

THE EFFECTS OF MINIMUM WAGES ON WAGE DISPERSION AND EMPLOYMENT: EVIDENCE FROM THE U.K. WAGES COUNCILS

STEPHEN MACHIN and ALAN MANNING*

Using data on Wages Council coverage from the United Kingdom New Earnings Survey, the authors examine the impact of mandated minimum wages on wage dispersion and employment in the United Kingdom in the 1980s. They find evidence that a dramatic decline in the toughness of the regulation imposed by the Wages Councils through the 1980s—a decline, that is, in the level of the minimum wage relative to the average wage—significantly contributed to widening wage dispersion over those years. There is, however, no evidence of an increase in employment resulting from the weakening bite of the Wages Council minimum pay rates. Instead, consistent with the conclusions of several recent U.S. studies, the findings suggest that the minimum wage had either no effect or a positive effect on employment.

Debate about the employment effects of minimum wage legislation revived in the United Kingdom during the campaign prior to the election of April 1992, when the Labour Party proposed introducing a national minimum wage if it won the election (which it did not). Further fueling the debate, the incumbent U.K. Conservative Government, in its 1993 Trade Union Reform and Employment Rights Bill, abolished the existing system of minimum wages, the Wages

Councils that (in 1990) set industry-based minimum rates of pay for approximately 2.5 million low-paid workers.¹

Similarly, interest in minimum wages was stimulated in the United States by the increase in the U.S. federal minimum wage in the late 1980s, a development that spawned a number of studies on the economic effects of minimum wages. The debate has become

*Stephen Machin is Visiting Associate Professor at Harvard University and Reader in Economics at University College London, and Alan Manning is Reader in Economics at the London School of Economics. The authors thank Sarah Gammage for her excellent and entertaining research assistance and Paul Gregg, Alan Krueger, David Metcalf, Andrew Oswald, John Schmitt, and participants in seminars at Birkbeck, UMIST, Warwick, and York for helpful comments.

The data used in this paper will be supplied to other researchers on request to Stephen Machin, Department of Economics, University College London, Gower Street, London, WC1E 6BT, U.K.

¹The industry-based system of minimum wage legislation that existed under the Wages Councils is clearly different from the U.S. situation, in which a federal minimum wage exists but minimum wages may exhibit inter-state variation (see Neumark and Wascher 1992). It is unclear whether the Labour Party's proposals would have simply involved a national minimum rate or would have retained variation across industries.

particularly interesting because some of these recent U.S. studies (for example, Katz and Krueger 1992; Card 1992a,b) used microeconomic data sources and, in contrast to earlier time-series studies (see Brown, Gilroy, and Cohen [1982] for a survey), failed to find the conventional negative relationship between employment and the minimum wage. It is clear that these results have, in some sense, shifted the focus of the debate: in the past, studies were divided between those estimating large employment losses and those estimating small losses, whereas the focus now is on whether minimum wage laws have negative effects or no effects on employment.

In this paper, we investigate the effects of minimum wages on wage dispersion and employment in the United Kingdom using data on workers covered by Wages Councils. Specifically, we evaluate the consequences for employment of the weakening of the Wages Council system (that is, the failure to upgrade minimum wages in line with average wages) in the 1980s. We believe that this subject bears close scrutiny now that the government has abolished the remaining Wages Councils, leaving the United Kingdom the only European Community country with no formal (or implicit) system of minimum wage legislation in operation.

The U.K. Wages Councils

The Wages Councils have their origins in the trade boards that were established in 1909. The system expanded until, by 1962, there were 60 Councils covering 3.5 million workers (Low Pay Unit 1983). After 1962, many Councils were abolished and amalgamated, and by 1990 there were 26 Councils covering around 2.5 million workers. The industries of largest employment covered by the Councils were Catering, Retailing, and Clothing Manufacture.

The Wages Councils set legally enforceable minimum pay rates for the workers under their jurisdiction, together with holidays and holiday pay, overtime premia, and other terms and conditions of employment. (Precise definitions of the occupations of workers covered by particular Councils are contained

in various U.K. Wages Inspectorate publications.) Each Council consisted of an equal number of representatives of employers and workers, together with a maximum of three independent members nominated by the government who had a casting vote if the two sides failed to agree. Typically, the Councils met annually to decide on pay rates for the next 12 months.

It should be noted that the method of setting wages in the Wages Councils changed in recent years. Prior to the Wages Act of 1986, a Council generally set a number of minimum hourly wages for different types of workers within its jurisdiction. The Wages Act of 1986 restricted the Councils to setting a single basic minimum, and removed young people under the age of 21 from the coverage of the Wages Councils.² These changes were justified on the grounds that the Wages Council had hindered employment. For example, Tom King, the then Employment Secretary, stated,

The Government's overriding concern is to promote employment and to remove any excessive burden on employers. The present system inhibits the creation of more jobs and this is especially true in the case of young people. The present power of Wages Councils also undoubtedly imposed complex and unnecessary burdens on business. (*Employment Gazette*, August 1985, p. 291)

Furthermore, as noted above, the government recently abolished the remaining 26 Councils. It is thus important to carefully evaluate the economic impact that the minimum rates of pay had while the system was in operation.

Literature on the Employment Effects of Minimum Wages in the United Kingdom

In the early 1990s pre-election debate surrounding the likely effects of a U.K. national minimum wage, many estimates of the employment consequences were produced, ranging from the government's claim that two

²The limited evidence we have suggests that not much use has been made of this provision to cut the pay of young workers. This finding is reminiscent of Katz and Krueger's (1992) finding that employers have not made much use of the U.S. youth subminimum. The reasons for this disuse are unclear.

million jobs would be lost to the more moderate estimates of employment reductions by Bazen (1990) and Gregg (1990). As Gregg (1992) himself admitted, however, all these estimates share one large weakness. Each begins by calculating the effect of the introduction of the minimum wage on the average level of wages; it then evaluates the economic consequences of the computed increase in aggregate wages by entering that value into one of the macroeconomic models of the economy. For this procedure to be a legitimate one, all sections of the labor market need to be similar.

There is good reason to believe that they are not. For example, using the methodology described above, the rise in women's pay relative to men's that followed the Equal Pay Act of 1970 would have been predicted to reduce employment, since it led to a rise in average wages. Yet, far from falling, women's employment continued to rise much as it had before (see Manning 1992). The macroeconomic models are simply not designed to analyze changes in relative wages such as those produced by the Equal Pay Act and minimum wage legislation, and any conclusions based on the use of such models must be suspect.

A more microeconomic study is needed to properly evaluate the likely effects of minimum wage legislation. In the case of Britain, the natural focus for such an examination is the Wages Council system. Yet, research on the Wages Councils system is very limited. Craig et al. (1982) considered the effect of abolition of some Councils in the 1970s and concluded that the activities of the Wages Councils they studied had no adverse employment effects. On the other hand, Morgan et al. (1985) investigated the effect of minimum wages on employment in a time series study of the clothing industry between 1950 and 1981, and they claimed to find evidence of a negative effect for men and a smaller, less robust, effect for women. (Canning and Tarling [1985] argued that Morgan et al.'s conclusions were very sensitive to specification.)

Evidence on the Economic Impact of the Wages Councils

The main source of data on individuals covered by the Wages Councils is the annual

New Earnings Survey. This source reports average earnings (both weekly and hourly), the distribution of earnings, and the numbers of men and women who were found to be covered and were paid adult rates.³ Data are provided only for those Wages Councils that covered more than 100 workers in the sample in any given year, and our analysis thus focuses on the larger Councils. To the information provided in the New Earnings Survey, we added the basic minimum hourly wage in force at the time of the survey (see the Data Appendix). Data on the ten Wages Councils used in our sample are presented in Table 1.

For our investigation, we need a measure of the toughness of minimum wage legislation—that is, a measure of how “high” the mandated minimum is and how consistently the minimum is kept at that level. One option is to use the real minimum wage, but that measure does not accurately reflect the stringency of regulation if real average hourly earnings change. For example, if real average hourly wages rose, the proper interpretation of an unchanging real minimum wage would be that the legislation had become less tough. A suitable normalized measure, we believe, is the minimum wage as a proportion of average earnings.⁴ In what follows, we refer to this proportion as our “toughness” measure.

³This aspect of the data means that we are unable to consider the potentially important effects of minimum wage legislation on youths. This inability might be thought a disadvantage, as many U.S. studies conclude that the minimum wage has a very limited effect on the adult labor market and any important effects are to be seen in the youth labor market. But it is important to note that the Wages Council rates in the United Kingdom are high in relation to average earnings even for adult workers. Large numbers of adult workers are paid the minimum rates (Department of Employment 1988:4), and the empirical findings we present below suggest that changes in minimum wages can explain a significant part of the changes in pay dispersion among adult workers. All this information suggests that the Wages Councils do have an important effect on the adult labor market, although we acknowledge that they still may well have a different effect on the youth labor market.

⁴Our results when we used a real basic minimum wage measure, however, were qualitatively similar to those we obtained using the ratio of the minimum wage to average earnings.

Table 1. Data on Wages Councils in the Sample.

<i>Name of Wages Council</i>	<i>Years in Sample</i>	<i>Average Employment</i>	<i>Average Toughness^a</i>	<i>Average Change in Toughness</i>	<i>Average Change in Dispersion</i>	<i>Average Change in Employment</i>
Catering—Licensed Non-Residential (Female)	1979–85	143	0.894	-0.013	0.071	0.024
Catering—Licensed Non-Residential (Male) ^b	1979–90	160	0.715	-0.007	0.024	0.039
Catering—Licensed Residential (Female)	1979–90	206	0.831	-0.015	0.004	0.026
Catering—Licensed Residential (Male)	1979–90	265	0.651	-0.007	-0.001	0.032
Catering—Unlicensed (Female)	1979–83	109	0.858	-0.031	0.077	-0.085
Clothing Manufacture (Female)	1982–90	661	0.736	-0.023	0.008	-0.046
Hairdressing (Female)	1979–90	192	0.704	-0.002	-0.030	-0.003
Retail Trades—Food and Allied (Female) ^b	1980–90	967	0.825	-0.004	0.056	-0.031
Retail Trades—Food and Allied (Male) ^b	1980–90	807	0.563	0.007	0.028	0.007
Retail Trades—Non-Food (Female)	1980–90	1486	0.707	-0.011	0.016	-0.017
Retail Trades—Non-Food (Male)	1980–90	956	0.514	-0.004	0.004	0.001
Dressmaking (Female)	1978–82	294	0.798	-0.008	0.010	0.020
Ready-Made and Bespoke Tailoring (Female)	1978–82	238	0.796	0.018	0.029	-0.038
Made-Up Textiles (Female)	1979–82	111	0.742	-0.016	0.010	-0.032

Source: See Data Appendix.

Note: All changes data are average changes of the log of the relevant variable. Data are weighted using employment numbers as weights.

^aToughness = Ratio of minimum wage to average wage in Council.

^bData are not reported in the New Earnings Survey for the Retail Trades—Food and Allied Council (Male and Female) for 1981 and Catering-Licensed Non-Residential (Male) in 1984 (growth rates are halved across adjacent years for these observations).

Figure 1 shows how the median toughness measure in our sample has changed over time. As can be seen, the system became less tough through the 1980s. This pattern is what we would expect given the Conservative Government's hostility to the Wages Council system, which resulted in failure to increase minimum wages in line with average earnings. Our empirical analysis considers the relationship between our toughness measure and each of two economic outcomes: wage dispersion and employment.

Minimum Wages and Wage Dispersion

For two reasons, it is important to check first to confirm that our measure of toughness is a suitable measure of the bite of the

Wages Councils. First, our measure may simply be an inappropriate indicator of the toughness of Wages Council regulation. Second, some commentators have expressed the view that the Wages Councils were ineffective, as their regulations were not strongly enforced. If that is true, a change over time in toughness, as shown by our measure, may have had little or no economic effects on the industries concerned.

One test of the suitability of our toughness measure is the following. Most, if not all, models of minimum wages would predict that as the minimum wage is raised, the toughness measure will rise and the distribution of earnings will become compressed. If our toughness measure is suitable, we would therefore expect to find a negative correlation

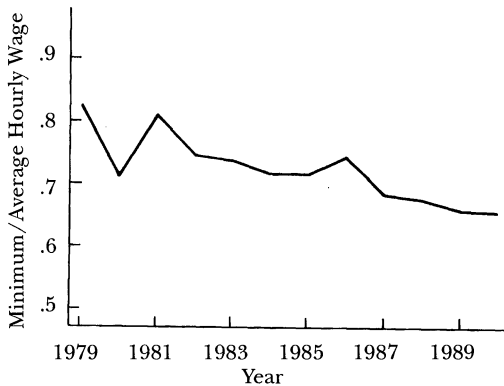


Figure 1. Median Toughness of Wages Councils' Minimum Wage Regulations, 1979-1990.

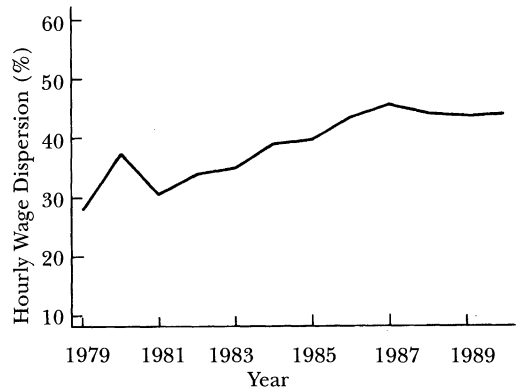


Figure 2. Median Hourly Wage Dispersion Among Industries Covered by Wages Councils, 1979-1990.

between toughness and the dispersion of earnings. The measure of dispersion that we use is based on the standard error of the estimate of average earnings, which is provided in the New Earnings Survey (see the Data Appendix for more details). Figure 2 presents data on the median measure of dispersion in each year. As can be seen, the distribution of earnings in the Wages Council sector became more unequal over the sample period.

Column 1 of Table 2 presents a simple regression of dispersion on toughness. The strongly significant negative coefficient on the toughness variable is a first indication that our measure of toughness is a suitable one. It should be remembered, however, that we are considering a period when earnings inequality increased across the economy, not just for those covered by Wages Councils. In addition, there may well be important cyclical effects on wage dispersion. Column 2 includes a trend to allow for a general rise in inequality, GDP growth to allow for cyclical effects, and dummy variables for gender and whether the Wages Council covers only manual workers. The coefficient on toughness is still estimated to be significantly negative. As a still stronger test, we included dummy variables for each individual Wages Council. These results are presented in column 3. The coefficient on toughness remains significantly negative. Finally, we estimated our model in first-differenced form and included dummies

for the different Wages Councils (which is equivalent to assuming that they have different trends in dispersion). This test is a very strong one, since any measurement error will be magnified by first-differencing, which will tend to increase the standard error on the coefficient on toughness. Yet, as shown in column 4, the coefficient on toughness is still estimated to be significantly negative.⁵

We conclude that our measure of toughness is a good measure of the bite of the Wages Councils in this period. We have also shown that the decline in the bite of the Councils has contributed to the rise in wage inequality in these industries.

Minimum Wages and Employment

We now turn to the employment effects of the Wages Councils. We clearly cannot hope to explain the level of employment in different Wages Councils in terms of the levels of the minimum wage. Many variables that cannot be included in our regressions account for lower employment levels in small Wages Councils (such as Coffin Furniture and Cerement Making) than in larger ones like the Retail Trades. Still, we might be able to ex-

⁵Using a robust regression estimator (which downgrades the importance of outlying observations) gave very similar results: in a specification comparable to column (4), the coefficient (standard error) was -0.407 (0.197).

Table 2. Wage Dispersion and Minimum Wages in U.K. Wages Councils, 1979–1990.
(Standard Errors in Parentheses)

Equation	Log of Wage Dispersion (1)	Log of Wage Dispersion (2)	Log of Wage Dispersion (3)	Change in Log of Wage Dispersion (4)
Constant	3.065 (0.033)	3.320 (0.106)	3.710 (0.133)	-0.049 (0.087)
Log Toughness	-1.451 (0.089)	-0.912 (0.137)	-0.395 (0.187)	-0.369 (0.201)
Trend		0.012 (0.005)	0.014 (0.004)	
GDP Growth		0.077 (0.667)	0.136 (0.552)	0.390 (0.518)
Female Council		-0.180 (0.041)	-0.312 (0.060)	
Manual Council		-0.057 (0.033)		
Wage Council Dummies Included	No	No	Yes	Yes
R ²	0.688	0.746	0.838	0.091
N	122	122	122	108

Note: The equation in the fourth column is estimated with all variables in first-differences. All other equations are estimated in levels.

plain changes in employment by changes in the toughness of minimum wage legislation. In particular, to control for Council specific fixed effects in our employment equations, we can estimate our models in first-differences.⁶

In column 1 of Table 3 we present the results of a simple regression of employment change on the change in toughness. The coefficient on toughness is somewhat imprecisely determined, but sizable and positive. The negative effect predicted by competitive models of the labor market is not observed in these data; indeed, we can formally reject the hypothesis that the coefficient is in the -0.1 to -0.2 range, which is the conventional wisdom in the U.S. time series studies cited by Brown et al. (1982). In column 2 the change in toughness variable is instrumented using the change in the real minimum wage as an

instrument. This procedure tests whether the observed employment effects come from variation in the minimum wage or, instead, from variation in the average wage. Again, the estimated coefficient is positive and very similar in magnitude to that reported in column 1. In column 3, which simply incorporates the real minimum, the coefficient is again positive, albeit slightly smaller.

In the remaining columns a number of extra variables are appended to the column 1 specification. In column 4 we include GDP growth to capture the effects of the aggregate economy and dummies for each Wages Council. As remarked above, this is quite a stringent test: specifying in first-differences allows for separate intercepts in each Council, and including the Wages Council dummies allows each Council to have its own trend in employment.⁷ Nevertheless, the coefficient on toughness remains positive, although slightly reduced in significance.⁸

⁶We first-difference instead of including separate Council intercepts to control for time-invariant unobservables ("within-groups") because the error term in the latter displayed serious first-order serial correlation. On the other hand, we were unable to reject the null hypothesis that the error term in the first-differenced equation was white noise.

⁷We also allowed a role for gender and manual dummies, but neither was significant.

⁸In a robust regression comparable to that in column 4, the toughness coefficient is somewhat larger

Table 3. Employment and Minimum Wages in U.K. Wages Councils.
(Standard Errors in Parentheses)

<i>Independent Variable</i>	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.006 (0.013)	-0.008 (0.014)	-0.008 (0.014)	-0.078 (0.101)	-0.112 (0.101)	-0.107 (0.098)
Change in Log Toughness	0.327 (0.225)			0.304 (0.234)		
Change in Log Toughness (Instrumented by Change in Log Real Minimum Wage)		0.277 (0.286)				
Change in Log Real Minimum Wage			0.219 (0.227)			
Change in Log Toughness (Catering)					0.986 (0.393)	
Change in Log Toughness (Retail)					0.689 (0.632)	
Change in Log Toughness (Clothing)					0.273 (0.583)	
Change in Log Toughness (Hairdressing)					-0.446 (0.379)	-0.451 (0.377)
Change in Log Toughness (Catering, Retail, and Clothing)						0.748 (0.288)
GDP Growth				0.294 (0.666)	0.659 (0.675)	0.691 (0.667)
Wages Council Dummies Included	No	No	No	Yes	Yes	Yes
R ²	0.020	—	0.009	0.087	0.153	0.144
Number of Observations	108	108	108	108	108	108

Finally, we investigated whether the employment effects differ across Wages Councils (as would be suggested by both competitive and monopsony models of the labor market). To this end, we classified our Wages Councils into four broad groups: Catering, Retail, Clothing, and Hairdressing. We then allowed the coefficient on toughness to differ across these groups. The results are presented in column 5.

For Catering, toughness has a significant positive association with employment; for Retail and Clothing the estimated effect is positive but insignificant; and for Hairdressing it is negative but insignificant.⁹ We are

unable to reject the null hypothesis that the coefficients on the change in toughness for Catering, Retail, and Clothing are equal (p-value of F-test = 0.596). Hence, column 6 reports a model imposing equality of these coefficients but allowing Hairdressing to have its own effect (the null hypothesis of equal coefficients for Hairdressing and the other industries can be rejected: p-value of F-test = 0.014). The coefficient on the change in log(toughness) is estimated to be positive and significant for Catering, Retail, and Cloth-

and also more precisely determined (at 0.682 with a standard error of 0.213). Hence, downgrading the influence of possible outliers appears to strengthen the positive nature of the reported results.

⁹The same pattern of results emerged if we only looked at the Wages Councils that remained in the sample in 1990: the coefficient (standard error) on the

change in log toughness in a change in log dispersion equation was -0.513 (0.209); the coefficient (standard error) on the change in log toughness in Catering in the change in employment equation was 1.142 (0.434); and the coefficients for Retail, Clothing, and Hairdressing were insignificant. Similarly, comparable estimates based on a balanced panel of Councils from 1982-1990 were -0.612 (0.206) for dispersion and 0.985 (0.482) for Catering in the employment change equation.

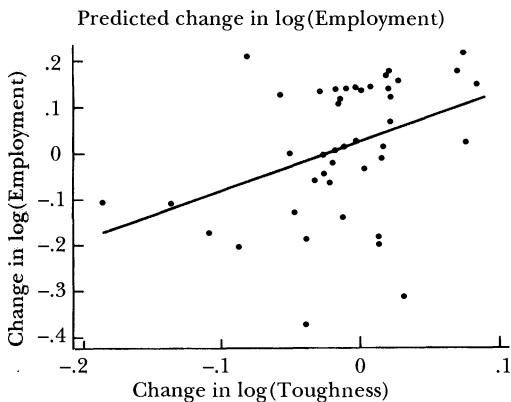


Figure 3. Changes in log(Employment) and log(Toughness) in Catering Between 1979 and 1990.

ing, and negative but statistically insignificant for Hairdressing.

This analysis provides no evidence that the activities of the Wages Councils acted as a restraint on employment in Britain in the 1980s.¹⁰ If anything, it is easier to make the argument that minimum wages were good for employment. This effect appears to be particularly strong in the catering industry, as can be seen most easily by plotting employment change against change in toughness for this sector (see Figure 3).

Monopsony: A Possible Explanation?

The U.S. studies that have reported findings similar to those reported here have offered little in the way of theoretical explanation. Card (1992a:52) said that his findings are clearly inconsistent with a conventional competitive model of the low-wage labor market. An

alternative model that is often raised in theoretical discussions of the minimum wage is one in which employers of low-wage workers have market power and act as monopsonistic purchasers of labor.

Katz and Krueger (1992:17) say that "a model in which the employers of low-wage workers are assumed to have market power and act as monopsonistic buyers of labor is potentially consistent with the findings presented." Many labor economists, however, are skeptical of the relevance of monopsony in modern labor markets. In this section we try to make a stronger case for the potential relevance of monopsony to modern labor markets.

A monopsonistic labor market is one in which an employer possesses some market power in setting wages, so that the supply of labor to the firm is a positive function of the wage paid. Profit maximization requires that the marginal product of labor be equated to the marginal cost of labor, which is above the wage (the average cost of labor). As is well known, minimum wage legislation may be able to raise both wages and employment, since a minimum wage may reduce the marginal cost of labor even though it increases the average cost. Employment is maximized if the minimum wage is set at what would have been the market-clearing wage if the labor market were competitive. Raising the minimum wage above this level would then reduce employment.

The crucial assumption in this model is that the supply curve of labor to the firm is not perfectly elastic. Why might it be inelastic? The traditional example of a monopsonistic labor market—the one described in most labor economics textbooks—is a company town where employment in a geographical area is dominated by one (or a few colluding) large employers. It is generally argued, however, that company towns have become increasingly rare as workers' access to transport has improved and given them a greater choice among employers, and it is further argued that most low-paid workers are now employed in small firms. Notwithstanding some more recent examples of monopsony that are sometimes given, such as the existence in many U.S. towns of a single hospital that provides the only employment

¹⁰We also carried out some other robustness checks. Following Neumark and Wascher (1992), we experimented with omitting the even-numbered years from the sample (to crudely reduce serial correlation problems in first-differenced models). The coefficient on log(toughness) remained positive, but the loss of half the sample meant it was also rather imprecisely determined. Second, we also included the log of toughness dated ($t - 1$) in the employment equation, but its inclusion did not alter the results qualitatively. It is clear that none of these additional checks produced a negative relationship between toughness and employment.

possibilities for nurses (Sullivan 1989), the general impression given is that monopsony is primarily of historical interest and is irrelevant to the analysis of modern labor markets.

In addition to traditional monopsony models, however, there are more sophisticated versions of the theory. The most popular version is probably that of dynamic monopsony. The ancestry of this theory can be traced forward from the work of Mortensen (1970) and Salop (1973-1979) to a more modern exposition in Burdett and Mortensen (1989). The basic idea of dynamic monopsony is that employers who pay higher wages face lower quit rates (since their workers are less likely to receive better offers from elsewhere) and find it easier to recruit new workers. Hence, there will be a positive relationship between the wage offered and the labor supply to the employer, which is, of course, the key distinguishing feature of the monopsony approach.

The implicit assumption underlying this approach is that workers have imperfect information about the job opportunities offered by different employers. In contrast, the competitive model presumes that workers possess perfect information, so that any employer who cuts wages beneath the market rate will instantaneously lose all its workers. In a dynamic monopsony model, such an employer also loses workers, but slowly. In contrast to traditional monopsony, modern monopsony is likely to be relevant in labor markets with many small employers, since information about job opportunities is apt to be less easy to find in such markets than in labor markets dominated by a few large employers. Hence, we believe modern monopsony may be relevant to contemporary labor markets.

In applying this kind of monopsony model to adult workers in the United Kingdom Wages Council sectors, it would be rash to conclude that a national minimum wage would raise employment in the whole economy. Although modern monopsony models suggest the supply curve of labor facing the individual employer (or industry) will not be perfectly elastic and that workers will receive wages beneath their marginal product, they do not predict that an appro-

priately designed minimum wage will necessarily have desirable employment consequences. First, employment gains will occur only if the economy-wide labor supply curve is not inelastic, and since the empirical evidence on this issue suggests that labor supply elasticity is higher for women than men (see Blundell and Walker 1988), any beneficial employment effects will be more likely to occur for women than for men. The evidence of Green, Machin, and Manning (1992) that employer-size wage effects are higher for women than men suggests, in terms of the Burdett-Mortensen model described above, a larger gap between wages and marginal products for women, and hence more scope for desirable employment consequences for women than for men from a minimum wage.

Second, if workers differ in their productivity, a minimum wage will lead to employment losses for those workers whose marginal productivity lies beneath the minimum wage. Whether such losses for these groups would be outweighed by the employment gains of those workers attracted into the labor market by higher wages is obviously a question of vital importance, but unfortunately one on which we have little evidence on which to base an answer. Since, however, under dynamic monopsony workers are paid less than their marginal product, it is likely that not all returns to increases in productivity are captured by workers, with the consequence that skill enhancement will have a low rate of return. The introduction of a minimum wage could ameliorate some of these problems, since the rise in wages would increase workers' incentive to increase their productivity by acquiring skills.

Third, it remains highly unlikely that modern monopsony is relevant to all sectors of the labor market. For example, where wage setting processes are based on formal mechanisms (in the union sector, for example), a minimum wage seems less attractive. In such a situation, as in the competitive case, the question of spillover effects arises. If a minimum wage raises wages and employment in the nonunion sector, then clearly the improvement in labor market opportunities for workers displaced from the union sector is likely to raise union wages.

Hence, although modern monopsony theory suggests that a minimum wage policy may raise employment, some important qualifications are necessary. In particular, the potential for desirable effects may differ considerably for different groups of workers and different sectors in the economy. The designers of a minimum wage policy should be very careful to recognize this fact. For example, in considering our empirical findings, one should recognize that the effects of the Wages Councils on the employment of adults (with which this paper has been concerned) may have been very different from their effects on the employment of young people.

Conclusions

We have looked at the effect of the U.K. system of minimum wage legislation, the Wages Councils, on adult employment and pay dispersion. We have found that the toughness of the regulation imposed by the Wages Councils declined in the 1980s, and that this change contributed to rising wage inequality in the covered industries. Contrary to conventional expectations, however—and consistent with findings of recent similar U.S. studies—we find no evidence that an increase in adult employment resulted from the decline in the effectiveness of the Wages Councils. On the contrary, adult employment appears to have *declined* as a result of the decreasing effectiveness of the Wages Councils, an effect that seems to be particularly strong in the catering industry. The current U.K.

government recently introduced legislation abolishing the Wages Council system, and one of its key arguments for doing so is that the system exerted a detrimental effect on employment. Our results suggest that there is no supportive evidence for this view and that abolition of the Councils may do no more than substantially increase wage inequality.

Our empirical findings are similar to those of some recent U.S. studies that are unable to detect any evidence that minimum wages have negative employment effects. If anything, our results are even more striking than those of the U.S. studies, because in some of our specifications we find that some of the Wages Council minimum rates were associated with higher employment. Also, unlike the U.S. researchers, we have outlined a possible theoretical explanation for these findings. Specifically, we have proposed that in low-wage labor markets such as the Wages Council sector, monopsony power may account for some of the observed positive relationship between minimum wages and employment. We have argued that one should not think in terms of traditional monopsony based on large employers, but rather in terms of a modern version of monopsony in which labor market frictions make the supply of labor to an individual firm at least somewhat inelastic. The congruity of a monopsony explanation with the empirical results reported here, as well as with some similar recent U.S. research, suggests that the implications of monopsony deserve more attention than they have recently received.

DATA APPENDIX

The data we used were constructed in the following way.

Toughness. This variable is computed as the minimum basic hourly rate as set by the Wages Council divided by average hourly earnings (excluding overtime) in the relevant Wages Council. For years before 1986, when the Wages Councils often set different basic rates for different types of workers, we used the rate that was quoted in various Incomes Data Services Reports, which was generally the lowest adult rate. Information on the average hourly earnings comes from the New Earnings Survey.

Dispersion. The New Earnings Survey provides stan-

dard errors of the estimates of average earnings as a percentage of their means. We multiplied these figures by the square root of the sample size to obtain a measure of the dispersion in earnings.

Employment. The New Earnings Survey reports the sample sizes on which its estimates are based. Thus, for each year we have information on the number of workers reported by employers to be covered by different Wages Councils. Since the New Earnings Survey is a random 1% sample of all workers, this value would be an accurate measure of employment in the Wages Council industries if non-response were random and employers were always aware of the relevant Wages

Council. Those conditions are unlikely to be met; but because we use employment growth rates, any fixed effects in non-response or incorrect response will be netted out.

We also checked our employment numbers with those reported for comparable industry groups in the Department of Employment Historical Supplements. The industry employment series we compared with the Wages Council employment series from the New Earn-

ings Survey were (a) Retail trades (Food) [SIC 6410] for women with Retail Trades (Food and Allied) for women (correlation coefficient = 0.9078); (b) Clothing [SIC 453/456] for women with Clothing Manufacture for women (correlation coefficient = 0.7990); and (c) Hotels and Catering [SIC 66] for men with Catering Licensed (Residential and Non-residential) for men (correlation coefficient = 0.6919).

REFERENCES

- Bazen, Stephen. 1990. "On the Employment Effects of Introducing a National Minimum Wage." *British Journal of Industrial Relations*, Vol. 28, No. 2, pp. 215-26.
- Blundell, Richard, and Ian Walker. 1988. "Labour Supply Incentives and the Taxation of Family Income." *Economic Policy*, No. 6 (April), pp. 133-62.
- Brosnan, Peter, and Frank Wilkinson. 1988. "A National Minimum Wage and Economic Efficiency." *Contributions to Political Economy*, Vol. 7 (March), pp. 1-48.
- Brown, Charles, Curtis Gilroy, and Andrew Kohen. 1982. "The Effect of the Minimum Wage on Employment and Unemployment." *Journal of Economic Literature*, Vol. 20, No. 2, pp. 487-528.
- Burdett, Kenneth, and Dale Mortensen. 1989. "Equilibrium Wage Differentials and Employer Size." Unpublished paper, University of Essex.
- Canning, David, and Roger Tarling. 1985. "A Report on the Department of Employment's Study 'Wages Floors in the Clothing Industry, 1950-81.'" Paper Commissioned by National Union of Tailors and Garment Workers.
- Card, David. 1992a. "Do Minimum Wages Reduce Employment? A Case Study of California, 1987-1989." *Industrial and Labor Relations Review*, Vol. 46, No. 1 (October), pp. 38-54.
- _____. 1992b. "Using Regional Variation in Wages to Measure the Effects of the Federal Minimum Wage." *Industrial and Labor Relations Review*, Vol. 46, No. 1 (October), pp. 22-37.
- Craig, Christine, Jill Rubery, Roger Tarling, and Frank Wilkinson. 1982. *Labour Market Structure, Industrial Organisation, and Low Pay*. Cambridge: Cambridge University Press.
- Department of Employment. 1988. "Wages Councils: 1988 Consultative Document."
- Green, Francis, Stephen Machin, and Alan Manning. 1992. "The Employer Size Wage Effect: Is Monopsony the Explanation?" Centre for Economic Performance, London School of Economics Discussion Paper No. 79.
- Gregg, Paul. 1990. "Policy Options Under a Labour Government: A National Minimum Wage." *National Institute Economic Review*, No. 134 (December), pp. 60-63.
- _____. 1992. "From the Sweatshop to the Dole Queue: The Possible Effects of a National Minimum Wage on Employment and Unemployment." Paper presented to Employment Service Conference on Unemployment in Context, March.
- Katz, Lawrence, and Alan Krueger. 1992. "The Effect of the Minimum Wage on the Fast Food Industry." *Industrial and Labor Relations Review*, Vol. 46, No. 1 (October), pp. 6-21.
- Low Pay Unit. 1983. "Who needs the Wages Councils?" Pamphlet No. 24. Low Pay Unit: London.
- Machin, Stephen, and Alan Manning. 1991. "Dynamic Monopsony in the British Labor Market." Mimeo, Centre for Economic Performance, London School of Economics.
- Manning, Alan. 1992. "The Equal Pay Act as an Experiment to Test Theories of the Labour Market." Mimeo, Centre for Economic Performance, London School of Economics.
- Morgan, Phillip, Don Paterson, and Robert Barrie. 1985. "Wage Floors in the Clothing Industry, 1950-1981." Department of Employment Research Paper No. 52.
- Mortensen, Dale. 1970. "A Theory of Wage and Employment Dynamics." In E. S. Phelps et al., eds., *Microeconomic Foundations of Employment and Inflation Theory*. New York: Norton, pp. 167-211.
- Neumark, David, and William Wascher. 1992. "Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wages Laws." *Industrial and Labor Relations Review*, Vol. 46, No. 1, pp. 55-81.
- Salop, Stephen. 1973. "Wage Differentials in a Dynamic Theory of the Firm." *Journal of Economic Theory*, Vol. 6, No. 4, pp. 321-44.
- _____. 1979. "A Model of the Natural Rate of Unemployment." *American Economic Review*, Vol. 69, No. 1, pp. 117-25.
- Sullivan, Daniel. 1989. "Monopsony Power in the Market for Nurses." *Journal of Law and Economics*, Vol. 32, Supplement, pp. S135-S178.