The Economic and Social Review, Vol. 33, No. 1, Spring, 2002, pp. 101-108

Foreign Ownership and Wages in British Establishments

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Abstract: This paper uses the 1990-1998 Workplace Employee Relations Survey (WERS) panel data set to show that foreign establishments in Britain pay 13 per cent higher wages than domestic establishments. However, the differential disappears when we control for the skill structure within establishments.

I INTRODUCTION

Do foreign establishments pay higher wages than domestic establishments and does this still apply after accounting for the skill structure and use of technology? We test these hypotheses using the Workplace Employee Relations Survey (WERS, see Department of Trade and Industry, 1999, and Millward *et al*., 2000) panel over 1990-1998, containing information on ownership, skill-structure as well as the use of microelectronic technology for British manufacturing and services establishments. The combination of these

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characteristics in WERS is unique for UK-based data sets. For instance, both the ABI Respondents Database and the OneSource database cannot be used for the present analysis in this chapter. Relevant previous studies using WERS include Blanchflower (1984) and Driffield (1995). Millward *et al*. (2000) provide an overview of the developments of the WERS survey since 1980. Te Velde (2001) discusses the relationship between foreign ownership and the adoption of technology and skill structure of establishments using WERS.

II FOREIGN OWNERSHIP AND WAGES: THE ECONOMIC CONTEXT

Multinationals must possess firm-specific assets that allow them to bear the costs of setting-up a plant in a foreign location (Dunning, 1993). Firms are assumed to be able to exploit the firm-specific asset only by foreign direct investment and not by exports. At the set-up of the foreign affiliate, the firm-specific asset is usually embodied in a one-shot innovation of technique or product, leading firms to internalise the advantage rather than licence other firms.

The firm-specific asset would lead to the use of superior technology and hence the use of a higher quality skill-mix and higher average pay. There is a large literature on determinants of average pay in establishments (see e.g. Millward *et al*., 2000, Chapter 6). This paper focuses specifically on whether foreign-owned establishments pay higher wages than domestically owned establishments, after allowing for size, union membership, industry, technology and the skill structure.

The size of establishments is usually found to be an important determinant of average pay. Large firms pay more for observationally equivalent workers than small firms (Polachek and Siebert, 1993). The arms length relationship between management and workers prevents managers accurately assessing worker performance, so that it becomes optimal to the firm to pay a higher (efficiency) wage to raise the efforts of workers. We should also control for unionisation. A large literature suggest that unions can raise the pay of workers (Millward *et al*., 2000).[1] We include industry dummies as large and persistent wage differentials are present across industries (Krueger and Summers, 1988), and multinationals usually locate in higher value-added industries (Davies and Lyons, 1991).

[1] We focus on the effects of unionisation rates, not union strength.

III FOREIGN OWNERSHIP, SKILLS AND WAGES IN BRITISH ESTABLISHMENTS; RECENT EVIDENCE

Various studies have examined the effects of foreign ownership in the UK. Oulton (1998) used surviving plants in the ARD over 1973-1993. He shows that foreign-owned establishments have higher value-added per worker. For non-US foreign-owned establishments, the difference is not significant after controlling for the higher levels of physical and human capital. However US foreign-owned establishments have an additional advantage, over and above higher levels of physical and human capital. Oulton argues that this is due to superior management or better process technology and products.

Griffith (1999) uses the ARD to investigate the effects of foreign ownership in the UK motor vehicle and parts industry. She finds that foreign-owned establishments (especially German owned) hire workers with higher productivity levels and pay them correspondingly more. Alternatively, as Griffith argues, foreign-owned establishments pay their workers more and thus get more out of them: the efficiency wage hypothesis. Another finding is that foreign-owned firms operate at a point along the same technology frontier as domestically-owned establishments, but using more capital inputs; total factor productivity differences are small and sometimes insignificant, depending on specifications used.

Girma *et al*. (2000) use a firm-level panel data set, OneSource, of almost 4,000 UK manufacturing firms for 1991-1996. They find that foreign firms pay 5 per cent higher wages after allowing for industry, size and productivity effects, with the American firms having the largest differential and the Japanese the smallest. However, they can only speculate on the reason, as their database does not contain information on the skill-structure.

Forth and Millward (2001) find that foreign-owned establishments pay 9 per cent more on average than UK owned firms, controlling for a host of other variables. They use the WERS employee cross-section data set for 1998, whilst this paper tests whether and why foreign establishments pay their workers higher wages using the 1990-1998 employers panel survey.[2]

IV DATA

The Workplace Industrial Relations Survey (WIRS) is a series of four national surveys of workplaces, 1980, 1984, 1990 and 1998, containing the nature of employment relations at work. WIRS is regarded as the

[2] Technology is specified only in the panel survey; the panel survey context also allows us to look at continuing and starting/stopping foreign establishments.

authoritative portrait of the contours of industrial relations in the workplace across the economy (Cully and Marginson, 1995). In 1998, WIRS changed to WERS, the Workplace Employee Relations Survey. The 1998 WERS panel survey re-interviewed a random selection of workplaces that responded to the cross-section WIRS survey of 1990.[3] With a response rate of 82 per cent this yielded 846 continuing workplaces with 25 or more employees between 1990-1998 (Millward *et al*., 2000).

In the survey, foreign ownership involves at least 50 per cent of the control or ownership of an establishment. There is information in the location of the headquarters if an establishment is not UK owned: US/Canada, EU country, elsewhere in Europe (outside EU), or elsewhere in the world. There are eight different skill groups. Within manual workers, we distinguish between unskilled, semi-skilled and skilled manual workers. Within non-manual workers we distinguish between clerical/administrative/secretarial workers; supervisors and foremen; junior technical and professional workers; senior technical and professional workers; and middle and senior managers. The percentage of workers belonging to unions, the unionisation rate, is used to measure labour market institutions potentially affecting pay. The technology measure is the sum (up to 11) of micro-electronic technologies in use.

The 1990-1998 panel survey reports on 846 establishments from a survey of 2000+ in 1990 that survived in 1998. Of the 846 establishments, 580 are private, of which we can identify 560 with respect to ownership in both years. Within the sample, foreign ownership has become more important over time. At the 1990 interview there were 98 foreign-owned establishments (FOE) by 1998 this number has increased to 137. Even so, there is more going on than these numbers suggest: 57 became foreign owned over 1990-1998, 18 became domestically owned (DOE). 80 continued to be foreign owned, and 405 continued to be domestically owned.

V EMPIRICAL RESULTS

We are interested in the effects of foreign ownership, parameter β, in the following equation

$$y_i = \alpha + \beta\, FOR + \gamma' Z_i + \varepsilon_i \tag{1}$$

where i = establishment $i = 1,\ldots,487$;[4] Z_i is a $K \times 1$ vector of controls; FOR is

[3] The sample for the 1990 survey was taken from the Census of Employment in 1987. The sampling universe comprises all workplaces in Britain with more than 25 employees, except in agriculture, forestry and fishing.

[4] The number of establishments for which we have data on all variables.

0/1 dummy for foreign ownership and y_i is the dependent variable (average pay for establishment i) and γ is a $K \times 1$ vector of parameters and ε_i an error term. We use sample weights in estimation[5] (this is now common in analyses of WERS; see Purdon and Pickering, 2001, on sample weights), and hence do not report econometric specification tests.

We focus on the panel survey for 1990-1998, by examining the effects on pay of foreign ownership, size, industry, unionisation rate, skill groups and technology adoption. Table 1 provides a summary table of the use of computing facilities and the share of non-manual workers in establishments by ownership structure for the whole economy. Foreign-owned establishments use more computing facilities and employ more non-manual workers than domestic establishments.

Table 1: *Computing Facilities and Skill-Structure in Private British Establishments (1998)*

	Computing Facilities	*Share of Non-Manual Workers*
All establishments	3.73	0.48
Continuing domestic establishments	3.67	0.45
Establishments becoming foreign owned	3.81	0.68
Establishments becoming domestic owned	3.12	0.50
Continuing foreign establishments	4.51	0.57
Foreign owned in 1998	4.17	0.63

WERS 1990-1998 panel survey; using sample weights supplied by WERS panel survey.

Table 2 presents the estimation results. The dependent variable is the log of the gross average pay for full-time workers in 1998. In the first column, we find that FOEs pay on average 13 per cent more than DOEs. This pay differential is significant for continuing FOEs, but not for establishments that have become foreign owned over 1990-1998 (column 2). The biggest pay differential (18 per cent) arises for establishments with headquarters in the US/Canada (column 3), consistent with previous evidence.

[5] The WERS sample is stratified in that workplaces of different size and in different industries have different probabilities of being selected into the final sample. The probabilities are known and in estimation we use the (approximately) inverse of these probabilities as weights, thus obtaining results that are representative of the economy as a whole. Since we use the panel survey, we use the panel sample weights provided by the WERS panel survey.

Table 2: *Foreign Ownership and Average Pay in Private British Establishments (1998)*

	Log (pay)	*Log (pay)*	*Log (pay)*	*Log (pay)*	*Log (pay)*
Foreign	0.13			0.16	0.033
	(2.02)*			(2.40)*	(0.61)
Continuing foreign establishments		0.19			
		(2.30)*			
Establishments becoming foreign owned		0.67			
		(0.83)			
Establishments becoming domestic owned		0.11			
		(0.98)			
US/Canada FOEs			0.18		
			(2.15)*		
EU FOEs			0.12		
			(1.05)		
Europe (not-EU) FOEs			0.07		
			(0.41)		
Other foreign FOEs			0.12		
			(2.30)*		
Log(Size)	0.03	0.03	0.03	–0.01	0.05
	(1.21)	(1.20)	(1.25)	(–0.22)	(2.25)*
Unionisation rate	0.05	0.06	0.05	0.04	0.13
	(0.69)	(0.75)	(0.67)	(0.55)	(0.06)*
Use of computing facilities				0.05	
				(4.00)*	
Share of semi-skilled manual workers					0.031
					(0.41)
Share of skilled manual workers					0.19
					(1.62)
Share of non-manual clerical/ administration/ secretarial workers					0.40
					(3.34)*
Share of non-manual foremen/ supervisors					0.04
					(0.10)
Share of junior technical/ professional workers					0.22
					(1.79)**
Share of senior technical/ professional workers					0.79
					(4.45)*
Share of middle/senior managers					1.22
					(6.17)*
Industry controls	Yes	Yes	Yes	Yes	Yes
No. of observations	487	487	487	487	487

Robust t-statistics between parentheses. * (**) indicates significant at 5 per cent (10 per cent) level;. WERS 1990-1998 panel survey; survey (SVYREG) estimation using sample weights supplied by the WERS panel survey. Dependent variable is log of average gross earnings per year for full-time employees.

The pay differential remains after including the technology measure (column 4). If the technology measure relates to productivity it would provide evidence that FOEs pay higher wages after controlling for productivity. But when we control for skill proportions (final column), the foreign-ownership dummy becomes insignificant, while various skill proportions are significant. This indicates that FOEs pay more on average partly because they employ a more skilled workforce. However, we should mention that the WERS cross-section employee survey 1998 does provide evidence for a wage premium in foreign owned firms even when controlling for skill level.

VI CONCLUSIONS

We have utilised the 1990-1998 WERS panel data set to examine whether foreign establishments in Britain pay higher wages than domestic establishments. We find that there is indeed a pay premium of 13 per cent. The pay premium is strongest for US and Canadian owned establishments and for establishments that do not experience changes in the (foreign) ownership structure. However, the pay premium largely disappears when we control for the skill structure within establishments. Further research should indicate whether the results are robust to include other pay determinants such as UK-based multinationals.

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