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## EMPLOYMENT EFFECTS OF THE PROPOSED MINIMUM WAGE



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In its recent report the National Minimum Wage Commission recommended a minimum wage set at two-thirds of median earnings. This is far higher than the level prevailing in the US or that recommended by the Low Pay Commission in the UK. It would affect around 23% of all employees and would represent for those affected an average wage increase of some 35%. The analysis presented here suggests that a minimum wage set at this level could lead to the loss of between 50,000 and 70,000 jobs.

### INTRODUCTION

Exclusion, marginalisation and poverty stem primarily from unemployment. The introduction of a minimum wage will worsen rather than improve these conditions if it leads to job losses. This is virtually certain to occur if the National Minimum Wage Commission's recommendation, for a level set at two-thirds of median earnings, is acted upon. The Commission itself accepts that the introduction of a minimum wage will do little to tackle poverty since "most poor households do not contain an employee" (p. 8). The employment effects of the proposed minimum wage are therefore of profound importance. This article is a first attempt to evaluate quantitatively the potential employment effects of the proposal.

The Minimum Wage Commission did have available to them a review of the recent international literature on the employment effects of minimum wages; Boyle, McCarthy and O'Neill (1998). The Commission's reading of that study is reflected in its comment that "we have seen ..... that, contrary to the neo-classical view that has pervaded thinking in this area for some years, more recent evidence suggests that a carefully chosen minimum wage need not have negative employment effects" (p. 64).

\* This article is based on a paper presented to the Annual Conference of the Dublin Economics Workshop, Kenmare, October 1998

However, the literature review concentrated on the debate that has arisen over US findings; namely, that the employment effects of minimum wages may be more subtle than had traditionally been supposed. Two important differences between the US and Irish or more general European cases were played down, or ignored altogether. The most important is that the US minimum wage is set at 41% of median earnings, while the proposed Irish rate is set at 66% (p.66).<sup>[1]</sup> This suggests that the US rate is set very much closer to the equilibrium wage; one would hardly be surprised then that significant employment effects would be difficult to identify statistically. There is far less ambiguity and debate about the adverse employment effects of the French minimum wage, which is set at almost 60% of median earnings.<sup>[2]</sup> Another difference is that high-wage unemployment tends to be pervasive in Europe, while US unemployment is more frequently of the cyclical demand-deficient type.<sup>[3]</sup> Disequilibrating wage changes will impact more strongly on European employment under these circumstances.<sup>[4]</sup>

The vast majority of researchers believe that, when the minimum wage is set at a very high level, the subtle effects discussed in the literature arising from the US findings will be dominated by conventional substitution and industry output effects on employment.<sup>[5]</sup> The substitution effect operates through the replacement of low-productivity labour by capital, and the output effect entails higher costs driving firms out of business or forcing them to cut back production. It is these effects which this article attempts to evaluate.

That the minimum wage proposed for Ireland is high can be seen by comparing the Irish Commission's recommendations with those of the UK Low Pay Commission, which also reported in 1998. The former is for a rate equal to 66% of median earnings, compared to 45% for the UK. The Irish recommendation would affect some 23% of the workforce, whereas only 12% of UK workers would be affected.<sup>[6]</sup>

The evaluation carried out here is based on a rate set at two-thirds of median earnings, as the Commission recommended. The data available to the Commission indicated that this corresponded to an hourly rate of £4.40. The effect of the current boom is likely to mean that £4.40 is now substantially below two-thirds of median earnings, however. If the actual rate applied is £4.40, rather than two-thirds of median earnings, job losses will be well below those indicated here. However, it is impossible to calculate by how much lower since the most recent data is that which was made available to the Commission.

[1] Of the 11 countries with statutory minimum wage rates, only Belgium's is higher as a proportion of median earnings than Ireland's: Report of the Commission, 1998, p.66.

[2] See page 104 of Appendix 3 of the Commission's report which contains a submission made by the OECD.

[3] Bruno and Sachs (1985), Bruno (1986), Coen and Hickman (1988).

[4] Neary (1990).

[5] Thus Machin and Manning (1992, p.6), who question the traditional view of the minimum wage, write that "the maximum employment level is reached when the minimum wage is set at what would have been the market-clearing wage if the labour market was competitive. If the minimum is set higher than this, then...employment will fall". This point is emphasised by Boyle, McCarthy and O'Neill (1998) also.

[6] Furthermore, the effects in Ireland would fall much more disproportionately on young and female workers than would be the case in the UK. These UK data are taken from Low Pay Commission (1998) and UK Department of Trade and Industry (1998).

## EVALUATING POSSIBLE EMPLOYMENT EFFECTS

The Commission assumes that the minimum wage will have no effect on the wage demands of workers currently earning more than this amount. The calculations in this paper are based on that (very strong) assumption. If there were knock-on effects, through a desire to maintain pay relativities for example, the overall employment effects would likely be magnified, though the effects on the most vulnerable groups, such as the young, could be moderated. Bazen and Martin (1991), for example, in a study of the effects of French minimum wage legislation on youth employment, find that the knock-on effects on other workers' wages induces substitution towards young workers, which significantly diminishes the overall adverse impact on the latter group.

Maintaining the Commission's assumption means that this article need only consider the effect on jobs which currently pay less than the new minimum. These employment effects are easily worked out, in theory at least. The percentage of below-minimum-wage jobs lost in a sector is determined by the elasticity of labour-demand in that sector multiplied by the impact on real wages in the sector. The latter in turn is measured by the impact of the legislation on the average wage of those currently below the minimum less the impact these increased wages have on sectoral output prices.

The data available to the Commission suggest that 23% of all employees are currently earning less than the proposed minimum (p. 6). Table 1, from Nolan (1997), identifies Personal Services, the Retail Sector and Manufacturing as the sectors employing the bulk of these vulnerable workers.

Of these, some 8% are in the public sector; it must be assumed that these jobs will be protected. A further 7.2% are in Agriculture; as no model of agricultural employment exists, it must also be conservatively assumed that these jobs are unaffected. With 1997 employment standing at 1,338,400, this means that some 261,000 workers are earning below the proposed minimum *and* working in vulnerable sectors. Of these roughly 25%, or 65,000, are in Manufacturing, mostly in traditional indigenous-owned firms and the remainder, around 196,000, are in Market Services (including Construction).

What is the responsiveness of employment to disequilibrating real-wage developments in these sectors? Drawing on the evidence available, an elasticity of  $-0.8$  is adopted for both. For traditional manufacturing, this is more conservative than the value of  $-1.0$  found by Bradley, Fitz Gerald and Kearney (1993) when output is endogenous.<sup>[7]</sup> In a

[7] As one would expect, this responsiveness is greater than the value of  $-0.6$  they find for the high-tech sector.

TABLE 1: INCIDENCE OF LOW PAY BY INDUSTRY, 1994: PERCENTAGE OF ALL THOSE BELOW THE CUT-OFF

Industry Sector	% employed below the hourly earnings cut-off of £4.40
Agri, forestry and fishing	7.2
Building and construction	5.8
Other production industries	20.2
Wholesale	5.1
Retail	17.6
Insurance, finance, business	2.2
Transport, communication	3.9
Professional services	2.0
Teaching	1.0
Health	5.3
Public admin., defence	1.8
Personal services	21.8
Other	6.2
All	100.0

Source: Nolan (1997)

1991 study of the Market Services sector the same authors find that substitution effects resulting from changes in relative factor prices are larger than in manufacturing; this raises the employment elasticity of the sector. Industry-output effects on employment, on the other hand, may be greater or less than in Manufacturing; the supply reduction in Market Services will be moderated by a price increase (in this largely non-tradeable sector), though this will be counterbalanced by the fact that the employment intensity of Market Services output is higher. These considerations are consistent with the value of  $-0.8$  for services implied by Geary and Murphy's (1985) findings.<sup>[8]</sup>

Two further numbers are required to perform the calculations: an estimate of the extent to which the wages of those currently below the minimum will be raised by the legislation and an estimate of the impact this will have on output prices.

[8] Bazen and Martin (1991) use a constant-output elasticity of labour demand, which is lower than the "total" elasticity sought here. Kaufman (1989) uses the latter, which is the one estimated by Geary and Murphy (1985). The methodology in this article corresponds closely to that of Kaufman (1985), and the estimates of total labour-demand elasticities are similar to his.

The first of these comes from Nolan (1997). Given the Commission's recommendations for a minimum wage of around £3 per hour for those under 18 years of age, for a separate training rate for job entrants without experience regardless of age, and for a rate of £4.40 per hour for all others, Table 2 suggests a conservative estimate of around 35% for the average wage increase among those affected by the legislation.

**TABLE 2: FIRST-ROUND INCREASE IN EARNINGS OF EMPLOYEES AFFECTED BY ALTERNATIVE NATIONAL HOURLY MINIMUM WAGES, WITH AND WITHOUT AGE DIFFERENTIATION**

National Minimum Wage £ per hour, 1997	% of employees affected	average increase for employees affected	as % of average gross hourly wage of employees affected
	%	£ per hour	%
£3.00 for all	9.1	0.65	31.2
£3.50 for all	14.1	0.78	32.5
£4.00 for all	18.6	1.00	37.9
£4.50 for all	24.8	1.15	39.1
£5.00 for all	30.2	1.35	42.3
<b>Age Differentiated</b>			
£3.50 for over 21, £3.00 for 18–20,			
£2.50 for under 18	13.1	0.71	30.2
£4.00 for over 21, £3.50 for 18–20,			
£3.00 for under 18	18.0	0.91	34.9
£4.50 for over 21, £4.00 for 18–20,			
£3.50 for under 18	24.1	1.07	36.6
£5.00 for over 21, £4.00 for 18–20,			
£3.00 for under 18	29.1	1.22	38.6

Source: Nolan (1997)

Finally some idea of how these wage pressures will impact on output prices is needed. While a small effect would be desirable on inflation grounds, a larger increase would reduce the adverse employment effect because it means firms are shifting a larger part of the burden of cost increases onto consumers.

In what follows, the Manufacturing sector is treated as internationally tradeable, in the sense that output prices (mediated through the exchange rate) are determined by competitors elsewhere; no part of the cost increase can then be passed on in the form of price increases. The impact on Manufacturing jobs is then calculated as the number of jobs currently paying below the minimum, multiplied by the responsiveness of manufacturing employment to real wage increases, multiplied by the impact of the legislation on below-minimum wages. This implies a total of 18,000 manufacturing jobs lost.<sup>[9]</sup>

What of Market Services? Since these are insulated from foreign competition to a greater extent than are manufactured goods, there is some scope for passing cost increases on to consumers in the form of price increases.<sup>[10]</sup> This raises the question: to what extent increases in costs can be passed on as price increases? Barry (1997) presents a model in which the output of non-tradeables, determined on the supply side, is equated to the demand for non-tradeables, which is driven by traded-sector output. If costs were to rise only in the non-traded sector, there would unambiguously be a rise in non-traded prices. However, costs also rise in the traded sector (in the present case, in traditional manufacturing) which reduces demand for non-tradeables and thereby exerts downward pressure on non-traded prices. Barry's (1997) model suggests that a 3% impact on non-traded prices of a 10% rise in costs would be an overestimate. Since the rise in prices dampens down the rise in real wages, this value is adopted in order to keep the estimates of the employment effects reasonably conservative.<sup>[11]</sup>

If low-wage service industries can be viewed as substantially different from other service industries, a high proportion of the increase in the cost of low-wage labour will be passed on into the prices of these goods. Job losses in Market Services in this case will amount to the 196,000 low-wage service jobs, multiplied by the elasticity of labour-demand (-0.8), multiplied by the impact of the minimum wage on the wages of the low paid (0.35), less the impact of these cost increases on the output price of these low-wage sectors (0.3). This amounts to job losses of 38,000 in Market Services.<sup>[12]</sup>

[9] The figure of 18,000 is based on the following:  $65,000 \times 0.8 \times 0.35$ .

[10] In fact these price effects are already built into the estimates of the labour-demand elasticity. However, it seems clearer to discuss the separate simulations developed at this stage; in double counting the price effects, this article is again erring on the conservative side in regard to overall employment results.

[11] This is somewhat larger than the estimates reported for the specific case analysed in Barry (1997), because the earlier paper analysed economy-wide wage increases. By impacting on high-tech as well as traditional manufacturing, these would exert greater downward pressure on the demand for non-tradeables. The mark-up pricing rule adopted in the ESRI macromodel on the other hand might be thought to imply a far higher effect on non-traded prices than is found here. Prices in that model are a mark-up on unit labour costs however, and with productivity increasing through the substitution of capital for labour, unit labour costs do not rise as much as hourly earnings.

[12] The figure of 38,000 is based on the following:  $196,000 \times 0.8 \times 0.35 \times (1-0.3)$ .

Alternatively, though, it might be argued that there is no such distinction between low-wage and other service sectors; rather that low-wage and other workers operate together to produce service-sector output. In this case what matters for non-traded output prices is the impact of the minimum wage on the total service-sector wage bill, multiplied by the impact this has on service-sector prices.

The minimum wage in this case will have a smaller effect on output prices, with correspondingly worse job losses.<sup>[13]</sup> It is assumed, as page 10 of the Commission's report suggests, that the minimum wage raises the wage bill in affected sectors by 4%. The loss in Market Services jobs then amounts to 54,000 jobs.<sup>[14]</sup>

## CONCLUSIONS

One of the arguments advanced for the introduction of a minimum wage is that it would increase the attractiveness of work to those currently caught in the poverty trap. Unfortunately though, the effect on labour supply is of little relevance if the measure reduces the number of jobs available.

This article has sought to estimate the number of jobs that may be lost as a result of the introduction of a minimum wage set at two-thirds of median earnings. In doing so, it adopts an unashamedly macro approach. Further work in the area must recognise that the policy is likely to have particularly significant effects on women and youths. While 41% of employees are women, for example, they account for 52% to 55% of the low paid.<sup>[15]</sup> Age enters significantly also in that almost 50% of workers below the proposed minimum are less than 25 years of age. Employment effects will impact primarily therefore on these two groups.

The article's results suggest that if the data available to the Commission are correct – that 23% of jobs in the economy are currently paying less than the proposed minimum and that £4.40 represents two-thirds of median earnings – then between 56,000 and 72,000 jobs could be lost through the introduction of a minimum wage at this level. These numbers will undoubtedly strike observers as high; they imply that one-in-four or one-in-five of the jobs that are identified as vulnerable will disappear. The numbers may seem less fanciful though when it is realised that, for a job initially paying £130 per week, the increased cost to the firm of retaining that job will be over £50 a week (taking employer's PRSI contributions into account).

[13] Recall that firms' ability to pass cost increases on as higher output prices reduces the impact of the minimum wage on the firm and therefore moderates job losses.

[14] The figure of 54,000 is based on the following:  $196,000 \times 0.8 \times 0.35 \times [1 - (0.3 \times 0.04)]$ .

[15] This is partly due to the fact that part-time workers, the majority of whom are women, are much more likely to be low paid; Nolan (1997).



One may be sceptical about some of the data with which the Commission worked, since some fast-food restaurants and delicatessens are currently advertising wages of between £4 and £5 an hour. If a rate of £4.40 represents less than two-thirds of median earnings, then job losses will be less substantial than present calculations predict. However, this scepticism could be overly influenced by wage rates prevailing in Dublin. It must also be remembered that this is a time of unprecedented boom and that, if the boom abates and median earnings fall, it will be very difficult to reduce the value of the statutory minimum. One must also be cognisant of the dangers of introducing new nominal rigidities into the Irish labour market given the advent of the single currency without sterling.

The way to achieve the various goals towards which the minimum wage is supposedly targeted is to remove the low paid from the tax net. By raising the incentive to work, this draws people out of the poverty trap and, since, by expanding labour supply, it reduces the real cost of labour to employers, it means jobs are created rather than destroyed.

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