

BRITISH UNIONS IN DECLINE: DETERMINANTS OF THE 1980s FALL IN UNION RECOGNITION

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This examination of establishment-level data from the Workplace Industrial Relations Surveys of 1980, 1984, and 1990 shows that the proportion of British establishments (that is, workplaces in both the private and public sector) that recognized unions for collective bargaining over pay and working conditions fell by almost 20% between 1980 and 1990. Largely accountable for this decline was a much lower rate of union recognition in establishments founded in the 1980s than in previous years, particularly in the private sector. Citing these findings, as well as recent structural changes in employment in the British labor market (such as the shift from manufacturing to services, from manual to non-manual employment, and from full-time to part-time work) and a government that continues to enact anti-union legislation, the authors foresee no reversal of unions' decline in the 1990s.

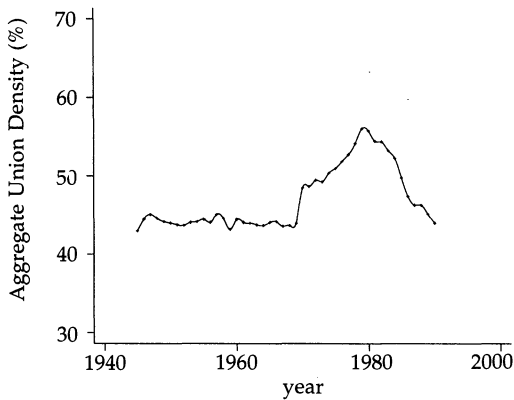
Declining unionization was one of the most significant features of the British labor market in the 1980s. All conventional measures of union presence and power

vividly demonstrate the extent of this decline. The proportion of British establishments (that is, workplaces in both the private and public sector) that recognized manual or non-manual trade unions for collective bargaining over pay and working conditions fell by almost 20% (from 0.67 to 0.54) between 1980 and 1990 (Millward et al. 1992); the proportion of workers covered by a collective agreement fell from 0.71 in 1984 to 0.54 in 1990 (Millward et al. 1992); aggregate union membership fell from 13.2 million in 1980 to 9.9 million by

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The data and STATA computer programs used in this paper will be supplied to other researchers on request to Amanda Gosling, Institute for Fiscal Studies, 7 Ridgmount Street, London, WC1E 7AE, U.K. The Workplace Industrial Relations Survey data are available from the Economic and Social Research Data Archive at the University of Essex.

Figure 1. Aggregate Union Density, 1945–1990.



Note: Aggregate union density is the number of union members divided by the number of employees.

Sources: Bain and Price (1980); Price and Bain (1983); Waddington (1992).

1990; and aggregate union density fell from 54% to 38% in that decade (and has continued to fall since 1990). The longer time series profile of aggregate union density (defined as the number of union members divided by the total work force), pictured in Figure 1, shows that declines in the 1980s completely reversed the gains achieved in the 1970s. Union density in 1990 stood at its lowest level in 30 years.

Mason and Bain, in a 1993 survey of trends in union activity in the British labor market, evaluated and appraised the relatively large literature that has attempted to explain long-term trends in unionization and the smaller body of research that has analyzed the sharp decline of the 1980s. Most of these studies have tended to emphasize the role of business cycle and legislative factors. Few British studies have analyzed microeconomic data on workplaces or individuals at different points in time, and most have concentrated on individual union membership or workplace membership density as the variable to be explained. In this paper we use microeconomic data from the three British establishment-level Workplace Industrial Relations Surveys of

1980, 1984, and 1990 to document and explain the sharp 1980s union decline. Our study, unlike the earlier ones, focuses on establishment-level recognition of trade unions for the purposes of determining pay and conditions of employment as the measure of unionization. By empirically weighing the relative importance of between-group changes (for example, due to changes in work force composition that occur between sectors of the economy such as manufacturing or services) compared to within-group changes in unionism (such as decreases in unionization that occur within specific sectors), we attempt to develop an econometric model of the determination of union recognition status, and, finally, to discover whether the observed changes are temporary or cyclical (and thus may be reversed in the future) or if they reflect a more permanent trend.

The answer to the question of whether any particular explanation of the union decline stands out as clearly superior is extremely important, both for trade unions and for employers, and has implications for the overall functioning of the labor market. It is well established that unions affect a range of economic outcomes (wages, employment, productivity, and profits) and that unionized and non-unionized labor markets differ in wage, employment, and profit determination. Hence, whether or not companies have trade unions in their workplaces is important for their corporate performance. Unions also affect other outcomes. The 1980s saw a significant rise in wage inequality in the United Kingdom (see Gregg and Machin 1994), and unions have traditionally been seen as a force for pay equality. (See Gosling and Machin 1995 for some recent British evidence based on the data used in this paper.) If the observed union decline is not secular and reflects a long-term trend, then we would presumably, in the absence of other offsetting effects, see continued growth in the inequality of the pay received by different workers. It is therefore important to evaluate the reasons for union decline and to stress that the 1980s decline in unionization is interesting not only for its own sake

*Table 1. Descriptive Statistics on Union Recognition, 1980–1990:
Proportion of Establishments with Recognized Unions for Manual and Non-Manual Workers.*

Sector	1980		1984		1990	
	Proportion of Establish- ments with Recognized Unions	Number of Establish- ments	Proportion of Establish- ments with Recognized Unions	Number of Establish- ments	Proportion of Establish- ments with Recognized Unions	Number of Establish- ments
	Manual Workers					
All Establishments	0.61	1780	0.62	1853	0.48	1831
Public Sector	0.84	611	0.91	758	0.78	561
Private Sector	0.50	1169	0.44	1095	0.37	1270
Private Sector Manufacturing	0.69	703	0.56	580	0.44	616
Other Private Sector	0.38	466	0.38	515	0.31	654
	Non-Manual Workers					
All Establishments	0.50	1934	0.54	2010	0.43	2058
Public Sector	0.91	702	0.98	825	0.84	630
Private Sector	0.29	1232	0.28	1185	0.25	1429
Private Sector Manufacturing	0.28	702	0.26	592	0.23	630
Other Private Sector	0.30	530	0.30	593	0.26	798

Notes:

Calculated from the 1980, 1984, and 1990 Workplace Industrial Relations Surveys. Weighted proportions (weights are from WIRS, based on the Census of Employment three years prior to the survey, to allow for the deliberate oversampling of larger establishments).

Numbers differ in 1980 from those reported in the WIRS reference books (Millward and Stevens 1986; Millward et al. 1992) due to different treatment of missing values (assigned to non-recognition in the books, but treated as missing here).

The numbers of establishments are the unweighted numbers.

but also for what it implies about the nature of and reward for work in the future.

What Happened to Union Recognition in Britain Between 1980 and 1990?

The Workplace Industrial Relations Surveys

The three Workplace Industrial Relations Surveys of 1980, 1984, and 1990 are the most widely used and commonly cited surveys on industrial relations issues in Britain. They are nationally representative surveys of establishments that employ at least 25 workers, the sampling frame being based on the Census of Employment dated three years before each survey.¹ In recent years,

¹Of course, the 25 employee cut-off point excludes a sizable (considerably less unionized) proportion of

the data have been extensively used by both labor economists and industrial relations researchers to examine a variety of issues.²

Establishment-Level Unionization, 1980–90

Table 1 uses the establishment-level data from the surveys to document the decline of union recognition for both manual and non-manual workers across all establishments and in different sectors of the economy (the public sector, private sector

aggregate employment, and this should be borne in mind when interpreting the results reported in this paper.

²See Millward et al. (1992) for an extremely comprehensive review of these data sources and Millward (1992) for a summary of papers based on the surveys up to 1992.

Table 2. Descriptive Statistics on Union Density and Coverage, 1980–1990.

Sector	Proportion of Workers Who Are Union Members (Proportion of Full-Time Workers 1980; All Workers 1984 and 1990)			Proportion of Workers Covered by Collective Bargaining	
	1980	1984	1990	1984	1990
All Establishments	0.62	0.58	0.48	0.71	0.54
Public Sector	0.73	0.80	0.72	0.95	0.78
Private Sector	0.64	0.56	0.48	0.64	0.51
Manufacturing					
Other Private Sector	0.33	0.30	0.27	0.41	0.33

Sources: Daniel and Millward (1983); Millward and Stevens (1990); Millward et al. (1993).

The union coverage question was not asked in 1980.

manufacturing, and non-manufacturing).³ Between 1980 and 1990 the proportion of establishments that recognized trade unions for manual workers fell by around 13 percentage points or 21% of the 1980 mean (from 0.61 to 0.48); non-manual recognition fell by about 7 percentage points or 15% (from 0.50 to 0.43). Declines in the proportion of establishments with recognized unions are observed between 1980 and 1990 for all the disaggregated groups reported in the table for both manual and non-manual workers. The sharpest decline appeared within the sector in which unions have traditionally been strongest—manual workers in manufacturing. Among establishments in that category, union recognition suffered a massive 25 percentage point decline, or a 34% fall compared to the 1980 mean.

³The use of recognition as an indicator of union presence has been common in empirical studies by labor economists using the Workplace Industrial Relations Surveys; see the several papers on wages by Blanchflower and Oswald or Stewart (examples are Blanchflower and Oswald 1990; Stewart 1990) or the various papers on the effects of unions on non-wage outcomes (for example, Blanchflower et al. 1991; Machin and Wadhvani 1991). This variable also has the virtue of being exogenous, in the sense that it is determined probably at or around the date at which an establishment is set up. We elaborate much more on the historical feature of the determination of recognition status below.

As remarked above, we view recognition as the key indicator of union presence.⁴ For comparative purposes, however, Table 2 also reports figures on establishment-level union density between 1980 and 1990 and union coverage between 1984 and 1990 (data on coverage were not available in the first survey). Although these figures differ in some ways from those in Table 1 (for example, the 1984–90 fall in coverage in the public sector suggests a sharper decline than that shown by figures in Table 1, a result that is largely due to the removal of collective bargaining machinery for teachers and nurses),⁵ the overall pattern looks very similar to that delineated by the recognition variables in Table 1: declines in unionization have been marked, particularly in private sector manufacturing, the traditional stronghold of private sector unionism.

Decomposition of Changes in Union Recognition Status

It is well known that the 1980s witnessed a continuation of various postwar shifts in employment composition—from manufacturing to services, manual to non-manual employment, full-time to part-time work, male to female employment, and so on. In general, employment has tended to shift toward those areas in which unions have

⁴For example, in an earlier piece (Disney et al. 1993a; see also Gregg and Naylor 1993) the variation in union density across establishments was shown to be driven principally by the existence of union recognition. One should note that the British situation regarding union membership arrangements does differ from that in the United States. In the United States there are few (if any) cases in which workers are union members if an employer does not recognize a union as the workers' bargaining agent. In Britain, on the contrary, individuals may be union members in a non-recognition situation and may be nonunion members where a union is recognized for collective bargaining purposes.

⁵Pay Review Bodies were introduced in the 1980s to replace collective bargaining for some groups of workers in the public sector. They were introduced for nursing staff, midwives, health visitors, and professions allied to medicine (more than half of the National Health Service employees) in 1983 and for schoolteachers in 1987 (see Millward et al. 1992; Elgar and Simpson 1993).

traditionally been less well represented (see, for example, Green 1992).

The importance of declines within the three groups in Table 1 relative to declines arising from compositional changes in the nature of the work force can be easily evaluated. One can decompose the aggregate change in the proportion of establishments with recognized unions, say ΔX , as

$$(1) \quad \Delta X = \Delta X_1 \bar{f}_1 + \Delta X_2 \bar{f}_2 + \Delta X_3 \bar{f}_3 + (\bar{X}_1 - \bar{X}_3) \Delta f_1 + (\bar{X}_2 - \bar{X}_3) \Delta f_2,$$

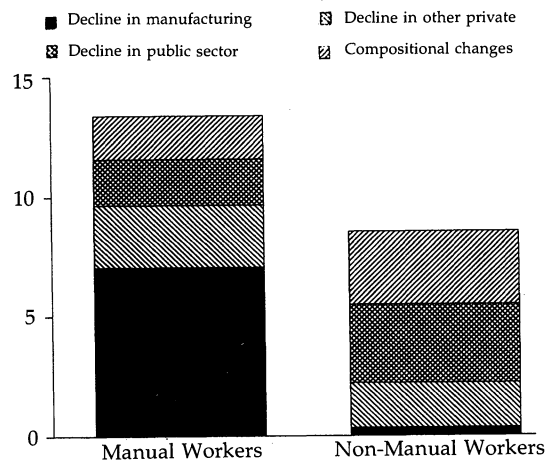
where a bar denotes a 1980–90 mean, X_i is the proportion of establishments with recognized unions among the establishments in group i , and f_i is the relative frequency of group i among all establishments. The first three terms relate to within-group changes and the last two terms reflect between-group, across-sector shifts.

The results of the decomposition are shown in Table 3 and pictured in Figure 2. Half of the decline in manual recognition is explained by the decline inside the manufacturing sector. For manual workers, compositional changes among these three broad sectors explain less than 15% of the total 1980 to 1990 change. For non-manual workers, both the decline within the public sector and the declining share of public sector employment in total employment are important, but no single effect dominates.

Simple Logit Models of Union Recognition Status

The nature of the decomposition results is further illuminated by the simple logit

Figure 2. Components of the 1980–90 Decline in Union Recognition.



Note: Decomposition (reported in Table 2) of the 1980 and 1990 change in union recognition (X) as:

$$\Delta X = \Delta X_1 \bar{f}_1 + \Delta X_2 \bar{f}_2 + \Delta X_3 \bar{f}_3 + (\bar{X}_1 - \bar{X}_3) \Delta f_1 + (\bar{X}_2 - \bar{X}_3) \Delta f_2$$

where X_i is the proportion of establishments with recognition in group i (i = manufacturing, service, public sector) and f_i is the relative frequency of group i . Compositional changes are the last two terms in the decomposition (the between-group changes).

models of union recognition that we report in Tables 4a and 4b. These are purely descriptive econometric models with which we attempt to disentangle the relative importance of potential determinants of union recognition status. In addition to the sectoral classifications used in the decomposition, we treat recognition as a function of establishment size and work force characteristics, since they are likely to deter-

Table 3. Decomposition of the Aggregate Decline in Union Recognition, 1980–1990.

Percentage Point Change in Recognition Resulting from:	Manual Trade Union Recognition: Percentage Point Change (Percentage of Total Change)		Non-Manual Trade Union Recognition: Percentage Point Change (Percentage of Total Change)	
	Decline Within Manufacturing	6.39	(50)	1.10
Decline Within Services	2.85	(22)	1.76	(24)
Decline Within Public Sector	1.87	(15)	2.42	(33)
Compositional Changes (Between Sectors)	1.71	(13)	2.04	(28)
Total Changes 1980–1990	12.79	(100)	7.32	(100)

Based on decomposition described in text.

Table 4a. Logit Estimates of the Determinants of Manual Union Recognition, 1980–1990.
(Standard Errors in Parentheses)

<i>Independent Variable</i>	<i>1980</i>	<i>1984</i>	<i>1990</i>	<i>POOLED</i>
Constant	-2.141*** (0.269)	-2.230*** (0.256)	-2.021*** (0.236)	-2.384 (0.153)
Public Sector	2.276*** (0.207)	3.035*** (0.210)	2.311*** (0.188)	2.501*** (0.114)
Private Sector Manufacturing	0.814*** (0.185)	0.538*** (0.205)	0.259 (0.159)	0.493*** (0.098)
Establishment Is over 25 Years Old (20 Years Old in 1990 Survey)	0.392*** (0.147)	0.376*** (0.142)	0.813*** (0.127)	0.564*** (0.079)
50–99 Employees	0.584*** (0.203)	0.538*** (0.205)	0.430** (0.230)	0.507*** (0.116)
100–199 Employees	1.010*** (0.217)	1.301*** (0.222)	0.915*** (0.205)	1.042*** (0.121)
200–499 Employees	1.611*** (0.239)	1.271*** (0.223)	1.687*** (0.221)	1.526*** (0.130)
500–999 Employees	2.630*** (0.348)	2.096*** (0.276)	2.330*** (0.266)	2.285*** (0.164)
1000 or More Employees	3.419*** (0.444)	3.278*** (0.363)	2.266*** (0.245)	2.754*** (0.175)
Manual Proportion	3.172*** (0.304)	2.917*** (0.283)	1.912*** (0.240)	2.545*** (0.154)
Part-Time Proportion	-1.897*** (0.378)	-1.596*** (0.347)	-1.788*** (0.301)	-1.762*** (0.192)
Foreign-Owned	-0.757*** (0.264)	-0.293 (0.225)	-0.167 (0.180)	-0.264*** (0.112)
Single Establishment	-1.346*** (0.194)	-0.663** (0.270)	-0.972*** (0.180)	-1.004*** (0.110)
1980 Survey	—	—	—	0.507*** (0.096)
1984 Survey	—	—	—	0.465*** (0.095)
Number of Establishments	1715	1785	1727	5227
Log-Likelihood	-614.147	-648.581	-785.213	-2083.715
H ₀ : $\beta_{\text{private}} = \beta_{\text{public}}$	$\chi^2(11)=20.52$ P-value=0.05	$\chi^2(11)=47.01$ P-value<0.01	$\chi^2(11)=29.34$ P-value=0.01	$\chi^2(13)=94.93$ P-value<0.01
H ₀ : $\beta_{\text{manuf}} = \beta_{\text{non-manuf}}$ (in private sector model)	$\chi^2(10)=12.78$ P-value=0.38	$\chi^2(10)=31.34$ P-value<0.01	$\chi^2(10)=13.49$ P-value=0.31	$\chi^2(12)=42.85$ P-value<0.01
H ₀ : $\beta_{\text{wirs80}} = \beta_{\text{wirs84}} = \beta_{\text{wirs90}}$				$\chi^2(24)=71.55$ P-value<0.01

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

mine the expected costs and benefits of unionization (for example, if one effect of unions is to give workers access to collective voice, this effect will be more important in larger establishments, where there is a greater need for formal channels of communication). Furthermore, establishment age can be expected to affect union status as a function of life cycle, attrition, and changing circumstances at set-up date.

These influences are discussed in more detail below. We thus include a dummy variable indicating whether the establishment is over 25 years old (20 in 1990).

Several important results emerge from consideration of the regressions in Table 4. First, the cross-sectional decline in union recognition between 1980 and 1990 is not fully explained by the estimated models. In the pooled sample for both manual work-

Table 4b. Logit Estimates of the Determinants of Non-Manual Union Recognition, 1980–1990.
(Standard Errors in Parentheses)

<i>Independent Variable</i>	<i>1980</i>	<i>1984</i>	<i>1990</i>	<i>POOLED</i>
Constant	-0.681*** (0.213)	-1.178*** (0.221)	-1.284*** (0.193)	-1.311*** (0.128)
Public Sector	2.932*** (0.202)	4.972*** (0.397)	2.858*** (0.188)	3.318*** (0.125)
Private Sector Manufacturing	0.069 (0.162)	0.179 (0.167)	0.150 (0.150)	0.124 (0.091)
Establishment Is over 25 Years Old (20 Years Old in 1990 Survey)	0.173 (0.130)	0.317** (0.137)	0.670*** (0.121)	0.408*** (0.074)
50–99 Employees	0.395** (0.199)	0.484** (0.219)	0.193 (0.202)	0.356*** (0.118)
100–199 Employees	0.572*** (0.198)	0.854*** (0.221)	0.654*** (0.199)	0.674*** (0.117)
200–499 Employees	1.716*** (0.214)	1.412*** (0.226)	1.484*** (0.205)	1.543*** (0.123)
500–999 Employees	2.055*** (0.252)	2.043*** (0.258)	1.908*** (0.234)	1.969*** (0.141)
1000 or More Employees	3.449*** (0.331)	3.237*** (0.335)	2.032*** (0.226)	2.679*** (0.155)
Manual Proportion	-0.382* (0.228)	0.089 (0.238)	0.051 (0.195)	-0.031 (0.125)
Part Time Proportion	-0.802** (0.359)	-0.827** (0.361)	-1.107*** (0.283)	-0.980*** (0.187)
Foreign-Owned	-0.621*** (0.213)	-0.298 (0.193)	-0.345** (0.159)	-0.356*** (0.099)
Single Establishment	-0.992*** (0.179)	-0.696*** (0.263)	-1.143*** (0.193)	-0.965*** (0.122)
1980 Survey	—	—	—	0.288*** (0.088)
1984 Survey	—	—	—	0.428*** (0.088)
Number of Establishments	1856	1935	1925	5716
Log-Likelihood	-779.858	-693.140	-891.757	-2394.089
H ₀ : $\beta^{\text{private}} = \beta^{\text{public}}$	$\chi^2(11)=9.23$ P-value=0.72	$\chi^2(11)=4.11$ P-value=0.97	$\chi^2(11)=17.54$ P-value=0.14	$\chi^2(13)=49.37$ P-value<0.01
H ₀ : $\beta^{\text{manuf}} = \beta^{\text{non-manuf}}$ (in private sector model)	$\chi^2(10)=40.85$ P-value<0.01	$\chi^2(10)=60.51$ P-value<0.01	$\chi^2(10)=30.98$ P-value<0.01	$\chi^2(12)=107.73$ P-value<0.01
H ₀ : $\beta^{\text{wirs80}} = \beta^{\text{wirs84}} = \beta^{\text{wirs90}}$				$\chi^2(24)=78.67$ P-value<0.01

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

ers and non-manual workers, the estimated coefficients on the 1980 and 1984 sample dummies are large, statistically significant, and positive, indicating that the trend in unionization is not entirely explained by the decline in the relative share of public sector establishments, manufacturing establishments, and the other controls.

Second, in most specifications there are differences between private sector manu-

facturing and private sector non-manufacturing, as well as between the public sector and the private sector, in the determinants of recognition, as the χ^2 parameter stability tests at the base of the tables show. For manual recognition, the estimated coefficient on the dummy variables indicating private manufacturing status shows a sharp decline from 0.814 (marginal effect = 0.143) to 0.259 (marginal effect = 0.056)

between 1980 and 1990, reinforcing the conclusion that there have been large declines *within* manufacturing that are not explained by the independent variables included in the logit models.⁶

Third, establishment age is found to be an extremely important determinant of recognition in all years (for manual workers), and its effect is clearly increasing over time (for both groups of workers). One should be a little careful here, since the definition of the age variable differs across years,⁷ but there does appear to be an important shift. For example, in the manual specifications in Table 4a, the marginal effect associated with the coefficient on age more than doubles, rising from 0.07 in 1980 to 0.18 in 1990.⁸ Hence, between 1980 and 1990 there is a large *ceteris paribus* increase in the probability that unions are recognized in older establishments.

The Importance of the Establishment Age Effect

Modeling Procedure

Establishment age will be a determinant of the probability of recognition if there is some inertia in the determination of union status or if older establishments are consistently different from newer ones. It will also be important as a time-related variable if, for one reason or another, the organizing ability of unions or the ability of employers to resist unions shifts over time.

⁶In logit models marginal effects are computed as $\beta P(1 - P)$, where P is the mean of the dependent variable and β is the relevant estimated coefficient.

⁷The precise wording of the survey question is as follows: in 1980 and 1984, "How long ago did this establishment first engage in its main activity?"; in 1990, "How long has this establishment been operating here at this address?" The range of responses also differs. In 1980 and 1984, responses were banded into 1–3 years, 3–5 years, 5–10 years, 10–25 years, and 25 or more years. In 1990, responses were continuous up to 20 years and then open-ended as 20 or more years.

⁸For non-manual recognition the comparable rise in the marginal effect associated with age demonstrates an even sharper increase—from 0.04 to 0.16.

Existing evidence suggests that recognition is usually a once-and-for-all decision made at some point early in the lifetime of the establishment. Changes in recognition status in existing establishments remained uncommon even in the 1980s. Evidence suggests that instances of derecognition were almost unheard of up to about 1984, but some such cases occurred in the mid- to late 1980s (see Claydon 1989).⁹ In the 1990 Workplace Industrial Relations Survey, managers of nonunion workplaces were asked if they had had a recognized union in 1984, and only 2% of the private sector sample stated that they had. Beaumont and Harris (in the present issue of the *Review*) examine the panel element of the 1984 and 1990 surveys (which covers 537 trading sector establishments) and state that "the great majority of establishments did not change their union status in the period 1984–90." Similarly, although the company-level survey of Gregg and Yates (1991) reported a number of partial recognition changes (that is, derecognition for a single skill group in an establishment, or in a single establishment of a multi-establishment company), they found very few cases of complete derecognition. Smith and Morton (1993) confirmed this finding and attributed it to the significant fixed costs associated with changing the union status of establishments.

If the union recognition decision is indeed once-for-all in nature, what are the reasons for variations in recognition over time? Three broad mechanisms through which establishment age can affect union recognition status suggest themselves:

Life cycle effects. If at any time the probability that a nonunion establishment starts to recognize a union is greater than zero and recognition is a once-and-for-all decision, then the cumulative probability of recognition must be higher in older establishments. A greater share of newer estab-

⁹Also, Geroski, Gregg, and Desjonquieres (1995) recently provided evidence suggesting that this may have accelerated in the recession of the early 1990s, at least in the large firms they surveyed.

lishments in the total stock of establishments in the 1980s than in previous years would therefore result in lower union recognition.

Attrition effects. If there are unobservable factors that influence both the expected lifetime of a workplace and unionization, or if the expected life span of an establishment is affected by union status, those links will be picked up by the coefficient on age. For example, it may be that "unions kill some firms" via their rent-seeking activities (Freeman and Kleiner 1993)—a possibility that is discussed in more detail below.

Time-varying covariates. The likelihood of union recognition responds not to the age of the establishment per se, but to the prevailing conditions in the economy and the industry when the establishment was set up. Thus an establishment set up in the 1960s is more likely to recognize a union than one set up in the 1980s not because it is 20 years older but because the conditions in the 1960s were more favorable to unionization than were the conditions in the 1980s.

The expected future path of unionization depends crucially on which of these factors is dominant. Under the first two mechanisms the level of unionization is literally determined by the age structure of establishments. If the last mechanism is of most importance, then given the nature of the legislative and macroeconomic climate and trends in employment (all of which seem set to continue into the 1990s), new establishments will be much less likely to become unionized and the observed decline in recognition can be expected to continue into the 1990s.

Analysis of the three Workplace Industrial Relations Surveys suggests that time-varying covariates are a potentially important determinant of the relationship between union status and establishment age. First, because the actual question in the surveys from which the age variable is constructed concerns the age of the workplace at its current address (see footnote 7, in which the question is reproduced), it includes establishments that have moved (to larger premises, for example). In the 1990

survey questions were asked to determine which establishments were not in fact new establishments but were movers, and among these movers whether the move took place with the work force intact, and so on. The relationship between union recognition and age is not significantly different among these three groups. Thus, while moving may enable management to re-evaluate its industrial relations strategy, there appears to be no mechanism by which it should change the expected life path of the establishment—which would be necessary if the first two effects discussed above were dominant.

The second reason for the claim that what matters is the date that the establishment was set up rather than its age is demonstrated below. In the 1990 survey, respondents were asked to give the exact age, in years, of the establishment (up to 20 years old), and thus we know the exact year in which the workplace was "born." If attrition or life cycle effects were dominant, we would expect a smooth (if not linear) mean relationship between age and recognition. This is simply not the case. The age-dated paths of average recognition proportions plotted in Figure 3 mirror the aggregate union density series in Figure 1 but, the overall downward trend apart, do not display a smooth relationship.

Our final reason for underscoring the set-up date of the establishment rather than its age is the statistical importance of age of establishment-dated regressors in econometric models of the determinants of recognition status, a matter to which we turn next. Rather than just including age in a recognition equation, we next evaluate the importance of various variables dated to the time of establishment set-up. This procedure is attractive because it gives us information on what determines union status in the first instance and draws out the historical aspect of the recognition decision.

Model Specification

What time-specific factors are likely to affect the probability of recognition? Three groups of time-varying factors (which need

Figure 3. Trends in Age-Dated Union Recognition, 1970–1990.



Notes: The year definition is based on responses to the establishment age question from the 1990 Workplace Industrial Relations Survey.

The reported profiles are 5-year moving averages of weighted data.

Means of smoothed union recognition in establishments set up in the 1970s are: manual manufacturing, 0.50; manual non-manufacturing, 0.26; manual public sector, 0.82; non-manual manufacturing, 0.25; non-manual non-manufacturing, 0.19; non-manual public sector, 0.90.

Means of smoothed union recognition in establishments set up in the 1980s are: manual manufacturing, 0.25; manual non-manufacturing, 0.19; manual public sector, 0.74; non-manual manufacturing, 0.16; non-manual non-manufacturing, 0.15; non-manual public sector, 0.82.

not necessarily be mutually exclusive) can be identified:

Economic factors. Union status can be seen to be the outcome of a bargain, implicit or explicit, between management and unions at or around the time the establishment was set up. Product market structure at the time of the bargain will influence the relative costs and benefits to unions and

management of achieving or resisting unionization and thus condition the level of resources they will be prepared to sacrifice to achieve the desired outcome (see Abowd and Farber [1990] or Disney et al. [1992] for an extended discussion of these issues). It is also likely that there are factors that determine the balance of power in the labor market and the probability of new

instances of union recognition. One obvious labor market structure variable reflecting this balance of power is the extent of unionization among comparable establishments.

We use two variables in our empirical work to model product and labor market structure at establishment set-up date. We model the product market by including a measure of industry-level profits per head (quasi-rents per worker)¹⁰ at the date of set-up (as in our earlier paper, which looked only at private sector manufacturing; see Disney et al. 1992, 1993b). This measure proxies the expected rents over which the union and employer can bargain and hence the expected gain (loss) from unionization. The relationship with recognition is expected to be non-linear (see Disney et al. 1992). Unfortunately, data on this variable are not available for non-manufacturing or for the public sector. Our labor market structure variable, industry union density at set-up date, is, however, available.

Legislative factors. The Conservative government elected in 1979 introduced a range of anti-union legislative measures. Although it is hard to ascribe an effect to legislation on the basis of time effects (though that is exactly what Freeman and Pelletier [1990] did), we can attempt to evaluate the effects of legislation by considering whether or not a post-1979 shift in the probability of recognition occurred. Specifically, we incorporate a dummy variable equal to one if the establishment was set up after 1979 in our logit regressions of the determinants of recognition.¹¹

¹⁰This variable was mapped in at 2-digit industry level from the relevant Census of Production and is defined as (sales – material costs – wage costs)/number of workers. Note that capital costs, for data matching reasons, are not deducted. We did, however, experiment with netting out capital costs, and found that doing so made little difference to the results. These additional tests are discussed below.

¹¹Rather than simply use this “Established in the 1980s” variable, we also included a set of dummy variables indicating the year of set-up in the 1980s (except for 1989, a year in which not one new establishment had recognition). These results (available on request) pointed to a negative effect in each year after 1979.

(3) *Macroeconomic factors.* Many earlier labor economics and industrial relations studies have emphasized the role of the business cycle in shaping union status. We experiment with several macroeconomic indicators at the date of set-up: specifically, we allow potential roles for GDP growth, unemployment, and inflation.

Estimates of Establishment-Level Union Recognition Equations

Table 5 examines the importance of these time-dated variables in affecting manual recognition. It is not surprising, given the time series profile of establishment age-dated recognition illustrated in Figure 3, that the variable indicating whether or not the establishment was set up in the 1980s proves extremely important. Establishments that were set up in the 1980s are significantly less likely to recognize trade unions. As noted above, it is hard to reconcile this result with the life-cycle and attrition explanations of the importance of establishment age. Hence, much of the focus in Table 5 is on the importance of this 1980s effect in conjunction with the other time-dated variables.

Three specifications are reported in Table 5 for each sector. The first is a simple logit regression of manual union recognition on the “Established in the 1980s” variable; the second includes the age-dated economic factors relating to labor and product market structure; and the third includes those macroeconomic factors found to be important over and above the other effects. In the private manufacturing and non-manufacturing equations, the 1980s effect is strongly negative and statistically significant. The magnitude of the effect is sizable: private sector manufacturing establishments set up in the 1980s were, *ceteris paribus*, some 30% less likely to recognize manual unions than other private sector manufacturing establishments (column 2); within non-manufacturing the corresponding probability was about 18% (column 5).¹² These results drive home the point

¹²Despite the fact that one of the included controls is a single-site dummy variable, it is also possible that

Table 5. Estimates of the Determinants of Manual Union Recognition in 1990
Including Time-Dated Regressors.
(Logit Coefficients; Asymptotic Standard Errors in Parentheses)

Independent Variable	Private Manufacturing			Private Non-Manufacturing			Public Sector		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Established in the 1980s	-1.743*** (0.219)	-1.504*** (0.306)	-1.438*** (0.309)	-0.718*** (0.202)	-0.746*** (0.242)	-0.745*** (0.243)	-0.375 (0.343)	-0.256 (0.441)	-0.469 (0.454)
Industry Union Density at Time of Set-Up	—	1.229*** (0.353)	1.280*** (0.357)	—	1.066*** (0.199)	1.077*** (0.200)	—	-0.196 (0.538)	-0.189 (0.537)
Industry Quasi-Rents per Head at Time of Set-Up	—	2.858** (1.385)	2.683** (1.388)	—	—	—	—	—	—
Industry Quasi-Rents per Head at Time of Set-Up Squared	—	-1.032** (0.469)	-0.987** (0.468)	—	—	—	—	—	—
GDP Growth	—	—	0.160 (0.105)	—	—	0.171* (0.105)	—	—	-0.354 (0.226)
Log-Likelihood	-313.30	-230.31	-229.08	-337.33	-264.24	-262.78	-174.98	-116.57	-114.93
Number of Establishments	584	584	584	500	500	500	442	442	442
$\chi^2(1)$ Test for Inclusion of Aggregate Unemployment	—	—	0.20	—	—	0.86	—	—	1.50
$\chi^2(1)$ Test for Inclusion of Aggregate Inflation	—	—	0.04	—	—	1.75	—	—	3.12
Marginal Effect for Established in the 1980s	-0.351	-0.303	-0.266	-0.178	-0.184	-0.184	-0.044	-0.030	-0.047

Note: The second two specifications for each group include the following controls: establishment size dummies; manual, part-time proportions; whether U.K.-owned; single-site; 10 regional dummies.

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

made above that much of the union decline was taking place *within* sectors. Unions were finding it harder to achieve recognition status both where they used to be strong (private sector manufacturing) and in the newer sorts of establishments that were (and are) becoming increasingly typical of the British labor market (private sector non-

manufacturing establishments). Given this evidence, it is hard to imagine this decline being arrested in the 1990s.

In the private sector specifications the other set-up-dated variables perform well. In manufacturing the industry quasi-rents per head variables show the stable, quadratic relationship that we have reported in earlier work (Disney et al. 1992, 1993b).¹³ Similarly, industry unionization at time of

effects in newly founded single independent establishments differ from those in establishments that are part of a multi-establishment enterprise (we thank a referee for this comment). Estimating separate equations comparable to column (1) of Table 5 for single-site establishments and for establishments that belong to a multi-plant organization produced very similar marginal effects associated with the "Established in the 1980s" variable. Hence, the failure to organize new establishments seems to hold for new firms and for newly set up establishments in existing firms.

¹³As noted above (footnote 10), the quasi-rents variable does not net out capital costs. Although we could not get a capital stock series to perfectly match the industry classification of the quasi-rents variable, we did construct a rents variable that nets out capital costs, albeit at a slightly higher level of aggregation. Effects remained much the same as in Table 5 when this variable was used; more experiments of this kind are reported in Disney et al. (1993b).

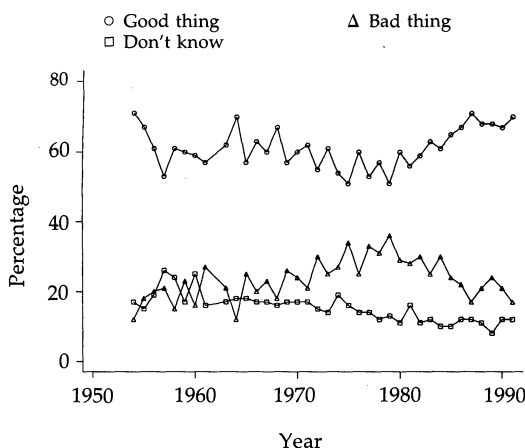
set-up has a strong positive impact on the likelihood of manual recognition. It is hard to find any important role for macroeconomic factors. The most marked effect over and above the other time-varying controls comes from an aggregate GDP growth variable, and its coefficient only suggests a very weak pro-cyclical pattern in the ability of unions to achieve recognition status in the private sector (other macroeconomic variables were statistically insignificant, as the Likelihood Ratio statistics at the base of the table demonstrate).

In the public sector it proves harder to isolate any important effects. This difficulty is at least partially due to the fact that, unlike in the other sectors, in the public sector unionized bargaining is still the dominant mode of pay determination. The coefficient on the 1980s variable is estimated to be negative but insignificant and, if anything, the GDP growth variable suggests a counter-cyclical pattern. Overall, it appears, not surprisingly, that the time series pattern of public sector recognition is driven by other factors. Competitive tendering and subcontracting by nonunion employers, for example, may well be the principal factors shaping the more modest fall in public sector unionism.

Evaluation of Results and Consideration of Alternative Hypotheses

Our results point to an important fall in private sector union recognition that is linked to a failure to achieve recognition status in newer establishments. Several factors could lie behind this phenomenon. The factors that have been emphasized as potential explanations of union decline in the United States are compositional changes, unfavorable shifts in public opinion toward unions, increased management opposition, and reduced demand for union representation. Although the issue is by no means fully resolved, the U.S. work seems to rule out compositional changes and increases in anti-union sentiments, with the debate falling between those who emphasize increased opposition of employers (Freeman 1986; Freeman and Kleiner 1990)

Figure 4. General Attitudes Toward British Unions, 1954–1992.



Source: Gallup political and economic index (published by London: Social Surveys).

and falling demand (Farber and Krueger 1993).

In the U.K. case it seems that one can also rule out the compositional changes hypothesis, for at least two reasons. First, the results in Table 3 suggest that between-sector shifts are relatively unimportant. Second, many of the compositional shifts that are supposed to be bad for unions (such as increased female participation, an increased share of non-manual workers, and service sector employment) occurred in both the 1970s, when unionization increased, and the 1980s, when it decreased.

The notion that attitudes toward unions became more unfavorable in the 1980s also receives no support. The annual Gallup political opinion poll asks those surveyed the following question: "Generally speaking, do you think trade unions are a good thing or a bad thing?" Figure 4, which plots the responses to this question between the mid-1950s and 1990, shows that the percentage of respondents who stated that they perceived unions to be a good thing increased during the 1980s.

What of the other explanations? Data limitations and the identification issue

Table 6. Managerial Attitudes to Unions in Establishments Where There Were No Union Members Present in 1990.

Independent Variable	In Favor of Unions	Not in Favor of Unions	Neutral	Number of Establishments (unweighted)
All Establishments	0.020	0.318	0.663	476
Public Sector	0.000	0.082	0.918	5
Private Manufacturing	0.008	0.462	0.531	136
Other Private Sector	0.024	0.270	0.706	335

Source and notes: Calculated from the 1990 Workplace Industrial Relations Survey. Based on managerial responses in establishments with no union members. Weighted proportions.

make it impossible for us to address the hypothesis that the individual-level demand for unionism has fallen. It is, however, possible to shed some light on the possibility of management opposition by considering the following question asked of the managers of establishments that did not have any union members in the 1990 Workplace Industrial Relations Survey:

How would you describe management's general attitude toward trade union membership among employees at this establishment? Is management

....in favour of trade union membership

....not in favour of it

....or neutral about it?

Table 6 reports descriptive statistics on the responses to this question. Some 46% of managers in private manufacturing establishments reported that they were not favorably disposed to unions, compared to about 32% across all establishments. Since the largest declines in union recognition were in manufacturing, this result clearly points in the right direction. (Of course, we would also like to know what if any changes occurred in managerial attitudes, but unfortunately the question concerning attitudes toward unions was only asked in the 1990 survey.)

In Table 7 we examine the hypothesis that managers were more likely to have unfavorable attitudes toward unions in establishments set up in the 1980s than in establishments set up earlier. We estimate a simple logit model with a dependent vari-

able coded 1 if managers were not in favor of unions and 0 otherwise. The "Established in the 1980s" variable is included as an independent variable. We report separate specifications for private manufacturing and non-manufacturing and report models that include the set of control variables used for the recognition models in Table 5.

Among private-sector manufacturing establishments, there is some evidence that managerial attitudes toward unions were less favorable in establishments that were set up in the 1980s. Despite the small sample size, the coefficient on "Established in the 1980s" is estimated to be positive and significant (at the 10% level). The marginal effect in column (1) suggests, *ceteris paribus*, that managers were some 23% more likely to have an unfavorable view of unions in newly set-up establishments than in establishments that were set up in earlier years. Hence, increased managerial opposition to unions seems important in the sector where the largest declines in recognition status occurred. Effects are, however, insignificantly different from zero in private services.

A final hypothesis, that "unions kill firms" because the cost-increasing aspect of union rent-seeking activity ultimately drives union firms out of business (Freeman and Kleiner 1993), can also briefly be examined since a subset of the 1984 survey establishments were interviewed again to construct the panel element of the 1990 survey. Some of the trading sector establishments in the

1984 survey were re-sampled and the survey investigators identified 87 plant closures (Millward et al. 1992).¹⁴ The proportion of these with manual union recognition was .480, as compared to .491 for the population of trading sector establishments; for non-manual recognition, the corresponding proportions were .291 for the closed establishments and .338 for the population (see Machin 1995 for more details and econometric evidence on this question). There is clearly no evidence here supporting the hypothesis that the likelihood of closure was positively correlated with union recognition. If there were such evidence, it would cast doubt on our thesis that the failure to organize new establishments set up in the 1980s was an important component of union decline, since differences in exit rates would bias such a conclusion.

Concluding Remarks

We have documented the dramatic decline in union presence observed in the British labor market through the 1980s and have evaluated the reasons for this change. Our focus has been on trends in union recognition, and we have used data from the three Workplace Industrial Relations Surveys of 1980, 1984, and 1990. Our paper differs from earlier British work because of our interest in changes over time at the microeconomic level and because of the way in which we have examined time-specific effects.

Some strong results emerge from the analysis. Whereas much of the earlier (mainly time-series) work stressed the role of business cycle or legislative factors, it is also significant that much of the decline in union recognition has been due to falls within specific sectors of the economy. Hence, the 1980s saw big declines in union presence both in industries in which unions have traditionally been strong (private sector manufacturing) and in those in which

Table 7. Logit Estimates of Managers' Unfavorable Views on Unions in 1990. (Logit Coefficients; Asymptotic Standard Errors in Parentheses)

<i>Independent Variable</i>	<i>Private</i>	<i>Private</i>
	<i>Manufacturing</i>	<i>Non- Manufacturing</i>
	(1)	(2)
Established in the 1980s	0.916* (0.450)	-0.049 (0.319)
Controls Included	Yes	Yes
Log-Likelihood	-80.827	-148.170
Number of Establishments	133	252
Marginal Effect for Established in the 1980s	0.227	-0.010

Notes: Controls are those included in the recognition models in column (2) of Table 5. There are too few observations to estimate a public sector equation.

they have been relatively weak (private sector services). We have found that the probability of union recognition depended importantly on the nature of the product and labor market at the time an establishment was set up. In particular, perhaps our key new finding is that union recognition became significantly harder to achieve in new establishments in the 1980–90 time period than it was in earlier years, particularly in the private sector, and it is this change, rather than derecognition of unions in existing establishments, that drove the downturn in unionization. Within private sector manufacturing, traditionally a stronghold of union activity, an increase in unfavorable managerial attitudes toward trade unions in the 1980s can explain some but not all of this fall.

Our findings paint a bleak picture for the future ability of unions to organize new establishments, at least in the private sector (more detailed analysis of the public sector is certainly warranted, but beyond the scope of this paper). Given the trends observed in the British labor market in the 1980s, the introduction of various pieces of union-restricting legislation—which is continuing into the 1990s with, for example, the

¹⁴We are very grateful to Neil Millward for providing us with the serial codes for the 87 establishments that closed between 1984 and 1990.

1993 Trade Union Reform and Employment Rights Bill—and the increased importance of newer establishments, we see

no reason why the dramatic declines in union presence of the 1980s should not continue through the 1990s.

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