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ORIGINAL ARTICLE

From monopoly to voice effects? British workplace unionism and productivity performance into the new millennium

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Abstract

Britain has featured prominently in debates about unionism and productivity. This article suggests a recent revolution in the productivity effect of British unionism. A thorough review of extant evidence at various levels of aggregation indicates that whatever the broader cost to employee welfare and well-being, the hollowing and erosion of workplace unionism under Thatcherism delivered a one-off productivity dividend. However, by the turn of the millennium, extant Workplace Employment Relations Survey (WERS) analysis shows that workplace unionism, where it remained, was no longer robustly linked to poorer productivity performance. Our private sector analysis of WERS2011 confirms this, while our analysis of the WERS2004–2011 panel indicates that stronger workplace unionism now positively promotes private sector productivity. A thorough contemplation of the shifting concomitants of modern British unionism suggests a variety of processes which may underlie our striking panel findings, underscoring the suggestion that there has been a revolution in British unionism's productivity implications, but also indicating mechanisms

which may underlie positive productivity effects of joint regulation already apparent in other countries.

1 | INTRODUCTION

Although it would be difficult to argue that its productivity implications are the defining impact of unionism or joint regulation, there has been keen interest in this effect internationally (e.g. Metcalf, 2003; Mueller & Stegmaier, 2017; Vernon & Rogers, 2013). Freeman and Medoff's (1984) distinction between monopoly and voice effects has been seminal, with 'monopoly' essentially synonymous with harmful, and 'voice' with favourable, union effects on productivity performance (see, e.g. Booth, 1995; Bryson et al., 2005). The British experience has long featured prominently in this literature (see, e.g. Addison & Belfield, 2001; Cameron, 2003; Denny, 1997; Fernie & Metcalf, 1995; Gregg et al., 1993; Machin, 1991; Nickell et al., 1992; Pencavel, 2004), and its interpretation has been the subject of particularly furious debates, most famously between David Metcalf (1989; 1990) and Peter Nolan (Nolan, 1996; Nolan & Marginson, 1990), in a manner reflecting the intense politicization of the issue in 1980s Britain.

Through and after the Second World War, British governments were broadly supportive of unionism, but Thatcherism brought a deliberate assault motivated by the neo-liberal notion that unionism damaged economic performance, and specifically productivity (e.g. Metcalf, 1989; 1990). The 1979–97 Conservative Thatcher/Major governments brought a state-led transformation of the national context of workplace unionism through profound legislative change and government determination to assert control where it was the employer, alongside the development of mass unemployment (Pencavel, 2004). Under the ('New') Labour Blair/Brown governments of 1997–2010, the broad ideological and legislative climate in the UK became at least less unambiguously hostile to unionism; the establishment of the statutory recognition procedure, with its direct and larger shadow effects, was particularly positive (Gall, 2010). Reforms under the Conservative Cameron/May/Johnson governments have been limited. Overall, the shift in the political backdrop to UK unionism has been dramatic.

Moreover, the 1980s and 1990s brought a particular intensification of product market competition in the UK, due to domestic reforms, including extensive privatization and contracting out (e.g. Pencavel, 2004). Intensified product market competition reduces the rents which unions may identify and extract, rendering their context of operation less comfortable (Brown et al., 2009; Metcalf, 2003).

Certainly, British unionism has struggled to retain purchase, particularly in the (expanded) private sector, though it has stabilized in more recent years. The severe erosion of unionism and joint regulation of the 1980s and 1990s gave way in the new millennium to a bottoming out. This was expressed, for example, in movements in union density, as well as collective bargaining coverage and the (closely related) extent of recognition of unions for collective bargaining purposes (e.g. Forth & Bryson, 2015; van Wanrooy et al., 2013). Meanwhile, the intensification of union mergers from the 1980s has more recently given way to rather more stability (e.g. Waddington, 2006, Figure 1). Indeed, British unionism has settled around a rather more 'general' structure, with, most notably, the 2007 formation of Unite forming a union crossing both the skill and status divides which have traditionally segmented British unionism (see, e.g. Vernon & Rogers, 2013). In the international context, both the extent of the erosion of unionism and joint regulation (see OECD

& AIAS, 2021) and the extent of merger activity (see Waddington, 2006) are unusual, particularly to the turn of the millennium.

In this context, a thorough reassessment of the general or typical productivity effect of British unionism is of great interest. This is particularly the case given that, as we shall see, extant analyses, most particularly at the workplace level, tend to be cross-sectional, testing the linkages between unionism and productivity performance given a range of controls.[1] However, the most recent Workplace Employment Relations Survey (WERS) panel – WERS2004–2011 – permits panel analysis that addresses the biases due to enduring, or time-invariant, (unobserved) workplace heterogeneity which may affect cross-sectional estimates. Moreover, the WERS2004–2011 panel also allows a particularly subtle examination of the productivity implications of workplace unionism for the UK, allowing consideration of the possibility that its effects depend on the conjuncture of formal recognition for collective bargaining purposes and the sheer strength of unionism captured by (workplace-level) union density. This allows for an analysis of interest not only within the confines of UK debates but also internationally.

The present article thus first carefully reviews the existing evidence on the productivity effects of British unionism, beginning with studies deploying data other than the Workplace Industrial/Employment Relations Surveys (WIRS/WERS), before considering studies deploying WIRS/WERS. It then presents a new analysis of the WERS2004 and 2011 cross-sections and of the WERS 2004–2011 panel to provide new evidence on the union productivity effect in the private sector. The panel analysis indicates that stronger workplace unionism promotes productivity performance in the UK. As we elaborate, this appears not just a novel finding, but also a novel effect, characteristic of British unionism in the new millennium. The appropriate interpretation of this striking finding is then carefully considered in light of broader evidence on the shifting concomitants of British unionism. This highlights a variety of plausible mechanisms which may underlie novel positive productivity effects of stronger British unionism. It also indicates mechanisms which may underlie the positive productivity effects of unionism or joint regulation already apparent in other countries.

2 | BACKGROUND LITERATURE: THE PRODUCTIVITY EFFECTS OF BRITISH UNIONISM

2.1 | The catch-up consensus: The productivity benefits of the hollowing and erosion of unionism under Thatcherism

The early studies on the productivity effects of British unionism relied on data at the firm, industry or national level, using exclusively objective measures of productivity. These studies are summarized in Table 1. For a start, there are only a few micro- (i.e. firm-level) studies examining the link between British unionism and productivity *levels* in the 1970s and 1980s. Prominent reviews of evidence on this relationship (e.g. Booth, 1995; Metcalf, 1989; 1990) rest heavily on Machin (1991), who finds that unionism – variously measured – is not significantly linked to lower productivity in small or medium-sized firms, but only in firms of over 1000 employees. These constitute the bulk of employment in his sample, as Metcalf (1990) stresses, but they number only 14 firms (Machin, 1987, provides the raw numbers). Overall, this evidence is thus a thin thread on which to base a conclusion of negative union productivity effects, as Nolan and Marginson (1990) also argue.

In the absence of convincing direct evidence about the effect of enterprise-level unionism on productivity *levels*, much emphasis has been accorded (e.g. Booth, 1995; Pencavel, 2004) to two

TABLE 1 Unionism and productivity – firm-, industry- and national-level studies

Study	Sample	Productivity measure	Measure of unionism	Key findings
Machin (1991)	Panel of 52 British engineering firms, 1978–1982	Real value added	(1) Union presence index (combining measures of union density, existence of closed-shop arrangements and multi-unionism); (2) dummy for existence of closed-shop arrangements	Unionism negatively linked to productivity only in large firms (≥1000 employees)
Nickell et al. (1992)	Panel of ~100 UK manufacturing companies, 1975–1986	Change in real value of sales (and change in real value added)	Proportion of manual employees covered by a union collective agreement	Initial unionism positively linked to productivity growth in 1979–1984; possibly negatively linked in 1975–1978
Gregg et al. (1993)	Panel of 328 UK companies, 1984–1989	Change in real value of sales	Union recognition (and changes in it)	Initial unionism not significantly linked to productivity growth in 1984–1987; positive link in 1988–1989, particularly among companies where full or partial derecognition occurred
Denny (1997)	Panel of 54 British manufacturing industries, 1973–1985	Change in real value added	Union coverage	Unionism not significantly linked to productivity growth in the 1970s; negative link in the 1980s, although not always significant
Cameron (2003)	Quarterly time-series of UK manufacturing, 1959–1995	Total factor productivity	Proportion of full-time male manual employees covered by collective agreements	Unionism negatively linked to productivity (but not always significantly so)
Cameron et al. (2005)	Panel of 14 UK manufacturing industries, 1970–1992	Total factor productivity growth	Proportion of adult male manual workers covered by some form of collective agreement	No significant link
Vernon and Rogers (2013)	Panel of 14 OECD countries, 1961–1995	Growth of real value added per hour worked in manufacturing	Union density	Unionism negatively linked to productivity in countries of craft and general unionism (including UK); positively linked to productivity in countries of industrial unionism

Note: Authors' compilation based on the cited studies.

large-scale panel micro-analyses showing links between enterprise-level unionism and productivity *growth* in the UK in the 1980s: Nickell et al. (1992) and Gregg et al. (1993). The interpretation of the findings of these studies has been crucially shaped by considerations of the national backdrop to such local unionism, as Vernon and Rogers (2013) stress.

Nickell et al. (1992) and Gregg et al. (1993) find positive associations between local union presence – crucially, as gauged at the start of the periods of observation – and productivity growth. These have been interpreted as expressing *not* the productivity-promoting effect of unions, but rather a productivity boost resulting from the hollowing and erosion of established local union organizations under Thatcherism (e.g. Metcalf, 2004; Pencavel, 2004). This interpretation is supported by evidence that companies which actually derecognized unions in the late 1980s experienced the fastest productivity growth bursts (Gregg et al., 1993, Table 3), although this latter result hinges on developments in a very small number of companies derecognizing unions.

Other evidence is available at a more aggregate level. The studies by Denny (1997), Cameron (2003) and Cameron et al. (2005) focus on the industry (manufacturing) level, and, with the exception of the latter study, provide some support for the notion that stronger unionism impeded productivity performance. Metcalf (1990) and Booth (1995) review related aggregate-level studies to reach a similar conclusion.

This UK-specific evidence is usefully complemented by the cross-country, time-series study of Vernon and Rogers (2013), who show that in countries of craft and general unionism, including the UK, stronger unionism is detrimental to labour productivity growth. Indeed, as they detail, the magnitude of the effect they estimate echoes remarkably closely the implications of the micro-based conclusions of Gregg et al. (1993) and Nickell et al. (1992), suggesting that the erosion of British unions in the 1980s contributed around 20 per cent to manufacturing productivity growth in the decade.

Vernon and Rogers (2013) stress that such negative productivity effects contrast starkly with the contemporary effects they establish in countries of industrial or encompassing unionism, such as Sweden or Germany, where they show that stronger unionism has positive effects on productivity. This itself echoes voluminous establishment-level findings on the implications of joint regulation in Germany, which shows the productivity benefits of German works councils, particularly where combined with coverage by a collective agreement (e.g. Mueller & Stegmaier, 2017).

There has long been a consensus in the quantitatively oriented industrial relations community around the catch-up thesis of Nickell et al. (1992) and Gregg et al. (1993), and in particular around the notion that the hollowing and erosion of British workplace unionism in the 1980s promoted productivity growth, eliminating, as a result, the productivity deficit of unionized workplaces (see, e.g. Bryson et al., 2005; Card & Freeman, 2004; Metcalf, 2004; Pencavel, 2004). Indeed, despite the weaknesses of the direct evidence of weaker productivity levels in unionized establishments up to 1980, of broader evidence at a more aggregate level, and also of the key catch-up studies identified here, the evidence does suggest that the weakening of British unionism in the 1980s and early 1990s, and in particular the erosion and hollowing of local structures, did yield a significant productivity benefit. In Freeman and Medoff's (1984) celebrated terms, this can be interpreted as expressive of the erosion of the monopoly effects of unionism.

However, this does not necessarily imply a permanent productivity growth effect. Nolan and Marginson (1990) and Nolan (1992, 1996) argue that any post-1980 productivity gains represented a one-off short- to the medium-term benefit of the hollowing and erosion of unionism. More specifically, these authors suggest that such one-off productivity gains came at the expense of employees suffering deteriorating working conditions and work intensification, as the erosion of unionism and overall labour market deregulation consolidated British management's 'low cost' strategies

in relation to their human resource practices. The evidence of catch-up in the 1980s and into the 1990s is certainly consistent with such arguments.

2.2 | Productivity catch-up complete? WIRS/WERS evidence on unionism and productivity

There has been much interest in the relationship between workplace unionism and the relative subjective labour productivity ratings by managers (assessing the productivity of their workplaces relative to the industry average), first available in WIRS1990.[2] Reassuringly, Forth and McNabb (2008) show that subjective measures of productivity are (broadly) positively correlated with objective measures. They also show identically signed linkages to assumed determinants of productivity, including union recognition. Published findings on the relationship between workplace unionism and productivity from WIRS/WERS deploy the survey waves to conduct purely cross-sectional analyses with controls for various other established, or plausible, influences on productivity, most particularly structural workplace characteristics (size, age, industry, etc.). Table 2 summarizes all relevant studies.

The earliest workplace-level analysis deploys the first subjective productivity data in WIRS1990 to reveal negative – though sometimes weak – relationships with various measures of workplace unionism, including union recognition (Fernie & Metcalf, 1995). Remarkably, Pencavel (2004, Table 5.5) shows a significantly negative relationship with the presence of any union members in the workplace – a very loose measure of workplace unionism.

However, by 1998, the cross-sectional relationship between workplace unionism and productivity appeared less secure. Pencavel's (2004, Table 5.5) analysis of WERS1998 shows that the presence of union members was no longer linked to lower productivity. Similarly, Addison and Belfield (2001; 2002) find no significant generic relationship of productivity to recognition. However, private sector workplaces with recognized unions and very high union density had significantly poorer productivity in 1998 (Addison & Belfield, 2002, Table A1). In 1998, then, it was the negative productivity connotations of particularly strong workplace unionism which remained relatively clear.

Well-known analyses of WERS2004 show rather more indications of a negative linkage between (subjective) productivity and generic measures of workplace unionism, and in particular union recognition. Kersley et al. (2006, Table 10.5, and p. 290) report a negative relationship between these variables in various model specifications that control for progressively more workplace, product market and respondent's characteristics. Meanwhile, Forth and McNabb (2008, Table 4) report a negative relationship between union recognition and subjective productivity, significant to at least the 10 per cent level (Forth & McNabb, 2008, p. 117).

More recent estimates deploying WERS2004 suggest a less secure union linkage to productivity. Bryson and Forth (2017, Table 5.1) control for structural characteristics, but avoid controls for Human Resource Management (HRM) practices, and find negative, but statistically insignificant, relationships between recognition and productivity. For the private sector specifically, they do find a relationship between productivity and recognition plus on-site union representation which is negative and weakly significant at the 10 per cent level, but no significant relationships with their other indicators of the strength of workplace unionism. Bryson et al. (2013), in regression models deploying a similar set of structural controls, but also further controls for workforce composition, find only some weak evidence of a negative link between 'union voice' and productivity (Bryson et al., 2013, Table 5 and p. 212).

TABLE 2 Unionism and productivity – WIRS/WERS studies

Study	Sample	Productivity measure	Measure of unionism	Key findings
Fernie and Metcalf (1995)	WIRS 1990; trading sector workplaces; 25+ employees	(1) Subjective productivity level; (2) subjective productivity change 1987–1990	(1) Union recognition; (2) closed-shop arrangements; (3) management recommending union membership	Unionism (recognition) negatively linked to both productivity level and change, but results are not always significant and vary by measure of unionism employed
Addison and Belfield (2001)	WIRS 1990 and WERS 1998; trading sector workplaces; 25+ employees	(1) Subjective productivity level; (2) subjective productivity change	(1) Union recognition; (2) closed-shop arrangements; (3) management recommending union membership	1990: Unionism (recognition) negatively linked to productivity level and change; 1998: no link with productivity level, positive link with productivity change
Addison and Belfield (2002)	WERS 1998; private sector workplaces	(1) Subjective productivity level; (2) subjective productivity change	Union recognition, plus other measures of 'union strength' (on-site representation, density, closed-shop arrangements, etc.)	No clear link between recognition and productivity; negative link between recognition plus high density (≥75%) and both productivity level and change
Pencavel (2004)	WIRS 1990 and WERS 1998, whole economy workplaces	Subjective productivity level	(1) Any union members present in workplace; (2) multiple unions; (3) bargaining structure	1990: Presence of union members negatively linked to productivity; 1998: presence of union members negatively linked to productivity only in workplaces with many unions and separate bargaining
Kersley et al. (2006)	WERS 2004; private sector workplaces; 10+ employees	Subjective productivity level	Union recognition	Union recognition negatively linked to productivity

(Continues)

TABLE 2 (Continued)

Study	Sample	Productivity measure	Measure of unionism	Key findings
Forth and McNabb (2008)	WERS 2004; trading sector workplaces	Subjective productivity level (plus objective measures for a limited sample of workplaces)	Union recognition	Unionism negatively linked to productivity
Bryson et al. (2013)	WIRS/WERS 1984, 1990, 1998 and 2004; private sector workplaces	Subjective productivity level	'Union voice' (union recognition and/or presence of union representatives)	Pooled years' model estimations indicate that both union-only and dual-channel voice workplaces are less productive than non-union-only voice ones, but not less productive than no-voice workplaces; separate years' model estimates are much weaker
Bryson and Forth (2017)	WERS 2004 and WERS 2011; private sector and whole economy workplaces; 5+ employees	Subjective productivity level	(1) Union recognition; (2) union density; (3) recognition and on-site union representation; (4) union strength index (combining all the above)	2004: All measures insignificantly linked to productivity, apart from recognition + on-site representation that is negatively linked to productivity in the private sector; 2011: no significant relationships

Note: Authors' compilation based on the cited studies.

Finally, Bryson and Forth (2017) also deploy the latest available WERS cross-section (WERS2011). They show that, controlling for structural characteristics, workplace unionism (however measured) has no statistically significant relationship to subjective labour productivity. Moreover, they show no consistent shift in the relationships identified in WERS2011 compared to those in WERS2004.

In sum, extant evidence from WIRS/WERS suggests that the negative relationship between workplace unionism and productivity, more or less clear in 1990, had become less secure by the turn of the millenium. By 2011, no such negative relationship was apparent. This WIRS/WERS evidence is consistent with the catch-up consensus outlined earlier – which hinged on evidence beyond that offered by WIRS/WERS – and, specifically, with the notion that the erosion of unionism in the UK in the 1980s and 1990s delivered a one-off boost to productivity growth.

3 | THE PRODUCTIVITY EFFECT OF WORKPLACE UNIONISM IN THE NEW MILLENNIUM: NEW CROSS-SECTIONAL AND PANEL EVIDENCE

3.1 | Data, variables and methods

We now present our own cross-sectional and panel analysis of the relationship between workplace unionism and productivity deploying data from the latest two WERS cross-sections (2004 and 2011) and the latest WERS panel (2004–2011). For the cross-sectional analysis, our focus is on private sector workplaces with at least five employees and, after excluding cases with missing values for any of the variables used in the regression analyses that follow, we end up with a final sample of 1335 and 1510 workplaces for 2004 and 2011, respectively. Regarding the panel sample, an important sample design innovation of WERS2011 is that the panel element is no longer a separate part of the survey (as in previous WERS). Instead, the final WERS2011 sample is a combined one resulting from the integration of the panel workplaces from the 2004 survey with a new cross-sectional sample (see van Wanrooy et al., 2013, pp. 199–204, for more details). We end up with a final sample of 1049 workplace-year observations and, as with the cross-sectional samples, these are all private sector workplaces with at least five employees.

Productivity is measured through the standard subjective measure included in the WIRS/WERS Management Questionnaire since 1990 and used in all relevant WERS-based studies. The relevant questionnaire item asks: '*Compared with other workplaces in the same industry how would you assess your workplace's labour productivity*', with possible answers ranging from 1 ('A lot better than average') to 5 ('A lot below average'). We reverse the variable so that it increases in higher reported productivity. Since only a handful of workplaces in our 2004 and 2011 samples reported the lowest relative level ('A lot below average'), we combined the two lowest levels in one.

The measurement of workplace unionism here, through *union recognition*, *union density* and *interaction* of the two, deserves detailed consideration. As we have already seen, extant analysis of the link between British unionism and productivity deploying WIRS/WERS places much emphasis on *union recognition*. Union recognition in the UK is an employer's statement of recognition of a union for collective bargaining purposes, and typically implies that some sort of collective bargaining (whether at the workplace level or beyond) normally occurs; most commonly, this is overpay (e.g. Kersley et al., 2006). In 2004, according to managers in workplaces of at least 25 employees, in almost three-quarters of private sector workplaces with union recognition, there was bargaining about pay specifically, and in more than three-quarters of these, this applied to

more than 80 per cent of their employees (Brown et al., 2009). Yet, this already suggests that the formal acknowledgement constituted by union recognition in the UK does not necessarily imply substantial or significant joint regulation, even with the smallest workplaces excluded. Thus, and indeed otherwise, union recognition per se may represent a rather 'hollow shell' (Millward et al., 2000; van Wanrooy et al., 2013, p. 82).

Detailed consideration of the adequacy of indicators of workplace-level joint regulation underscores the importance of *union density* to substantial joint regulation. Cully et al. (1999, pp. 105–106), using WERS1998, highlight the link between workplace density and the extent of actual consultation and negotiation, and indeed the number of issues negotiated. Similarly, Millward et al. (2000, p. 170) note that shifts in workplace density in WERS1990–1998 were positively associated with the number of issues negotiated. Even among scholars particularly wary of union moderation, density is often regarded as a useful indication of the leverage of workplace unionism, and specifically as facilitating more substantial joint regulation, agreements and social dialogue, and, if anything, improved rather than degraded terms and conditions (e.g. Kelly, 1998, 2004; Bélanger & Edwards, 2007).

As seen in Table 2 in the previous section, some extant WERS-based studies feature density alone or alongside recognition to gauge the strength of workplace unionism. Addison and Belfield's (2002, Table A1) analysis of WERS1998 (extending the work of Addison & Belfield, 2001) examines the link between the combination of recognition and particular ranges of union density and labour productivity in their private sector sample. For WERS2004 and 2011, Bryson and Forth (2017, Table 5.1) examine the link between productivity and broad density ranges, but also between productivity and an index of union strength featuring recognition and on-site representation, but depending mainly on density; four of the six points of their index's range express density (Bryson & Forth, 2017, p. 10).

In this context, our analysis focuses on the relevance of both union recognition and union density to productivity. We give particular attention to a combined measure of the strength of workplace unionism, interacting recognition and union density in continuous form, which reflects, but also develops, the measures previously used in the literature. The use of density as a continuous variable allows for a more sensitive indicator of raw union strength than does a categorical or interval density measure. Moreover, its interaction with recognition generates a measure of the strength of workplace unionism which acknowledges that raw union strength (density) is more likely to exert influence given a formal channel of joint regulation (recognition).

We begin our empirical investigation with a cross-sectional analysis, where we closely follow standard conventions of the relevant literature discussed above concerning modelling, estimation and control variables. We estimate, using Ordinary Least Squares (OLS), linear regression models.[3] The use of weighted data renders our analysis representative of the relevant workplace population in Britain, while the complex WERS sample design is accounted for in the estimates of standard errors. Our controls include variables for the standard workplace and workforce characteristics, the respondent's characteristics plus various indicators of product market competition. We avoid including controls which may inappropriately correct for aspects of HRM which workplace unionism may influence (we return to this topic in the Discussion section). Lists of all controls used in the estimated models can be found in the notes of the Tables of results that follow, as well as in the Tables of the online Appendix. The online Appendix also presents descriptive statistics for all variables used in our analysis.

Such cross-sectional analysis, however, while dominating the WERS-based literature discussed above, has distinct limits. Workplace unionism may itself be influenced by organizational performance or (unobserved) influences thereon, and is thus subject to endogeneity. Agell (2002)

stresses the social protection and insurance role of unions and joint regulation. Jirjahn (2009) shows the significance of poor enterprise performance to the subsequent introduction of works councils in Germany, while Jirjahn and Mohrenweiser (2016) find that the introduction of works councils is promoted by a poor employment outlook and by a skilled workforce, bolstering Jirjahn's (2009) interpretation of his findings as expressive of employee efforts to protect (quasi-)rents. Moreover, Murphy (2020) finds that almost half of the 1992–2010 union membership growth among UK teachers is explained by unions' insurance role.

All such processes imply the possibility of a negative omitted variable bias in estimates of the productivity effects of unionism, as employees organize to protect themselves from poor management and organizational performance, or possibly also as inherently less productive employees pursue union organization (see also, e.g. Svarstad & Kostøl, 2022).[4] There has been particular concern that negatively biased cross-sectional estimates may result from time-invariant workplace heterogeneity reflecting (unmeasured) differences in management quality (see, e.g. Bryson, 2005; Pyman et al., 2010; Mueller & Stegmaier, 2017; Svarstad & Kostøl, 2022).

The above underscores the potential of panel analysis. The WERS panel that we use here is much larger than previous WERS panels, offering much more hope of allowing or controlling for such unobserved effects by using workplace fixed effects models. The use of fixed effects also mitigates the problem of survivorship bias, as it controls for all time-invariant influences on both unionization and productivity (Verbeek, 2004, p. 383).[5] In this important sense, using the WERS2004–2011 panel enables the analysis to go beyond the establishment of mere cross-sectional 'links' or 'linkages'. We, thus, estimate (again with OLS) workplace fixed effects models, using the same control variables as in the cross-sectional analysis (region dummies are excluded since they are time-invariant). Panel survey weights, available with the published version of the dataset, are used throughout the analysis, while the standard error estimates are cluster-robust.[6]

3.2 | Cross-sectional results

Table 3 presents our cross-sectional results. Four different model specifications, each with a different combination of the two unionism measures, recognition and density, have been estimated for each WERS year; the last one, Model 4, includes the interaction term discussed above.[7] Following Bryson and Forth (2017), the 'Raw' columns present estimates from specifications with no control variables, while the 'Controls' columns present the estimates from fully controlled models.[8]

Results are broadly in line with extant cross-sectional evidence. For 2004, a negative and significant union linkage to productivity can be inferred from the different specifications, in line with Kersley et al. (2006), Forth and McNabb (2008), and (only to a certain extent) Bryson et al. (2013).[9] Density appears as a more robust and consistently negative predictor of productivity, particularly in the specifications with the full set of controls. Interestingly, and in line with our discussion above concerning the different union variables, Model 4 shows that higher density is negatively related to productivity only in workplaces with a recognized union. In 2011, and in line with Bryson and Forth (2017), unionism seems no longer linked to productivity. Most union coefficients are positive, but very imprecisely estimated. The only exception to this pattern is a significantly positive link between density and productivity in workplaces with no recognition, observed in Model 4. Given that only 6 per cent of such workplaces have a non-zero density (with an average density rate of 1.3 per cent) and that this result does not achieve statistical significance at any conventional level in the model with controls, we do not discuss this finding further.

TABLE 3 Cross-sectional analysis, OLS estimates of union effects on subjective labour productivity, WERS 2004 and 2011

	2004		2011	
	Raw	**Controls**	**Raw**	**Controls**
Model 1				
Recognition	−0.209***	−0.179*	−0.042	0.010
	(0.005)	(0.052)	(0.601)	(0.904)
Model 2				
Union density	−0.273**	−0.405***	0.078	0.029
	(0.017)	(0.007)	(0.564)	(0.849)
Model 3				
Recognition	−0.191	−0.061	−0.088	0.004
	(0.104)	(0.607)	(0.369)	(0.964)
Union density	−0.041	−0.342*	0.180	0.025
	(0.820)	(0.084)	(0.276)	(0.877)
Model 4				
Recognition	−0.148	0.014	−0.057	0.046
	(0.219)	(0.910)	(0.618)	(0.642)
No recognition * density	0.374	0.338	0.387**	0.299
	(0.513)	(0.527)	(0.024)	(0.107)
Recognition * density	−0.125	−0.481**	0.074	−0.111
	(0.484)	(0.016)	(0.748)	(0.613)

Notes: All analyses use the establishment weights provided with the public use WERS data files; for all models, the unweighted sample is 1335 and 1510 private sector workplaces for 2004 and 2011, respectively; the complex WERS sample design is accounted for in the estimates of standard errors; *p*-values in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$; controls include establishment size, branch or head or single organization, organizational size, foreign ownership, one-digit industry (SIC 2003), years in operation, largest occupational non-managerial group, region, % female, % part-time, % in managerial or professional occupations, respondent's characteristics (sex, occupational title and tenure in present post), market location, number of competitors, degree of competition, competition from overseas and market share; full results are available in the online Appendix.
Source: WERS 2004 and 2011, and authors' analysis.

3.3 | Panel results

Table 4 presents our fixed effects estimates, again of a 'Raw' and a 'Controls' variant of four different model specifications. The use of either recognition or density in Models 1 and 2 (and 3, where the two variables feature alongside each other) does not produce any significant results. Most coefficients are positive, but very imprecisely estimated. In contrast, Model 4 shows a statistically significant result for our key interaction measure. A higher density is *positively*, significantly and strongly related to higher productivity only in workplaces with a recognized union. Neither recognition of itself (i.e. at zero density), nor higher density in the absence of recognition, are related to productivity performance. The panel findings thus show that the strength of workplace unionism, taken as the conjuncture of the existence of a formal channel of joint regulation and the extent of the sheer power implied by union membership density, is positively related to productivity performance.[10]

The contrasting cross-sectional and fixed effects findings on the implications of stronger workplace unionism (the interaction of recognition and density) reveal a dramatic selection-type effect biasing our cross-sectional findings. Some unobserved time-invariant heterogeneity influences

TABLE 4 Panel analysis (workplace), fixed effects estimates of union effects on subjective labour productivity, WERS panel 2004–2011

	Raw	Controls
Model 1		
Recognition	0.169	0.004
	(0.493)	(0.987)
Model 2		
Union density	0.117	0.212
	(0.775)	(0.609)
Model 3		
Recognition	0.161	−0.041
	(0.537)	(0.885)
Union density	0.045	0.231
	(0.914)	(0.598)
Model 4		
Recognition	−0.115	−0.340
	(0.691)	(0.285)
No recognition * density	−0.698	−0.630
	(0.162)	(0.198)
Recognition * density	0.892**	1.117**
	(0.037)	(0.039)

Notes: OLS estimates with workplace fixed effects. All analyses use the establishment weights provided with the public use WERS data files; for all models, the unweighted sample is 1049 establishment-year observations; cluster-robust standard errors are estimated; *p*-values in parentheses; ** $p < 0.05$; controls include establishment size, branch or head or single organization, organizational size, foreign ownership, one-digit industry (SIC 2003), years in operation, largest occupational non-managerial group, % female, % part-time, % in managerial or professional occupations, respondent's characteristics (sex, occupational title and tenure in present post), market location, number of competitors, degree of competition, competition from overseas and market share; full results are available in the online Appendix.

Source: WERS panel 2004–2011, and authors' analysis.

both productivity and workplace unionism, negatively biasing the cross-sectional estimates. This may be some aspect of management paucity which impedes productivity performance, while promoting workplace unionism as employees seek protection.[11]

Indeed, it is noteworthy that the coefficient on stronger workplace unionism does not merely change magnitude under fixed effects, but changes sign as well. Thus, the fixed effects finding cannot express a dynamic (time-variant) omitted variable bias paralleling the time-invariant omitted variable bias evidently contaminating the cross-sectional finding. Moreover, the continued bottoming out of the UK union pay premium is contrary to any suggestion of some new positive dynamic bias affecting our fixed effect estimation as a result of an intensification of union rent seeking during 2004–2011.[12] This provides further reassurance about the causal nature of the relationship apparent under fixed effects.[13]

4 | DISCUSSION AND IMPLICATIONS

Extant evidence suggests that any detrimental effects of Britain's trade unions on productivity performance faded as unionism was eroded and hollowed under Thatcherism, with evidence

from WIRS/WERS confirming that by the turn of the millennium the earlier negative linkage between British workplace unionism and productivity had become uncertain. Our present analysis deploys the latest available WERS panel to indicate that for 2004–2011, stronger workplace unionism, gauged by a composite measure combining union recognition and density, was having a *positive* productivity effect, generating rents rather than destroying – or merely extracting – them.

Although our key findings are panel (fixed effects) findings, as opposed to the cross-sectional findings typical in studies using WIRS/WERS, it is plausible, given the shifting industrial relations backdrop and the fading negative linkage between unionism and productivity apparent in previous studies, that they express a profound shift in the impact of British workplace unionism on productivity. Indeed, the fading of the union rent-seeking, relative to the social protection, role implied by the bottoming out of the UK union pay premium noted earlier suggests that negative bias in the cross-sectional analysis should have been much less pronounced in earlier studies. It, thus, appears very likely that the positive effect of stronger workplace unionism on productivity which we identify is a novel phenomenon of the new millennium.

In a dark twist of Nolan and Marginson's (1990) interpretation of the post-1980 productivity catch-up, it might be suspected that our findings express managements' co-option of modern British workplace unionism. Given concerns expressed about the reorientation of British unions in critical accounts of partnership (e.g. Kelly, 1998; 2004; Danford et al., 2014; but also Boxall & Purcell, 2003, Figure 8.6), it might be suspected that there is a tendency for British workplace unionism to actually intensify exploitation, and perhaps even more so where it is stronger. Might stronger British workplace unions actually collaborate so closely with employers, co-opted either by deliberately pursuing mere institutional or leadership benefits, or by blindly succumbing to a managerialist ideology, that they raise workplace productivity simply by assisting work intensification?

Certainly, Bryson and Green (2015, Table 7.4) report a large, positive and significant gap between unionized and non-unionized employees in the 2012 Skills and Employment Survey (SES) in how hard employees say they are required to work, contrasting with negative or insignificantly positive gaps in all previous SES waves, at least given controls. However, Bryson and Forth (2016, pp. 163–164) find no significant relationship between changes in the such required effort and labour productivity in their analysis of the WERS2004–2011 private-sector panel. This suggests that intensification is not central to our present panel findings; required effort cannot mediate the relationship between stronger workplace unionism and productivity which we establish in the WERS2004–2011 private-sector panel. The mechanisms appear more benign Freeman and Medoff (1984) 'voice' effects.

A systematic econometric investigation of the avenues by which stronger British workplace unionism is now having positive effects on productivity is beyond the scope of the present article. However, a disparate range of studies deploying diverse datasets indicate various possible mechanisms for such positive productivity effects. Most strikingly, as we elaborate below, there are many indications of recent shifts in the implications of UK unionism both for employee attitudes towards their organization, HRM and their work, but also for particular HRM practices. These indications can simultaneously provide reassurance of the credibility of the present findings concerning unionism and productivity, and present an agenda for further research.

There is no evidence of any shift in the attitudes of managers and union representatives to one another between the WERS2004 and WERS2011 cross-sections (see, e.g. van Wanrooy et al., 2013, pp. 63; 68; 165–166). However, the dramatic improvement in union–management relationships perceived by union representatives between WERS1998 and WERS2004 (Kersley et al., 2006,

pp. 168–170) may have more recently been recognized by employees. This, in turn, may have brought an improved employee sense of distributive and procedural justice, and employee trust in management, which international studies find linked to favourable employee perceptions of union–management relationships (e.g. Deery et al., 1999; Deery & Iverson, 2005; Holland et al., 2012). Positive linkages of such organizational justice and trust perceptions to broader employee attitudes, and to employee behaviours and performance, are clear in these studies. Our findings may thus in part express developments in union–management relationships.

Regarding the workplace or employment relations climate more broadly, extant analyses show a sustained shift in the cross-sectional linkage between workplace unionism and management perceptions of management–employee relations, given controls. Bryson et al. (2013), using WIRS/WERS, show that the cross-sectional linkage between union recognition and poorer manager perceptions of management–employee relations faded from 1984/1990 to 1998/2004, and this tendency continued between 2004 and 2011 (Bryson & Forth, 2017, Table 5.15). Analysis of the British Social Attitudes Surveys shows parallel findings regarding employee perceptions of management–employee relations, with the significantly negative linkage to unionism in the 1980s fading, becoming insignificant by the mid-1990s, and remaining so afterwards (Bryson & Forth, 2011, Table 17.4).

These shifts may have substantial implications. WERS cross-tabulations show extremely strong correlations between employee perceptions of the management–employee relationship and employee commitment (van Wanrooy et al., 2013, Table 8.7). While there is no detailed study available for the UK, Fortin-Bergeron et al. (2018) deploy regression to confirm such linkages for Canada. Our present findings may thus in part express the more generally positive employee attitudes and behaviours under workplace unionism implied by such shifts in the relationship between workplace unionism and the broad workplace or employment relations climate.

The suggestion that our findings might in part express the positive implications of a shift in the relationship between management and workplace unionism away from adversarialism and towards more constructive engagement should not be taken to imply pernicious union collaborationism. There is no detailed evidence for the UK, but Australian evidence shows that employees regard union–management relationships as more collaborative or constructive where they feel unions are more effective; the linkage is only threatened by controls for the very mediating channels through which this linkage would be expected (Deery et al., 1999; Deery & Iverson, 2005). Moreover, of course, our key finding here is that where workplace unionism is *stronger* – that is where recognition is accompanied by higher union density – then productivity is improved. In the terms of Huzzard and Nilsson (2004), 'dancing' may not have replaced 'boxing', but rather reshaped it.

To some extent though our findings may express a shift in the implications of British workplace unionism for specific HRM practices, which in turn have implications for employee attitudes, behaviours and performance. Several strands of research reveal the shifting cross-sectional links of British unionism with work organization. It is often suggested that restrictive practices of various forms were increasingly lifted in the 1980s and early 1990s in unionized workplaces (Machin & Wadhwani, 1991), aiding their productivity catch-up (see also Booth, 1995). Regarding employee involvement, autonomy or direct participation, in the form of (the very closely related) high involvement management (HIM), high involvement work systems, high commitment management (HCM) or high-performance work systems (HPWS), there is also evidence of shifting union linkages. While Wood's (1996) early study reports a negative relationship between union recognition and the 1986–1990 change in HR practices associated with HCM, Wood and de Menezes (1998) find union recognition and density unrelated to HCM in their ordered probit

analysis of WIRS1990. Wood and Bryson (2009) also show no clear difference in the use of HIM practices between unionized and non-unionized workplaces, nor in developments in them between WERS waves.[14]

Indeed, recent evidence suggests that British unionism may now have a *positive* linkage to HIM. White (2005, Tables 2 and 3) shows union recognition strongly linked to HPWS in 2002. Moreover, Charlwood (2015) finds significantly positive relationships between union coverage and HIM in his (unreported) regression analyses using the 2001, 2006 and 2012 SES (Charlwood, 2019, personal email communication, 15 April). Bryson and Green (2015, Table 7.4) analyse the relationship between coverage and HIM-related aspects of 'job quality' in SES waves. They find (with controls) that the negative linkage of coverage to 'task discretion' and 'opportunity for skill use' has declined significantly or even disappeared since the 1990s and early 2000s, while by 2012, a significantly positive and large coefficient on coverage emerges for the 'learning requirements' of the job. Relatedly, Bryson and Forth (2017, Table 4.4) estimate significantly positive private-sector linkages (given controls) between indicators of unionism and employees' experience of any off-the-job training that are strengthening between WERS2004 and WERS2011, particularly with regard to recognition and density; by 2011, some significant and positive linkages had also emerged to employees' experience of 5 or more days of off-the-job training (Bryson & Forth, 2017, Table 4.5).

Bryson et al. (2005) find that British unionism strongly reinforces the positive linkage of HIM to productivity, interpreting this under an implicit mutual gains logic. This implies that the productivity benefits of unionism's strengthening linkage to HIM (and related concepts) are themselves much enhanced. Given the longstanding negative workplace-level link between voluntary turnover and various measures of unionism (e.g. Bryson & Forth, 2017, Table 5.14), these enhanced productivity benefits of HIM under unionism may in part be attributable to the particular capability afforded by the retention of employees who have been developed by HIM.

A sustained shift in the link between British unionism and pay arrangements is also apparent. Generalized union membership premia indicating rent-seeking and extraction – 'monopoly' effects on pay – have been enormously eroded since the early 1990s (Blanchflower & Bryson, 2003; Blanchflower & Bryson, 2010; Bryson, 2014; Bryson & Green, 2015; Forth & Bryson, 2015). Meanwhile, the egalitarian effect of unions on pay distribution – relative to the strength afforded to them by their declining memberships – has intensified. Card et al.'s (2004) variance decompositions imply that British unionism's relative egalitarianism – as this might reasonably be termed – increased substantially from the early 1980s; the shift was most marked within skill groups, such that under unionism, the pay was now much more securely attached to skill by the 2000s. Bryson and Green (2015) underscore the suggestion that unions' relative egalitarianism grew c.1990–c.2010, principally due to a compression in unionized pay from the top of the pay distribution. This egalitarian shift indicates that British unionism is now in effect much more focused on social insurance as opposed to rent-seeking (see Agell, 2002, for a theoretical discussion).

In the cross-sectional, private sector analyses of Bryson and Forth (2017, Table 4.2), the linkage of pay satisfaction to each of their seven indicators of unionism became markedly more positive between WERS2004 and WERS2011, given controls. This strengthening of this linkage is all the more striking as it is not mirrored by such strong shifts in the linkage between pay levels and unionism (c.f. Bryson & Forth, 2017, Table 4.1). Beyond any immediate productivity implications of the apparently increasingly secure linkage of unionism to pay equity – which overviews (e.g. Shaw, 2014) suggest are vital to the organizational performance benefits of pay arrangements – this may have reinforced the sense among unionized employees that they stand to benefit from HIM, deepening its productivity benefits. Certainly, Vernon's (2015) study suggests that an emphasis on

pay compression promotes manufacturing productivity performance in countries with a tradition of craft and general unionism, such as the UK.

Shifting cross-sectional linkages thus strongly suggests various channels through which British workplace unionism may be having novel positive productivity effects, and we might reasonably expect that these would be more pronounced where unionism is stronger, indicating possible accounts of our striking central finding here. Since recent UK findings suggest that, with (employee) fixed effects, union membership is now positively related to job satisfaction (Blanchflower et al., 2022), which (panel) evidence suggests in turn boosts productivity (e.g. Bryson et al., 2017), job satisfaction also likely features as a proximal cause of productivity in the underlying chain of mediation. However, a shifting effect of British unionism on channels generally poorly captured in HRM surveys may also play a role; it is conceivable that as British unionism has retreated from rent-seeking, its impact on investment is now less deleterious than Doucouliagos et al.'s (2017) meta-analysis suggests, aiding novel productivity effects.

Further research is obviously needed on the precise mechanisms by which stronger British workplace unionism now brings productivity benefits, and indeed the nature and extent of the reorientation of British unionism implied. British unionism, where stronger, may now be providing the benign governance long associated with unions and works councils in Germany or Sweden (e.g. Mueller & Stegmaier, 2017; Vernon & Rogers, 2013), but there is much yet to be understood about the processes involved in this apparent revolution. This is also a terrain of resonance internationally; as Mohrenweiser (2022, fn. 3) notes, even the voluminous literature on German works councils has given scant attention to the channels by which they promote productivity.

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ENDNOTES

[1] Studies for some other countries have been much more innovative; see, for example Barth et al. (2020) and Svarstad and Kostøl (2022) on Norway.

[2] The relevant question in WIRS1990 asked managers to provide a productivity comparison relative to 'other similar workplaces'. From WERS1998 on, 'other establishments/workplaces in the same industry' are considered the comparison group instead. The exact wording is provided in the next section.

[3] Ordered probit regression results were very similar in the direction, size and statistical significance of the relevant coefficients, and are available from the authors on request. Using linear regression modelling here allows continuity to our panel analysis that uses models with workplace fixed effects.

[4] It is theoretically possible that there might be a positive, rather than negative, omitted variable bias. Aggressive union rent-seeking, and employer selection of the more productive employees from those effectively queueing for union jobs, can, in theory, positively bias cross-sectional estimates given the limits of available controls (Barth et al., 2020; Svarstad & Kostøl, 2022). However, the bottoming out of the UK union pay premium, detailed later in the article, suggests that any such effect has sharply diminished since UK unions were at their apex. Moreover, there is ultimately no sign of any such effect in our findings here.

[5] Van Wanrooy et al.'s (2013) finding that workplaces with union recognition in 2004 were more likely to have closed by 2011 should not be affecting our findings since the fixed effects results centre essentially on the relationship between the *change* in productivity and the *change* in the strength of workplace unionism in 2004–2011.

[6] Bryson and Forth (2016) hint at the possibility of weak and non-robust positive relationships between some measures of workplace unionism and productivity in panel analysis of WERS 2004–2011, but do not present any further details.

[7] Our approach to the introduction of the recognition and density variables in Model 4 is algebraically equivalent to the standard specification with recognition and density on their own, plus the addition of their interaction as a single separate term (see, e.g. Svarstad & Kostøl, 2022, for this standard specification, but with the presence of a collective agreement instead of recognition as the relevant variable in their study). However, our operationalization means that the estimated (marginal) effect of density for workplaces with and those without union recognition can be directly read from the estimated coefficients.

[8] Due to space constraints and for ease of exposition, only the union coefficient estimates are presented in Table 3. The same holds for the panel results presented later. Full results are available in the online Appendix.

[9] Differences in the exact operationalization of the union variables (e.g. our use of a continuous, instead of a categorical, density measure), and perhaps the set of control variables used here, may explain the stronger and more precise results we obtain relative to those reported by Bryson and Forth (2017, Table 5.1).

[10] A different way to show the importance of this interactive effect for productivity is to calculate the (average) marginal effect of recognition at different density levels. This effect is insignificant at low levels of density, becomes significant when density reaches around 60 per cent and ends up at 1.406 (p-value 0.033) at a 100 per cent level of density.

[11] We obtained the direct evidence for this by first categorizing the panel workplaces as 'poor performers' ('high performers') if they recorded one of the two lowest (highest) productivity levels in 2004. We then re-estimated all our four fixed effects models in Table 4, separately for 'poor' and 'high performers'. For the 'high performers' sample, union variables were generally negative, but very weak and insignificant. In contrast, many union variables were positive and significant in the regressions on the 'poor performers'. These results indicate stronger unionism being particularly important in promoting productivity in poorly performing workplaces.

[12] It might be suspected that our fixed effects finding might express an entirely new selection process such that, from 2004, productivity or its concomitants suddenly began to *promote* the strength of workplace unionism. However, British union membership pay premia continue towards bottoming out at historically low levels, tempered by counter-cyclical upticks themselves fading (e.g. Blanchflower & Bryson, 2003; Blanchflower & Bryson, 2010; Bryson, 2014); this does not support the post-2004 surge in union rent-seeking and extraction implicit in such selection.

[13] Some might be concerned about our subjective productivity measure. However, evidence that objective productivity is more strongly related to assumed determinants than is the subjective productivity measure we deploy (Forth & McNabb, 2008) suggests that we may be underestimating the causal effect.

[14] Building on Machin and Wood's (2005) earlier analysis, Wood and Bryson (2009) rely on a far richer set of HIM practices available in both WERS1998 and 2004.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available through the UK Data Service at http://doi.org/10.5255/UKDA-SN-7226-7 (Study Number 7226) and http://doi.org/10.5255/UKDA-SN-5294-2 (Study Number 5294).

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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