borne in mind when interpreting our findings and is something that we will examine in more detail in the future.

<sup>5</sup> In particular only 48% of those firms who had heard of the minimum wage indicated a rate in the range of £4.30-£4.50. Only 10.43% correctly identified £4.40 as the national minimum wage rate.

firms said they had.<sup>6</sup> It is our view, therefore, that the first wave data provide an appropriate benchmark for most of the firms in our survey.

It has also been suggested that measurement error may distort the results from surveys of this kind.<sup>7</sup> There are a number of reasons as to why we think this is less likely to be an issue for our data. Firstly, all our questionnaires were completed on a personally administered basis that involved an interviewer paying a visit to each respondent and completing the instrument on site. Secondly, while the employment data in our survey come from a question asking "... the total number of persons currently engaged in your company, on a full-time and part-time basis", the respondent was later asked to classify the staff on the basis of pay, age, gender and occupation. At each stage the interviewer was instructed to check that the totals from these classifications matched the response to the initial employment question. Where inconsistencies became apparent at a later stage these were resolved by phone follow-up with the respondent. These consistency checks increase the reliability of our employment data and reduce the likelihood of measurement error. Finally, we attempted to ensure that the same individual filled in the questionnaire in the both waves of the survey. We were successful in doing so for approximately 63% of the firms, which should insure comparability across waves.<sup>8</sup>

To examine the issue of measurement further we follow Neumark and Wascher (2000). They argue that classical measurement error that is uncorrelated over time should manifest itself through a relatively low correlation in employment levels within firms across the two waves of the data. They report a correlation of .52 using survey data compared to a correlation of .81 using payroll data. Figure 1, shows a plot of wave 2 vs. wave 1 employment for the matched firms in our sample. The estimated correlation is .92, which is considerably higher than either of the samples considered by Neumark and Wascher, and not what one would expect if classical measurement error was a serious issue.

#### ***4. Employment Effects of the National Minimum Wage.***

The first wave of our survey shows that at the end of 1998 approximately 50% of the firms sampled had a worker earning less than £4.50. These workers constituted 21% of all private-sector

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<sup>6</sup> Furthermore many of the firms who responded positively to this question simply indicated that they already pay over the minimum.

<sup>7</sup> For example, Neumark and Wascher (2000) suggest that the employment data from Card and Krueger's survey of fast-food establishments may contain significant measurement error. However see Card and Krueger (2000) for a reply.

<sup>8</sup> We should also point out that both surveys looked at employment practices in Ireland in general. Firms were not asked directly about the minimum wage until the final page of the first survey (page 11). Combining this with the fact that the survey was personally administered would lead us to believe that strategic responses are unlikely to be important in our surveys.

employees in the firm survey.<sup>9</sup> A more detailed breakdown of the incidence of low pay reveals that approximately 13% of private sector employees were being paid between £4.00 and £4.50 an hour, approximately 8.5% received an hourly wage less than £3.99. By the end of 2000 only 24% of firms had at least one worker receiving £4.50 or less and these workers constituted only 4% of the employees in the firm survey. Only approximately 1% of all employees earned less than £3.99.

In the second wave we asked firms if they had “to increase the hourly rates of higher grade staff to maintain pay differentials ?,”. 18% of firms acknowledged some spillover effects. The extent of spillover among these firms is quite large. Within firms who reported increasing the wages of higher grade staff, on average 50% of the high wage workers were said to have had their wages increased in order to maintain pay differentials.

To examine the employment effects of these wage changes we relate employment growth over this period to measures capturing the effective bite of the minimum wage. Although, Ireland was experiencing rapid growth during this period there was a lot of variation across firms. On average employment in these firms increased by approximately 18% over this period.<sup>10</sup> However the median increase in employment was only 3%. 30% of the firms experienced a *decline* in employment and approximately 18% of firms had no change in their number of employees.

To examine the link between the minimum wage legislation and the employment changes we estimate the following equation:

$$\Delta \ln(N_{it}) = \beta_0 + \beta_1 \text{MinW}_{I,t-1} + \beta_2 X_{it-1} + e_{it} \quad (1)$$

where  $N$  measures employment,  $\text{MinW}$  measures the effective bite of the minimum wage and  $X$  controls for observable characteristics of the firms. To estimate this equation we need to construct a measure of  $\text{MinW}$ . Given the design of our survey a number of possibilities are available: the first is a simple indicator denoting whether the firm employed workers below the NMW prior to its introduction (we label this  $\text{Mwage99}$ ); the second measures the proportion of the firm’s labour force that was below the NMW prior to its introduction (we denote this by  $\text{PropMw99}$ ). The results of estimating equation (1) using both these measures are given in the first two columns of table 5.

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<sup>9</sup> This cannot be compared directly with the estimates presented earlier from the household surveys because the latter a) related to £4.40, b) used a lower cut-off for those aged under 18, c) projected forward to 2000, and d) included public-sector workers for whom the incidence of low pay is very low. The household survey can however be used to produce an estimate of the number of private sector employees under £4.50 at the date of the firm survey, in the manner described earlier but projecting forward to end-1998 rather than 2000 and confining attention to the private sector. This household survey-based estimate turns out to be about 24%, indicating a high level of agreement between the two sources

Neither measures of the minimum wage bite are significantly related to employment growth. This is consistent with the Card and Krueger (1995) and Dickens, Machin and Manning (1999) findings.

One problem with this approach however, is that much of the identification is achieved by comparing firms with minimum wage workers to firms without these workers. However it is likely that these firms may have experienced different employment patterns even without the legislation. Failure to control for these differences could distort any minimum wage impact. Our surveys allow us to identify some characteristics of the firms that may be useful control variables. Among the control variables available are whether the firms was Irish or foreign owned (Irish), whether the firm exported or not (Export), an indicator of the profitability of the firm in the year prior to the minimum wage (Profit), an indicator variable denoting whether or not at least 50% of the firm's non-managerial employees were in a Trade Union (Union), as well as the percentage of the company's total operating costs that are accounted for by their total wage bill (Wage Bill). We also included the firms initial employment level (TotEmp99) as a regressor. Summary statistics for these variables are given in the Appendix.<sup>11</sup>

The results from this specification are given in columns (3) and (4) of table 5. Looking at the results we see that more profitable firms experienced faster employment growth, companies for which labour constituted a large fraction of the wage bill had lower employment growth, as did Irish owned firms. None of the other regressors had t-values greater than 1. However from our perspective the important coefficients are those on the minimum wage variable. Including these controls had little effect on the minimum wage estimates. Irrespective of the measure used the minimum wage effect is still small and insignificant.

An alternative way of achieving identification is to focus only on firms with a minimum wage worker and to use variations in the proportion of the labour force below the minimum wage to identify the effect. While this reduces the number of observations available, it should also reduce the unobserved heterogeneity in the sample. The results from this exercise are given in Table 6. Restricting the sample just to minimum wage firms makes little difference to our results. Again it appears as though the minimum wage has had little effect on employment growth for this sample of firms.

While the results so far suggest that the minimum wage had little effect on employment levels we need to be careful in interpreting these findings. We noted in section 2 that between 15-20% of Irish employees were receiving less than the minimum wage in the year prior to the

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<sup>10</sup> Total non-agricultural employment in Ireland over this same period increased from 1.4m to 1.58m, an increase of approximately 13% (QNHS Report February 2001).



introduction of the NMW. In the analysis so far this group has formed the basis of our treatment group. However, a criticism that has often been levelled at these types of studies is their inability to distinguish between potential and actual bite of the minimum wage (Deere, Murphy and Welch (1996)). It is reasonable to assume, that some of the workers receiving wages below the minimum wage in 1998 would have received a wage increase by 2000 in any case. It would not be surprising to find that the legislation had little effect on these workers even though they are recorded in our data as minimum wage workers.

This wage drift is likely to be quite a serious issue in the Irish context. While restrained wage growth was a notable feature of the Irish labour market for much of the 1990s, the labour market tightened significantly in the late 1990s. Employment grew by over 6 per cent in 1999 and the unemployment rate fell below 5 per cent at the end of 1999. This growth continued in 2000 with both GNP and GDP growing by approximately 10% in real terms in 2000.<sup>12</sup> Total employment increased significantly, with an additional 75,000 people in work in 2000. The labour force continued to grow very rapidly by international standards, rising for example by 5 per cent in the year up to quarter one 2000, reflecting rising labour force participation rates, the natural increase in those of working age and net immigration. An indicator of potential labour supply is provided by the number of unemployed persons and discouraged workers as a percentage of the labour force, inclusive of discouraged workers<sup>13</sup>. By late 1997, approximately 11 per cent of the labour force consisted of unemployed and discouraged workers, whereas by quarter one of 2000, this number had halved to just 5.4 per cent. Those with a loose attachment to the labour market had thus increasingly been drawn into the labour force.

The rise in employment was accompanied by a marked decline in unemployment and long-term unemployment. The numbers unemployed fell from 125,000 in 1998 to 95,000 persons in 1999, and were down to 73,000 in 2000. The unemployment rate continued to fall, reaching 5.6 in 1999, 4.7 per cent in the first quarter of 2000, and 4.1 for 2000 on average. The long-term unemployment rate more than halved since the beginning of 1998, to reach just 1.7 per cent by the first quarter of 2000. This level of unemployment clearly places workers in a strong wage bargaining position, as employers have to bid up wage rates in order to retain and attract labour.

Evidence on earnings trends across a broad range of occupations and sectors shows that wage inflation began to accelerate significantly from 1997 onwards. Data on industrial earnings indicate

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<sup>11</sup> The summary statistics are provided for both the full first wave sample and the restricted matched sample. The results show that on average there is very little difference in the characteristics of the firms in these two samples.

<sup>12</sup> Estimates for 2000 are from the ESRI *Quarterly Economic Commentary*, March 2001.

<sup>13</sup> Discouraged workers are defined by the CSO as those “who are not looking for work as they believe they are not qualified or that no work is available” (see QNHS, June 2000, page 14).

that average hourly earnings increased by 5.4 per cent over that period. In the services sector average weekly earnings to September 1999 were up 4.7 per cent in business services and 5.1 per cent in distribution, while in the public sector the rise was 3.3 per cent. In the banking, insurance and building societies sector the annual rise in average weekly earnings in 1999 was 2.1 per cent. The average weekly earnings in the construction industry were up 13.7 per cent to September 1999.

Overall, then, from the period when the initial survey was undertaken up to date of the follow-up survey the Irish economy performed very strongly. Over the three years from 1997 to 2000 average earnings in the non-agricultural sector rose by around 5.5 per cent a year. Given these circumstances it seems reasonable that the 50% of firms identified as having a minimum wage worker in the 1998 survey overestimates the actual number of firms affected by the legislation.

To account for the natural growth in wages we asked firms affected by the minimum wage “.....if they would have had to increase wages anyway up to the level set out in the minimum wage [legislation]?”. Of the second wave firms who said that they had workers below the minimum wage when it was introduced, 84% of them said that they would have increased these wages in any case. This is in keeping with the rapid economy wide increases in wages outlined in the earlier paragraph. To allow for this in our analysis we create a new minimum wage variable which takes the value 1 only if the firm had minimum wage workers *and* would not have increased wages were it not for the minimum wage (Mwage993). The results of redefining the minimum wage variable are striking. In contrast to the 50% of firms who had minimum wage workers in the first wave, only 23% of firms retrospectively recorded having minimum wage workers by the time the law was introduced. As noted above 84% of these indicated that they would have raised wages even without the minimum wage. Using these criteria only 4% of our firms were actually directly affected by the minimum wage legislation.

We re-estimated equation (1) using the redefined measure of the minimum wage bite. The results from this analysis are presented in Table 7. None of the estimates on the control variables change much as a result of redefining the minimum wage variable. It is still the case that profitable firms, foreign owned companies and firms for which wage costs are less important appear to have faster employment growth. However, there is a striking change in the estimated minimum wage effect. Whereas in previous specifications the minimum wage variable was small and insignificant, it is now statistically significant and negative. Firms that had workers subjected to the minimum wage legislation *and who would not have increased wages were it not for the legislation* have significantly smaller increases in employment than other firms. This result is in keeping with the predictions of traditional competitive model.

Using this self-reported measure of minimum wage bite may not be valid if there is a relationship between employment changes and a firm's willingness to increase wages irrespective of any minimum wage legislation. Perhaps what we are picking up is simply the fact that firms that perform poorly are most likely to be low wage and also constrained when it comes to increasing wages. The estimated minimum wage effect in this case may simply measure unobserved characteristics that are associated with both poor employment growth and low wages. A traditional approach to correcting for this type of problem would be to instrument the minimum wage variable. However it is difficult to construct satisfactory instruments in this example – that is a variable that is correlated with the self-reported minimum wage bite but uncorrelated with the unobserved measures affecting a firm's performance. We therefore seek an alternative approach.

We begin by looking at the affect of the minimum wage legislation on costs. The minimum wage variable used in these regressions is intended to identify the firms most affected by the legislation. In both our surveys we asked firms to report the percentage of the company's total operating costs accounted for by wages. We might expect that that firms most affected by the legislation should see the largest increases in their wage bill. This seems to be the case. Firms without a minimum wage worker in 1998 report that the proportion of total costs accounted for by labour *fell* by approximately 1 percentage point. For firms with at least one minimum wage worker in 1998 the proportion of total costs accounted for by labour *increased* by 2.5 percentage points. Finally firms who reported having a minimum wage worker *and* who stated that they would not have increased wages in the absence of the legislation saw the proportion of costs accounted for labour increase by over 7 percentage points. It seems therefore that the redefined measure of minimum wage bite is capturing firms for whom the wage bill increased substantially relative to other costs at the time the NMW was introduced.

One could still argue that this reflects unobserved inefficiencies within the firm that could be correlated with employment losses. If our redefined minimum wage variable is simply a proxy for firms with poor “employment-creating characteristics” then we would expect to see these firms perform poorly even in the absence of the minimum wage legislation. Since the employment records in our survey are limited to one observation before and after the minimum wage legislation we cannot calculate actual employment changes for the firms in other periods. However in the first wave of our survey we did ask firms to record “if compared to the same period in 1997 their labour force had increased, stayed the same or fallen”. This provides us with a self-reported measure of employment changes from 1997-1998, two years prior to the minimum wage legislation. If the self-reported minimum wage variable is proxying for firms with unfavourable unobserved characteristics then we should expect to see these firms also experiencing relative employment falls in this period.

To see if this is so we constructed a binary variable taking the value 1 if employment fell between 1997 and 1998 and zero otherwise. We then estimated the relationship between this binary measure of employment change and the self-reported minimum wage bite from the second wave of the survey. The results are presented in column 1 of table 8. While the self-reported minimum wage variable does increase the probability of observing employment declines from 1997-1998 it is not statistically significant.

One could argue that using the binary measure of employment changes reduces the variation in the employment variable and it is this that is responsible for the insignificant effect in the earlier period. To check this we created a similar binary indicator for the 1998-2000 employment changes using the survey data and re-estimated the minimum wage equation using this as the dependent variable. The results are given in column 2 of Table 8. The results clearly show that even when a binary indicator of employment decline is used to measure employment changes before and after the minimum wage legislation, the self-reported minimum wage bite significantly increases the probability of observing an employment decline. Furthermore the estimated coefficient is over twice as large as that estimated for the period without the legislation. Thus, although the redefined minimum wage variable has a negative effect on employment changes, even in years prior to the legislation, the fact that it is statistically insignificant and much smaller in magnitude than the later effects suggests that it is more than just a proxy for unobserved firm-level characteristics.

So far we have identified the self-reported minimum wage effect by comparing the employment growth of these firms with that of firms who were already above the minimum wage or who said they would have raised their workers wages in any case. To reduce the heterogeneity in this sample and to focus on low-paying firms we repeated the above analysis restricting our sample only to firms who would not have increased wages without the legislation. We use variations in the proportion of the work force that were low paid to identify the minimum wage effect. The results are presented in Table 9. Unlike earlier regressions, the proportion affected by the minimum wage now has a significant negative effect on employment growth. This tends to support the view that the effects presented in Tables 7 and 8 reflect the impact of the minimum wage legislation rather than differences in unobserved heterogeneity. However the results in Table 9 are based on very small samples and this needs to be borne in mind when interpreting them.

##### ***5. The Impact of minimum wages on other outcomes.***

While the impact of minimum wages on employment changes has attracted most attention in the literature there has been some studies looking at the minimum wages on other non-wage

characteristics.<sup>14</sup> The design of our survey also allows us to say something about the impact of the legislation on non-wage outcomes. At the end of the second wave questionnaire we asked firms to indicate the impact the minimum wage had on several areas of their company. These included reductions in hours worked (Hours), recruitment of younger less experienced staff (Exper), increase in output prices (Prices), Increased use of Technology/machinery (Machine), improved quality of product (Quality output), Staff Morale (Morale), Productivity (Productivity), Subcontracting (Subcontract), Staff Turnover (Turnover), Industrial Relations (IR). In each case firms were asked if it has a significant effect, slight effect or no effect.<sup>15</sup> To estimate the effect of the minimum wage legislation we relate the responses to these questions with the minimum wage variables defined earlier.<sup>16</sup> The results are given in Table 10.

In interpreting these results we must recall that the marginal effects of the regressors on the probabilities of each cell are not equal to these coefficients. However where a coefficient is positive we can be sure the regressor increases the probability of a significant effect and decreases the probability of no effect.<sup>17</sup> We see from these results that firms most affected by the minimum wage are more likely to have reduced hours, increased output prices and substituted capital for labour. However the effects are not all negative. These firms are also more likely to report that the quality of their product had improved, that productivity had increased and that morale was now significantly higher. However these improvements seem to have had little effect on industrial relations. These results indicate that firms reacted to the minimum wage in many ways and that the employment effects identified in the previous section are just part of a larger adjustment process. A somewhat surprising result is that firms most affected by the minimum wage are more likely to report an increase in staff turnover as a result of the legislation. This is in contrast to much of the monopsony literature that cites *reductions* in turnover as a potentially large positive side-effect of minimum wages. However in interpreting this result it is important that firms focused on the minimum wage effect on turnover. If not this result may reflect the fact that turnover has increased substantially across the board in Ireland over the last 5 years and possibly even more so in low wage firms.

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<sup>14</sup> Holtzer et al (1988) look at minimum wages and vacancies, Card and Krueger (1995) look a number of issues including fringe benefits, output prices and profits, Neumark and Wascher (1998) look at training and Aaronson (2001) looks at the price pass-through effects of minimum wages. Walsh (2001) extends recent monopsony models of employment to situations where jobs are characterised by two components (a wage and non-wage component). He shows that firms' respond to minimum wages by reducing the non-wage component of the job, which in turn may reduce employment even when the labour supply is upward sloping in wages.

<sup>15</sup> For the last 4 categories the options were significant decrease, slight decrease, no effect, slight increase, significant increase.

<sup>16</sup> Due to the nature of the dependent variable we used an ordered probit for this part of the analysis.

<sup>17</sup> The impact on intermediate categories can not be inferred from the sign of the coefficients (Greene 2000).

## 6. Conclusion.

In this paper we have looked at the effects of the national minimum wage introduced in Ireland in April 2000. To do this we use a panel survey of firms contacted before and after the minimum wage was introduced in order to obtain information on their work practices and employment structure. Initial results show that employment growth among firms with low wage workers prior to the legislation was not significantly different to that for firms not affected by the legislation. This is consistent with recent studies that have argued that minimum wages seem to have no adverse effects on employment. However, it has been recognised for some time now that counts of workers below the minimum wage (even when adjusted for distance from the minimum wage) may be an unsatisfactory measure of the bite of the minimum wage. Some workers, initially below the minimum wage are likely to have their wages increased over time irrespective of the legislation. It seems incorrect to include these workers in the treatment group when looking at the effects of the legislation. This is likely to be a particular problem in Ireland where wages have been growing significantly in the years prior to the legislation. To account for this we redefined the minimum wage variable to include only firms who had low wage workers *and who state that they would not have increased wages by as much were it not for the minimum wage legislation*. When we used this redefined measure of the minimum wage bite we find the significant negative employment effect predicted by the competitive model of the labour market. Further analysis suggest that this result is not driven by unobserved firm-level characteristics associated with employment growth and self-reported wage restraint. It therefore appears that employment growth was reduced within the small numbers of firms most severely affected by the minimum wage legislation. This is an important finding and as far as we are aware is the first attempt to tackle the problem of wage drift in the minimum wage literature.

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Figure 1. Employment Correlation within Firms across the two waves of the Survey.

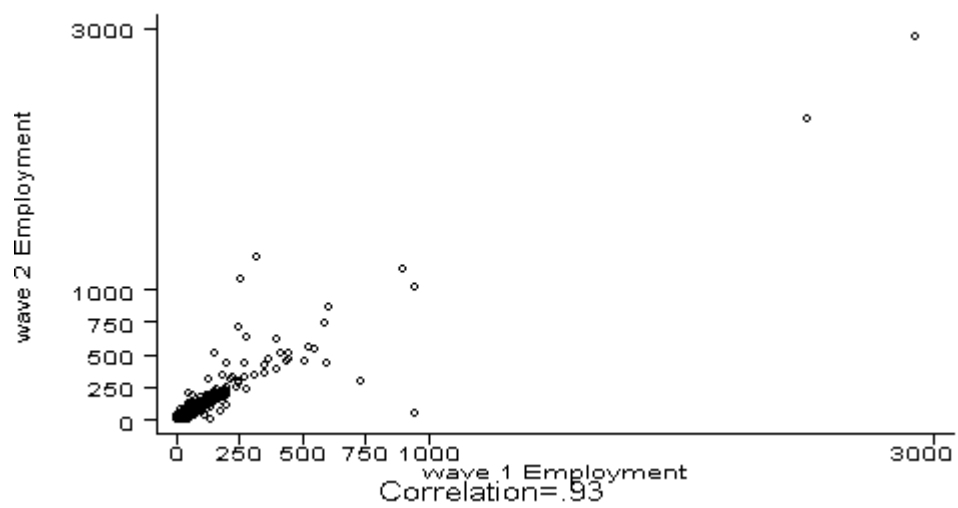


Table 1: *Percentage Affected by Minimum Wage by Age, Estimated from 1997 Living in Ireland Survey*

Age Category	% below Minimum Wage	% of all those below Minimum Wage	% of all employees
under 21	52.5	21.1	5.5
21 under 25	24.0	22.0	12.4
25 under 35	9.8	23.3	32.4
35 under 45	10.3	18.6	24.5
45 under 55	7.7	11.5	20.3
55 and over	9.1	3.4	5.0
All	13.5	100.0	100.0

Table 2. *Numbers Affected by the Minimum Wage by Occupation, Estimated from 1997 Living in Ireland Survey*

	% below Minimum Wage	% of all those below Minimum Wage	% of all employees
Agricultural workers	56.0	8.9	2.1
Producers, makers and repairers	12.6	8.9	20.6
Labourers and unskilled workers	23.8	5.5	3.2
Transport and communications workers	9.2	5.1	7.5
Clerical workers	6.6	7.3	14.9
Commerce, insurance and finance workers	28.2	21.5	10.3
Service workers	29.1	28.1	13.1
Professional and technical workers	2.6	4.0	20.7
Others	1.0	0.6	7.6
All	13.5	100.0	100.0

Table 3: *Numbers Affected by Minimum Wage in 2000 by Broad Industrial Sector, Estimated from 1997 Living in Ireland Survey*

	% in sector below £4.40 (£3.08) in 2000
Agriculture, forestry and fishing	58.3
Building and construction	14.3
Other production industries	10.1
Wholesale	12.4
Retail	27.8
insurance, finance etc.	1.0
transport, etc.	4.0
professional services	10.1
Teaching	6.8
Health	11.1
public administration and defense	1.1
personal services	43.5
Others	17.0
All	13.6

Table 4: *The Immediate Wage Bill Impact of the Minimum Wage in 2000 by Broad Industrial Sector, Estimated from 1997 Living in Ireland Survey*

	Wage Bill Impact of MW of £4.40 (£3.08) in 2000
Agriculture, forestry and fishing	25.1
Building and construction	1.4
Other production industries	1.1
Wholesale	2.0
Retail	3.7
insurance, finance etc.	0.1
transport, etc.	0.4
professional services	3.7
Teaching	0.7
Health	0.9
public administration and defense	0.1
personal services	8.4
Others	1.8
All	1.6

Table 5. *The impact of Minimum wages on Employment*(Dependent Variable – percentage change in employment form 1998-2000  
Standard Errors in parentheses)

Explanatory Variable	(1)	(2)	(3)	(4)
Constant	.15 (.04)	.14 (.03)	.27 (.12)	.26 (.13)
Mwage99	.007 (.05)		.01 (.05)	
PropMw99		.0006 (.0009)		.0006 (.0009)
Irish			-.13 (.09)	-.13 (.09)
Export			-.04 (.06)	-.03 (.06)
Profit			.08 (.06)	.08 (.06)
Union			.01 (.07)	.02 (.07)
WageBill			-.001 (.001)	-.002* (.001)
Totemp99			-.0001 (.0001)	-.0001 (.0001)
R <sup>2</sup>	.000	.001	.016	.016
Sample Size	440	440	440	440

Table 6 *The impact of Minimum wages on Employment – Minimum wage Firms only*

(Dependent Variable – percentage change in employment form 1998-2000  
Standard Errors in parentheses)

Explanatory Variable	(1)	(2)
Constant	.12 (.06)	.26 (.19)
PropMw99	.0009 (.0012)	.0011 (.0012)
Irish		-.20 (.15)
Export		.01 (.08)
Profit		.14* (.09)
Union		.10 (.10)
WageBill		-.002 (.002)
Totemp99		-.0006* (.0003)
R <sup>2</sup>	.003	.03
Sample Size	227	227

**Table 7** *The impact of Minimum wages on Employment using self-reported measure of minimum wage bite*  
 (Dependent Variable – percentage change in employment form 1998-2000  
 Standard Errors in parentheses)

Explanatory Variable	(1)	(2)
Constant	.17 (.03)	.26 (.13)
Mwage993	-.31* (.14)	-.30* (.14)
Irish		-.12 (.09)
Export		-.04 (.06)
Profit		.08 (.06)
Union		.02 (.07)
WageBill		-.002* (.001)
Totemp99		-.0001 (.0001)
R <sup>2</sup>	.01	.024
Sample Size	434	434

**Table 8** *The Relationship between self-reported minimum wage bite and employment changes from 1997-1998 and 1998-2000.*  
 (Standard Errors in parentheses)

Explanatory Variable	(1) 1997-1998	(2) 1998-2000
Constant	-1.38 (.08)	-.55 (.05)
Mwage993	.31 (.35)	.73* (.28)
Sample Size	575	575

Table 9. *The impact of Minimum wages on Employment using self-reported measure of minimum wage bite – Affected Firms only*

(Dependent Variable – percentage change in employment form 1998-2000  
Standard Errors in parentheses)

Explanatory Variable	(1)	(2)
Constant	-.01 (.08)	.55 (.69)
PropMw99	-.0034* (.0015)	-.0028 (.0017)
Irish		-.67 (.62)
Export		.01 (.13)
Profit		-.24 (.15)
Union		-.01 (.16)
WageBill		.007* (.003)
Totemp99		-.0004 (.0006)
R <sup>2</sup>	.38	.66
Sample Size	16	16

Table 10: *Impact of Minimum Wage on Non-Wage outcomes using Ordered Probits.*  
 (Standard Errors in parentheses).

Dependent Variable	Minimum Wage Effect
Reduced Hours	.79*(.22)
Exper	.05 (.27)
Prices	.95* (.19)
Machines	.41* (.23)
Quality Output	.40* (.20)
Morale	.69* (.19)
Productivity	.61* (.22)
Subcontract	.81* (.24)
Turnover	.71* (.22)
IR	.29 (.28)



Appendix  
 Table A1: Summary Statistics  
 (MS – Matched Sample, FS – Full Sample)

Variable Name	Mean (MS)	Standard Deviation (MS)	Mean (FS)	Standard Deviation (FS)
Deltaemp	.18	.65	NA	NA
Irish	.89	.31	.88	.32
Export	.34	.47	.32	.47
Profit	.77	.43	.73	.44
Union	.23	.42	.21	.41
Wage Bill	.35	.19	.35	.19
Totemp99	69	192	67	179

***National Survey of Employment Practices in Ireland,  
2000/2001***

**STRICTLY CONFIDENTIAL**

ID.

Int. Name \_\_\_\_\_ Int. No.    Date \_\_\_\_\_

The Economic and Social Research Institute has been commissioned by the Department of Enterprise, Trade and Employment to carry out a survey into employment practices in Ireland.

The survey is based on a nationally representative sample of all businesses throughout the country. Your firm was selected, on a random statistical basis, for participation in the survey.

The questionnaire will take about 30 minutes to complete. The information collected will be treated in the strictest confidence. The report which we will prepare will contain only aggregate details, percentages etc. It will not be possible to identify individual firms or their responses from this report.

The results will be used to inform policy makers on employment practices in Ireland today. It is *your* experience and *your* views on such issues that we want to measure in this survey.

Your assistance in completing the questionnaire would be greatly appreciated.

Q.1 Name of Company \_\_\_\_\_

Q.2 Name of person completing the questionnaire \_\_\_\_\_

Q.3 What is your own position within the company? \_\_\_\_\_

Q.4 Please describe as fully as possible the nature of your business \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Q.5 Which of the following best describes your company? [Tick one only].**

- Irish owned private company ..... <sub>1</sub>    Semi-state ..... <sub>5</sub>  
 Irish owned public company ..... <sub>2</sub>    Co-Operative ..... <sub>6</sub>  
 Subsidiary of overseas company ..... <sub>3</sub>    Other (please specify) ..... <sub>7</sub>  
 International franchise in Ireland ..... <sub>4</sub>

**Q.6 How many branches or outlets does your company currently have throughout the Republic of Ireland?**

\_\_\_\_\_ branches/outlets.

**Q.7 What is the total number of persons currently engaged in your company, on a full-time and part-time basis, in all the company's branches throughout the Republic of Ireland? By part-time we mean usually working less than 30 hours per week. Please include proprietors, owners and managers.**

\_\_\_\_\_ full-time      \_\_\_\_\_ part-time

**Q.8a Does your firm export?**      Yes.... <sub>1</sub> → Go to Q.8b      No.... <sub>2</sub> → Go to Q.9

**Q.8b Approximately, what percentage of your output goes to (a) the domestic market (b) the UK market and (c) other export markets?**

(a) Domestic Market \_\_\_\_\_%      (b) UK Market \_\_\_\_\_%      (c) Other Export Markets \_\_\_\_\_%  
 [Int. (a) + (b) + (c) must sum to 100%]

**Q.9 Has your volume of business increased, stayed the same or decreased in the last 2 years?**

Increased ..... <sub>1</sub>      Stayed the same ..... <sub>2</sub>      Decreased..... <sub>3</sub>

**Q.10 Compared with this time two years ago, is your workforce today**

Larger..... <sub>1</sub>      The Same ..... <sub>2</sub>      Smaller..... <sub>3</sub>

**Q.11 We would like you to compare the rate of staff turnover today with that of 12 months ago.**

**Would you say the rate of staff turnover in the last 12 months has:**[Please tick (✓) one box only].

<i>Decreased</i>	<i>Decreased</i>	<i>Remained</i>	<i>Increased</i>	<i>Increased</i>
<i>substantially</i>	<i>slightly</i>	<i>Constant</i>	<i>Slightly</i>	<i>substantially</i>
<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

**Q.12** Listed on this card [Int. Show Card A] are 7 possible difficulties which could face a company in business today. I would like you to rank them from 1 to 7 in order of importance as they face your company. Assign a '1' to the difficulty you think is most important to your company, a '2' to the second most important difficulty and so on.

	Rank in terms of importance
Poor Industrial Relations .....	<input type="checkbox"/>
Difficulties in recruiting staff.....	<input type="checkbox"/>
Employer's PRSI .....	<input type="checkbox"/>
Basic Labour Costs/Wages (other than PRSI element) .....	<input type="checkbox"/>
Unfair Competition from other companies .....	<input type="checkbox"/>
Corporate taxes/Taxes on profits .....	<input type="checkbox"/>
Affordable equity and working capital .....	<input type="checkbox"/>

Int. Record rank given to "Difficulties in recruiting staff": \_\_\_\_\_ (rank).  
If this is ranked 1 or 2 ask Q.13. -otherwise go to Q.14.

**Q.13** Why do you think you experience these difficulties in recruiting staff? [Int. Show Card B and tick all that apply.]

- (i) workers do not find it worthwhile taking a job at the wages offered .....  1
- (ii) the terms of employment do not suit many workers.....  2
- (iii) there is no career progression in the relevant jobs.....  3
- (iv) there is too much competition from other employers.....  4
- (v) there is a severe shortage of suitable applicants.....  5
- (vi) long/unsocial hours .....
- (vii) other (please specify).....  7

**Q.14** Thinking back over the last year, in terms of the overall profits of your company would you say your business has shown:

A Substantial Loss..... <input type="checkbox"/> 1	A Moderate Loss..... <input type="checkbox"/> 2	Broken Even..... <input type="checkbox"/> 3	A Moderate Profit..... <input type="checkbox"/> 4	A Substantial Profit..... <input type="checkbox"/> 5
---	--	--	--	---

**Q.15** Approximately what percentage of your firm's non-managerial employees (full-time and part-time) would you say are in a Trade Union?

25 per cent or less..... <input type="checkbox"/> 1	26 – 50 per cent..... <input type="checkbox"/> 2	51-75 per cent..... <input type="checkbox"/> 3	76+per cent..... <input type="checkbox"/> 4	Don't know..... <input type="checkbox"/> 5
---	--	--	---	--

**Q.16a** Approximately what percentage of your company's total operating costs would be accounted for by your total wage bill (for both full-time and part-time workers, including proprietors, owners and managers?)

Wage bill as a percentage of operating costs \_\_\_\_\_ per cent

PERSONS WORKING ON A FULL-TIME BASIS

**Q.17A** You mentioned that you have a total of \_\_\_\_\_ people working on a FULL-TIME basis in your company (See Q.7 above). How many of these full-time staff (including proprietors, owners and managers) would you have in each of the occupational categories listed on this Card [Int. Show Card C].

OCCUPATIONAL CATEGORIES	Q17A Number of FULL-TIME Workers
<b>1.Managers/Proprietors</b> (e.g. production; marketing; purchasing; & computer systems managers)	
<b>2.Engineering/Science/Computer/Other Professionals</b> (e.g. civil, chemical, electrical, electronic engineers; physicists, chemists, technologists, graduate software staff, architects, accountants, solicitors)	
<b>3.Engineering/Science and Computer Technicians/Other Associate Professionals (including Computer Technical Staff)</b> (e.g. electrical, electronic, production, plastics, instrumentation technicians; laboratory, plastics technicians; systems analysts, computer programmers; technical support; computer technicians)	
<b>4.Clerical/Secretarial</b> (e.g. telebusiness operators, computer operators, clerical supervisors, telephonists, typists)	
<b>5.Skilled Maintenance and Skilled Production</b> (e.g. electricians, fitters, electronic workers, welders, printers, carpenters)	
<b>6.Production Operatives</b> (e.g. millers, bakers, dyers, bleachers, machinists, paper makers, plastics workers)	
<b>7.Transport and Communications</b> (e.g. drivers, couriers, messengers)	
<b>8. Sales</b> (e.g. shop assistants, sales representatives)	
<b>9.Personal Services</b> (e.g. catering workers, domestic servants and cleaners, laundry workers)	
<b>10.Labourers (incl. Security) etc.</b> (e.g. dock labourers, other unskilled labourers, caretakers, watchmen, security guards)	
<b>TOTAL</b>	

**Q.17B** Approximately how many of your total FULL-TIME workers would fall into the following hourly basic pay rates? [Int. Show card D]

**Q.17C** Approximately how many FULL-TIME workers in each of the hourly pay rates are male and how many are female? [Int. Show card D]

**Q.17D** Approximately how many FULL-TIME workers in each of the hourly pay rates are aged 18 years or less, 19-25 years; 26 or more years? [Int. Show card D]

**Q.17E Do any workers in each of these hourly basic pay grades receive any form of regular fringe benefit from the company (e.g. meal allowance, health insurance, accommodation, etc). If so, please specify the nature of their fringe benefits. [Int. Show card D]**

Hourly Basic Pay Rates	Q 17B Number FULL-TIME Staff in hourly basic pay grade	No of FULL-TIME workers					Q 17E		
		Q 17C		Q 17D			Receive fringe benefits?		
		Males	Females	18 yrs old or less	19-25 yrs old	26 or more yrs old	No	Yes	If Yes, specify
£4.50 or less per hour							<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	_____
£4.51 to £5.50 per hour							<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	_____
£5.51 to £6.50 per hour							<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	_____
More than £6.50 per hour							<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	_____
Total							<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	_____

[Int: Check totals are same as at Q.17A]

**Q.17F Thinking now only of the \_\_\_\_\_ FULL-TIME workers referred to at Q.17B who are paid £4.50 or less per hour. Please tell me how many fall into each of the following occupational grades.[Int. Show Card C.]**

OCCUPATIONAL CATEGORIES	Q17F Number of FULL-TIME Workers
<b>1.Managers/Proprietors</b> (e.g production; marketing; purchasing; & computer systems managers)	
<b>2.Engineering/Science/Computer/Other Professionals</b> (e.g. civil, chemical, electrical, electronic engineers; physicists, chemists, technologists, graduate software staff, architects, accountants, solicitors)	
<b>3.Engineering/Science and Computer Technicians/Other Associate Professionals (including Computer Technical Staff)</b> (e.g. electrical, electronic, production, plastics, instrumentation technicians; laboratory, plastics technicians; systems analysts, computer programmers; technical support; computer technicians)	
<b>4.Clerical/Secretarial</b> (e.g. telebusiness operators, computer operators, clerical supervisors, telephonists, typists)	
<b>5.Skilled Maintenance and Skilled Production</b> (e.g. electricians, fitters, electronic workers, welders, printers, carpenters)	
<b>6.Production Operatives</b> (e.g. millers, bakers, dyers, bleachers, machinists, paper makers, plastics workers)	
<b>7.Transport and Communications</b> (e.g. drivers, couriers, messengers)	
<b>8. Sales</b> (e.g. shop assistants, sales representatives)	
<b>9.Personal Services</b> (e.g. catering workers, domestic servants and cleaners, laundry workers)	
<b>10.Labourers (incl. Security) etc.</b> (e.g. dock labourers, other unskilled labourers, caretakers, watchmen, security guards)	
<b>TOTAL</b>	

[Int: Check total with Q17B]

**Q.17G** Approximately how many of these FULL-TIME workers who are paid £4.50 or less per hour would be paid between £4.00 to £4.50 and £3.99 or less per hour.

	<i>Number of Full-time Workers</i>
£4.00 - £4.50 per hour	
£3.99 or less per hour	
Total	

[Int. Check total reconciles with Q17b]

**Q.17H** Once again, thinking in terms of your FULL-TIME workers (including proprietors, owners and managers) in this basic pay category of £4.50 or less per hour. When FULL-TIME staff in this pay category start with your company approximately how many days initial training do they receive to bring them up to a minimum level of proficiency? I would like you to tell me how many days initial training they receive (i) on-the-job while continuing with their job or productive function in the company; (ii) in-house on the company's premises but not on-the-job; (iii) out of the company.

[Int: If none write NONE. Do not leave blank].

- (i) On-the-job \_\_\_\_\_ days of initial training  
(ii) In-house (not on-the-job) \_\_\_\_\_ days of initial training  
(iii) Out of the company \_\_\_\_\_ days of initial training.

[Int: If none write NONE. Do not leave blank]

**Q.17I** While these full-time employees are undergoing this initial training do they receive a reduced wage?

Yes..... <sub>1</sub>      No ..... <sub>2</sub>



PERSONS WORKING ON A PART-TIME BASIS

**Q.18A** You mentioned that you had a total of \_\_\_\_\_ people working on a PART-TIME basis in your company (See Q.7 above). How many of these part-time staff (including proprietors, owners and managers) would you have in each of the occupational categories listed on this Card [Int. Show Card C].

OCCUPATIONAL CATEGORIES	Q18A Number of PART-TIME Workers
<b>1.Managers/Proprietors</b> (e.g. production; marketing; purchasing; & computer systems managers)	
<b>2.Engineering/Science/Computer/Other Professionals</b> (e.g. civil, chemical, electrical, electronic engineers; physicists, chemists, technologists, graduate software staff, architects, accountants, solicitors)	
<b>3.Engineering/Science and Computer Technicians/Other Associate Professionals (including Computer Technical Staff)</b> (e.g. electrical, electronic, production, plastics, instrumentation technicians; laboratory, plastics technicians; systems analysts, computer programmers; technical support; computer technicians)	
<b>4.Clerical/Secretarial</b> (e.g. telebusiness operators, computer operators, clerical supervisors, telephonists, typists)	
<b>5.Skilled Maintenance and Skilled Production</b> (e.g. electricians, fitters, electronic workers, welders, printers, carpenters)	
<b>6.Production Operatives</b> (e.g. millers, bakers, dyers, bleachers, machinists, paper makers, plastics workers)	
<b>7.Transport and Communications</b> (e.g. drivers, couriers, messengers)	
<b>8. Sales</b> (e.g. shop assistants, sales representatives)	
<b>9.Personal Services</b> (e.g. catering workers, domestic servants and cleaners, laundry workers)	
<b>10.Labourers (incl. Security) etc.</b> (e.g. dock labourers, other unskilled labourers, caretakers, watchmen, security guards)	
<b>TOTAL</b>	

**Q.18B** Approximately how many of your total PART-TIME workers would fall into the following hourly basic pay rates? [Int. Show card D]

**Q.18C** Approximately how many PART-TIME employees in each of the hourly pay rates are male and how many are female? [Int. Show card D]

**Q.18D** Approximately how many PART-TIME employees in each of the hourly pay rates are aged 18 years or less, 19-25 years; 26 or more years? [Int. Show card D]

**Q.18E Do any workers in each of these hourly basic pay grades receive any form of regular fringe benefit from the company (e.g. meal allowance, health insurance, accommodation, etc). If so, please specify the nature of their fringe benefits. [Int. Show card D]**

Hourly Basic Pay Rates	Q 18B Number PART-TIME Staff in hourly basic pay grade	No of PART-TIME workers					Q 18E Receive fringe benefits? No Yes If Yes, specify
		Q 18C		Q 18D			
		Males	Females	18 yrs old or less	19-25 yrs old	26 or more yrs old	
£4.50 or less per hour							<input type="checkbox"/> <sub>1</sub> <input type="checkbox"/> <sub>2</sub> _____
£4.51 to £5.50 per hour							<input type="checkbox"/> <sub>1</sub> <input type="checkbox"/> <sub>2</sub> _____
£5.51 to £6.50 per hour							<input type="checkbox"/> <sub>1</sub> <input type="checkbox"/> <sub>2</sub> _____
More than £6.50 per hour							<input type="checkbox"/> <sub>1</sub> <input type="checkbox"/> <sub>2</sub> _____
Total							<input type="checkbox"/> <sub>1</sub> <input type="checkbox"/> <sub>2</sub> _____

[Int: Check totals are the same as Q.18A]

**Q.18F** Thinking now only of the \_\_\_\_\_ **PART-TIME** workers referred to at Q.18B who are paid **£4.50** or less per hour. Please tell me how many fall into each of the following occupational grades.[Int show Card C]

OCCUPATIONAL CATEGORIES	Q18F Number of PART-TIME Workers
<b>1.Managers/Proprietors</b> (e.g production; marketing; purchasing; & computer systems managers)	
<b>2.Engineering/Science/Computer/Other Professionals</b> (e.g. civil, chemical, electrical, electronic engineers; physicists, chemists, technologists, graduate software staff, architects, accountants, solicitors)	
<b>3.Engineering/Science and Computer Technicians/Other Associate Professionals (including Computer Technical Staff)</b> (e.g. electrical, electronic, production, plastics, instrumentation technicians; laboratory, plastics technicians; systems analysts, computer programmers; technical support; computer technicians)	
<b>4.Clerical/Secretarial</b> (e.g. telebusiness operators, computer operators, clerical supervisors, telephonists, typists)	
<b>5.Skilled Maintenance and Skilled Production</b> (e.g. electricians, fitters, electronic workers, welders, printers, carpenters)	
<b>6.Production Operatives</b> (e.g. millers, bakers, dyers, bleachers, machinists, paper makers, plastics workers)	
<b>7.Transport and Communications</b> (e.g. drivers, couriers, messengers)	
<b>8. Sales</b> (e.g. shop assistants, sales representatives)	
<b>9.Personal Services</b> (e.g. catering workers, domestic servants and cleaners, laundry workers)	
<b>10.Labourers (incl. security) etc.</b> (e.g. dock labourers, other unskilled labourers, caretakers, watchmen, security guards)	
<b>TOTAL</b>	

[Int: Check total with Q18B]

**Q.19a** Approximately how many of these **PART-TIME** workers who are paid **£4.50** or less per hour would be paid between **£4.00 to £4.50** and **£3.99** or less per hour.

	<i>Number of Part-time Workers</i>
£4.00 - £4.50 per hour	
£3.99 or less per hour	
Total	

[Int. Check total reconciles with Q18b]

**Q.19b** Once again, thinking in terms of your **PART-TIME** workers (including proprietors, owners and managers) in this basic pay category of £4.50 or less per hour. When **PART-TIME** staff in this pay category start with your company approximately how many days initial training do they receive to bring them up to a minimum level of proficiency? I would like you to tell me how many days initial training they receive (i) on-the-job while continuing with their job or productive function in the company; (ii) in-house on the company's premises but not on-the-job; (iii) out of the company.

[Int: If none write NONE. Do not leave blank].

- (i) On-the-job \_\_\_\_\_ days of initial training  
 (ii) In-house (not on-the-job) \_\_\_\_\_ days of initial training  
 (iii) Out of the company \_\_\_\_\_ days of initial training

[Int: If none write NONE. Do not leave blank]

**Q.19c** While these part-time employees are undergoing this initial training do they receive a reduced wage?

Yes ..... <sub>1</sub>    No ..... <sub>2</sub>

VACANCIES, HIRINGS AND DEPARTURES OF LAST 12 MONTHS - £5.50 to £6.50 PER HOUR

- Q.20** I would like you to think back over the last year about vacancies which your company had in the basic pay range £5.50 to £6.50 per hour (about £215 - £255 per week). By vacancies I am referring to unmet demand for labour where the positions were/are unoccupied and you were/are actually searching for employees. How many vacancies in the basic pay range of £5.50 - £6.50 per hour (about £215 - £255 per week) did your company have in the last year (including any current outstanding vacancies)?

\_\_\_\_\_ vacancies in pay range £5.50 – £6.50 per hour

[Int. If none, write NONE, do not leave blank]

- Q.21** How many people were **HIRED** into the basic pay range of £5.50 - £6.50 per hour (about £215 - £255 per week) in the last year?

\_\_\_\_\_ persons hired within range of £5.50 - £6.50

[If none please write NONE do not leave blank]

- Q.22** How many people **LEFT, RETIRED OR WERE DISMISSED** from positions in the basic pay range of £5.50 - £6.50 per house (about £215 – £255 per week) in the last year?

\_\_\_\_\_ persons left, retired or were dismissed within range of £5.50 - £6.50

[If none please write NONE do not leave blank]

VACANCIES, HIRINGS AND DEPARTURES OF LAST 12 MONTHS - £4.50 or LESS PER HOUR

- Q.23** I would now like you to think back over the last year about vacancies which your company had in the basic pay range of £4.50 or less per hour (about £175 or less per week). By vacancies I am referring to unmet demand for labour where the positions were/are unoccupied and you were/are actually searching for employees. How many vacancies in the basic pay range £4.50 or less per hour (about £175 or less per week) did your company have in the last year (including any current, outstanding vacancies).

\_\_\_\_\_ vacancies in pay range £4.50 or less.

[Int. If none, write NONE, do not leave blank]

- Q.24** How many people were **HIRED** into the basic pay range of £4.50 or less per hour (about £175 or less per week) in the last year?

\_\_\_\_\_ persons left, retired or were dismissed within range of £4.50 or less

[If none please write NONE do not leave blank]

**Q.25 How many people LEFT, RETIRED OR WERE DISMISSED from positions in the basic pay range of £4.50 or less per hour (about £175 or less per week) in the last year?**

\_\_\_\_\_ persons hired with range of £4.50

[If none please write NONE do not leave blank]

**Q.26 Have you heard about the introduction of the minimum wage?**

Yes.....  <sub>1</sub> → go to Q.27

No .....  <sub>2</sub> → end interview

**Q.27 When was it introduced? Please record month and year.**

\_\_\_\_\_ month

\_\_\_\_\_ year

Don't know.....

**Q.28a What was the basic hourly rate of pay for an experienced adult worker under the minimum wage?**

IR£ \_\_\_\_\_ per hour

Don't know.....

**Q.28b What was the basic hourly rate of pay for a young and inexperienced worker under the minimum wage?**

IR£ \_\_\_\_\_ per hour

Don't know .....

**Q.29a The minimum wage for an experienced adult worker is £4.40 per hour although there are some exceptions to this for certain categories of young employees in their first year of employment or training. These exceptions are referred to as sub-minimum rates and are below the usual £4.40 level. Has your company availed of these so-called sub-minimum rates permitted under the minimum wage legislation?**

Yes... <sub>1</sub> → go to Q.29b No... <sub>2</sub> → go to Q.30 Never heard of sub minimum rates <sub>3</sub> → go to Q.30

**Q.29b Which sub-minimum rates have you availed of?** [Please tick (✓) the relevant boxes]

Yes No

- (i) Under 18 years of age ..... <sub>1</sub> ..... <sub>2</sub>  
 (ii) in first year of employment over 18 years ..... <sub>1</sub> ..... <sub>2</sub>  
 (iii) in second year of employment over 18 years ..... <sub>1</sub> ..... <sub>2</sub>  
 (iv) trainee over 18 years in structured training ..... <sub>1</sub> ..... <sub>2</sub>

**Q.29c Have you applied more than one sub-minimum rate to the *same* employee since April 1<sup>st</sup> 2000?**

Yes ..... <sub>1</sub> → go to Q.29d No ..... <sub>2</sub> → go to Q.30

**Q.29d Which sub-minimum rates have you applied to the *same* employee?** [Please tick (✓) the relevant boxes]

Yes No

- (i) Under 18 years of age ..... <sub>1</sub> ..... <sub>2</sub>  
 (ii) in first year of employment over 18 years ..... <sub>1</sub> ..... <sub>2</sub>  
 (iii) in second year of employment over 18 years ..... <sub>1</sub> ..... <sub>2</sub>  
 (iv) trainee over 18 years in structured training ..... <sub>1</sub> ..... <sub>2</sub>

**Q.30 Thinking back to when the minimum wage was introduced in April 2000, about how many people in your company got an increase in their hourly rate *as a direct result of the minimum wage*?**

\_\_\_\_\_ persons got increase directly due to minimum wage If none, write NONE.

Do not leave blank.

**Q.31 Given trends in the labour market in Ireland over the last year, do you think that you would have had to increase wage rates anyway up to the minimum level set out in the minimum wage?**

Yes ..... <sub>1</sub> No ..... <sub>2</sub>

**Q.32** When the minimum wage was introduced did you have to increase the hourly rates of higher grade staff to maintain pay differentials?

Yes..... <sub>1</sub>

No..... <sub>2</sub>

**Q.33** I would like you to think in terms of those workers who were above the minimum wage when it was introduced. Approximately what percentage of your workforce which was above the minimum wage received an increase in hourly pay rates as a result of restoring pay differentials?

\_\_\_\_\_ per cent

**Q.34** Would you say that the introduction of the minimum wage directly increased your labour costs or had no effect on your labour costs.

Increased labour costs . . . <sub>1</sub> No effect..... <sub>2</sub>

**Q.35** By approximately what percentage?

Less than 3% ..... <sub>1</sub>    3 to less than 5 % .... <sub>2</sub>    5 to less than 10% ... <sub>3</sub>

10% to less than 25% ..... <sub>4</sub>    25% or more ..... <sub>5</sub>

**Q.36** Suppose the minimum wage had not been introduced. Do you think you would be employing: more people today than you are; the same number of people or fewer people.

More people ..... <sub>1</sub>

Same number..... <sub>2</sub>

Fewer people ..... <sub>3</sub>

**Q.37** About how many more/less \_\_\_\_\_ people



**Q.38 Has the introduction of the minimum wage in April 2000 led to any of the following in your company. Please state whether the effect was significant, slight or none.**

	<i>Significant Effect</i>	<i>Slight Effect</i>	<i>No Effect</i>
(i) changes to workers pay and benefits structures e.g. payment methods; overtime rates; pay supplements, commission or tips; benefits in kind etc. ....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(ii) Changed the way work is organised (e.g. working patterns; shift systems; overtime).....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(iii) A reduction in working hours of workers .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(iv) More inexperienced and less experienced staff.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(v) Increase in prices of your goods and services .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(vi) Reduction in your profits .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(vii) Reduction in expenditure on staff training .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(viii) Tightened controls on labour (e.g. treatment of absenteeism, paid breaks, staff meals).....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(ix) Increased investment in training and development of employees .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(x) Increased use of technology/machinery .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(xi) Improved quality of service or product .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

**Q.39 Finally, what effect would you say that the introduction of the minimum wage has had on the following areas of your businesses? For each area please tell me whether or not the minimum wage has resulted in a significant decrease; slight increase, no effect, slight increase or a significant increase.**

	<i>Significant Decrease</i>	<i>Slight Decrease</i>	<i>No Effect</i>	<i>Slight Increase</i>	<i>Significant Increase</i>
(i) Staff morale.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(ii) Productivity.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(iii) Retraining of low paid staff and up-grading of their work...	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(iv) Amount of subcontracting work undertaken .....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(v) Staff turnover.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(vi) Industrial relations.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**Q.40 Did you receive any information on the National Minimum Wage from the following sources [Please tick (✓) Yes or No in respect of each]**

	Yes	No		Yes	No
(i) TV Advertisements.....	<input type="checkbox"/> <sub>1</sub> .....	<input type="checkbox"/> <sub>2</sub>	(v) Employee(s).....	<input type="checkbox"/> <sub>1</sub> .....	<input type="checkbox"/> <sub>2</sub>
(ii) Radio Advertisements.....	<input type="checkbox"/> <sub>1</sub> .....	<input type="checkbox"/> <sub>2</sub>	(vi) Employer/business organisation .....	<input type="checkbox"/> <sub>1</sub> .....	<input type="checkbox"/> <sub>2</sub>
(iii) Newspaper Advertisements.....	<input type="checkbox"/> <sub>1</sub> .....	<input type="checkbox"/> <sub>2</sub>	(vii) Dept of Enterprise Trade & Employ. .	<input type="checkbox"/> <sub>1</sub> .....	<input type="checkbox"/> <sub>2</sub>
(iv) Information leaflet/booklet.....	<input type="checkbox"/> <sub>1</sub> .....	<input type="checkbox"/> <sub>2</sub>	(vii) Other source.....	<input type="checkbox"/> <sub>1</sub> .....	<input type="checkbox"/> <sub>2</sub>

**Q.41 Do you have any, final comments which you would like to make on the National Minimum Wage?**

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**THANK YOU FOR HAVING TAKEN THE TIME TO COMPLETE THIS QUESTIONNAIRE. YOUR  
CO-OPERATION HAS BEEN OF GREAT ASSISTANCE TO US**