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Abstract

The comparative industrial relations literature now displays ambivalence about the continued significance of national architectures of joint regulation for employment relations outcomes. This article considers the capacity of such architectures to account for the marked cross-national comparative variation in the extent of overall pay inequality among the nations of the established advanced industrialized world at the turn of the millennium, with a particular focus on differences in pay inequality among continental European and coordinated market economies. The article demonstrates that the architecture of joint regulation can still account for pay inequality, but that it is the sheer strength of unions or weight of joint regulation, rather than the procedural formalities often emphasized in the comparative industrial relations literature, which are of purchase.

Keywords

collective bargaining, industrial relations, institutions, labour unions, trade unions

Introduction

Whitfield et al. (1994: 319) observe that ‘There can be few more central questions in the study of industrial relations than the extent to which different national regulatory systems give rise to different institutions and outcomes at the workplace.’ This emphasis on the explanation of differing outcomes – on accounting for ‘functional non-equivalence’ – can readily be justified. Cross-national comparative differences of outcome are often striking, and, despite the interest of examining differing routes to the same place, demand explanation with a force that such equi-finality does not.

Characterization of national frameworks or architectures of collective bargaining, or joint regulation, remains at the core of comparative industrial relations (IR). While this

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characterization typically makes reference to workplace union structures and the overall density of unionization, particular attention is usually accorded to the procedural formalities observed in the setting of pay and conditions (e.g. Ferner and Hyman, 1998a; Schulten, 2005; Traxler et al., 2001). The coverage of collective bargaining and the centralization of bargaining have been central to these institutional characterizations for decades. From the early 1990s, this focus was increasingly complemented by attention to bargaining coordination, with the discussion gradually shifting from horizontal coordination among agents at the same bargaining level to vertical coordination through successive levels of bargaining (see e.g. Stokke, 2008; Traxler et al., 2001).

For Hyman (1994: 177), in examining developments to the mid-1970s, 'it was easy to conclude that institutions exerted a relatively autonomous determining effect'. Yet Hyman (1994: 178, n5) stresses that 'Whether institutions remain active intervening variables . . . is a crucial issue in contemporary IR analysis.' Locke and Kochan (1995: 380) comment that 'Variations in IR practices resulting from the productivity coalitions emerging in many plants (and the absence of such coalitions in others firms and plants) lead to the end of distinctive national systems of IR.' They stress a new flexibility in the social regulation of work, and the growing importance of enterprise, management and skill as key loci in employment relations and pay determination specifically. Indeed, around the turn of the millennium even textbook treatments betrayed a striking uncertainty about the extent to which the national architecture of joint regulation still actually mattered for the substance or outcomes of employment relationships (see e.g. Bamber et al., 2004; Ferner and Hyman, 1998a). Thus, while the comparative IR literature continues to devote much effort to characterizing infrastructures of joint regulation, it displays growing uncertainty about their significance.

Pay determination is central to the field of IR (e.g. Traxler et al., 2001). Moreover, the compression of pay differentials and inequalities is a central, almost defining, concern of unions (e.g. Pontusson, 2000; Swenson, 1989). This renders pay inequality a vital terrain for the consideration of the continued significance of joint regulation. If national architectures of joint regulation still have vital purchase then there should be a clear and simple cross-national comparative relation between these architectures and the extent of pay inequality.

In this context, this article offers a systematic assessment of the capacity of the architecture of joint regulation to offer an account of comparative pay inequality at the turn of the millennium. The next section considers in detail the available quantitative literature on joint regulation and pay inequality, and shows that simple bivariate correlations across differing samples of nations have much to contribute. The article then turns to outline in turn the facets of the architecture of joint regulation which the literature suggests might account for comparative pay inequality and to assess in turn the robustness of the account they provide. A discussion section reflects on the appropriate interpretation of the findings. Some comments on the broader implications conclude the article.

Joint regulation and pay inequality: The nature and limits of existing evidence

Hyman (2001) detects some recent convergence in the ideologies and identities of union movements in the three European countries he takes as historic exemplars of distinct 'geometries'. Moreover, he suggests a wider retreat of egalitarian wage policy where

'class' or 'society' have historically had more salience (Hyman, 2001: 171). Particularly in conjunction with the commonplace suggestion of an international tendency towards greater pay inequality (e.g. Bamber et al., 2004: 26) this might be taken to demonstrate that there is no longer a simple link between architectures of joint regulation and pay inequality. However, such accounts leave unclear the extent to which change in national patterns proceeds at different rates from different starting points. Certainly, Doellgast and Greer (2007) and Doellgast et al. (2009) show that in some sectors the totemic German system (see e.g. Ferner and Hyman, 1998b) now allows a marked variability in pay rates – even among those companies or subsidiaries subject to some form of bargaining. Yet this still leaves uncertain the more general purchase of joint regulation on pay inequality in the new millennium.

Extant quantitative examinations of the influences shaping aggregate pay inequality make use of OECD data on decile ratios. The OECD (e.g. 2003) details decile ratios for the gross pay of full-time employees in the nations of the established advanced industrialized world. Typically, attention focuses on the ratio D9/D1: the ratio of the pay of someone at the 9th decile of a nation's pay distribution to the pay of someone at the 1st decile. While recognized summary indicators of aggregate pay inequality (Pontusson, 2000), the OECD data do suffer some problems of comparability. There are cross-national variations in the coverage of the ratios across public employees, employees in agriculture, apprentices and employees in firms of fewer than 10 employees. Moreover, the ratios are calculated variously on the basis of hourly, daily, weekly, monthly or annual pay, implying possible cross-national variation in the extent to which measured pay inequality reflects inequality in hours worked. In the French case, the underlying data, while gross of taxes, are net of (employees') social insurance contributions. However, the analysis of the number of nations allowed by reference to decile ratios attenuates the problems of inference.

Existing analysis of the relationship between joint regulation and aggregate pay inequality hinges on statistical analysis of the linkage. While, as is often observed, association does not prove causation, this approach can readily be justified as a pragmatic response to profound philosophical difficulties in conceiving causal relationships (e.g. Psillos, 2002), given that it is difficult to imagine how causation might not involve some element of association as a vital prerequisite (see e.g. Pontusson, 2000). The critical relevant test of the capacity of the architecture of joint regulation to now offer an account of pay inequality is whether comparative architectures bear a clear, strong, robust, simple and direct empirical relationship to comparative pay inequality. What does the existing literature offer in this regard?

Golden and Wallerstein's (2006) recent multiple regression analysis seeks to establish the determinants of the *growth* in pay inequality in the advanced industrialized world in the 1980s and 1990s. While they find some evidence of the relevance of bargaining institutions, the focus of the study is transparently historical change, rather than cross-national comparative variation. Other studies appear more promising in identifying the relevance of joint regulation to cross-national comparative pay inequality. Rueda and Pontusson (2000) consider aggregate pay inequality in 16 advanced industrialized nations through 1973–95. Their multiple regression analysis shows that indicators of joint regulation, alongside indicators of the stance and role of government inter alia, are partially correlated with pay inequality as gauged by D9/D1. Wallerstein (1999) similarly examines

aggregate pay inequality in 16 nations through the shorter period 1980–92, similarly finding some evidence that bargaining institutions, *inter alia*, matter. In each case, stronger or more elaborate joint regulation is partially correlated with lower pay inequality.

Even these latter two studies are less revealing than they might seem, however. While they are not exclusively historical, the model specifications are such that it is historical change, not comparative variation, which is the focus of analysis, and which is thus principally reflected in the results. Rueda and Pontusson (2000) feature country dummies throughout, but do not present or analyse the results for these dummies themselves. Meanwhile, Wallerstein's (1999) use of an error-correction model allows for persistence in each nation's pattern of pay inequality, approximating the inclusion of such country dummies. In each case, then, there is allowance for the effect on pay inequality of unidentified but enduring features of national political economies beyond the sphere of joint regulation.

This, together with the presence in these studies of other (time-varying) explanatory variables specifically proxying potential influences on pay inequality beyond the sphere of joint regulation, implies that while these studies establish that joint regulation has some place in the explanation of aggregate pay inequality, they leave much uncertain. In particular, and crucially, they do not reveal whether it is typically the case that countries with lower pay inequality typically have stronger or more elaborate architectures of joint regulation (and countries with greater pay inequality correspondingly weaker or less elaborate architectures). The implicit emphasis on historical variation, together with the *ceteris paribus* condition introduced by the introduction of variables beyond the realm of joint regulation makes this unclear, even with regard to the typical situation through the rather lengthy periods with which they deal.

Pontusson's (2000) work with 1985 data for OECD nations provides a related illustration of the limited meaning of partial correlations. The proportion of the workforce who are female has a strongly significant partial correlation with pay inequality given a range of controls (Pontusson, 2000: Table 10.5). However, Pontusson (2000: Table 10.4) shows that there is absolutely no simple bivariate relation between the proportion of the workforce who are female and pay inequality (despite the greater number of degrees of freedom allowed by dropping these controls). Despite the strong partial correlation, female labour force participation evidently does not have the capacity to account in any measure for the comparative variation in pay inequality. Any effect it has is overwhelmed.

Studies which control for influences on pay inequality beyond the sphere of joint regulation, explicitly and/or implicitly via the inclusion of country dummies or persistence terms, leave similarly unclear whether the architecture of joint regulation has the capacity to offer some account of comparative variation in pay inequality. Even where indicators of joint regulation emerge with significant coefficients, joint regulation may be a relatively minor influence which is overwhelmed in the generation of comparative variation by other influences, such as corporate finance or governance, industrial organization, vocational education and training or government activity. The uncertainty is multiplied if we suspect that the impact of joint regulation may have faded through or since the sample period, perhaps by economic internationalization. Clarifying the capacity of the architecture of joint regulation to offer a contemporary account of comparative pay inequality requires a cross-sectional examination using the latest data.

However, the limited degrees of freedom allowed by study focused on such cross-national comparative variation imply difficulties in establishing partial correlations where several indicators of the architecture of joint regulation are entered in regression analysis simultaneously. These problems are severely compounded by close relationships among indicators of joint regulation. Where several independent variables are closely related the result is typically low coefficients and low *t*-ratios for each of them, regardless of their individual relationship to the dependent variable, as multiple regression analysis cannot isolate for any of the independent variables elements of variation which are uniquely shared with the dependent variable. Such multicollinearity often also leads to an unsettling instability in the coefficients if the sample, explanatory variables or estimation method are varied (see e.g. Pontusson, 2000: Table 10.5).

Successive bivariate correlation analysis of pay inequality and individual indicators of joint regulation provides a way forward in this context. Restricting the sample to organized capitalisms, or 'coordinated market economies' (CMEs) in the language of Hall and Soskice (2001), or still further to continental Europe, then offers the possibility of an assessment of the potential of joint regulation in understanding variation in pay inequality within groups of nations generally regarded as having much in common regarding corporate finance and governance, industrial organization, vocational education and training and state activity. This provides a check on the robustness of the bivariate associations apparent across the established advanced industrialized world as a whole, allowing a more exacting test of the status of the architecture of joint regulation as the key fulcrum in the marked comparative variation in aggregate pay inequality.

Can the architecture of joint regulation account for pay inequality?

The latest OECD data on decile ratios available for a large number of countries are, perhaps surprisingly, those for 1996 (adapted for Table 1). Where more recent comparable aggregate pay inequality data are available, they generally show remarkable stability in the comparative situation from the mid-1990s through to the new millennium (e.g. Golden and Wallerstein, 2006: Figure 1). Moreover, although it is clear that there have been significant recent changes in arrangements in some sectors in some countries (e.g. Doellgast and Greer, 2007), the more general stability of the architecture of joint regulation through the second half of the 1990s to the early 2000s is well documented (e.g. Schulten, 2005; Traxler, 2003a; Traxler et al., 2001; Visser, 2005). In effect then, study of the relationships apparent in 1996 amounts to study of associations around the turn of the millennium.

Although in many countries bargaining coverage does not extend to those earning at the 1st and most particularly 9th deciles, the principal reference in this article is to the D9/D1 measure of overall pay inequality. This is for three reasons. First, the objective of the article is to assess the extent to which joint regulation can account for cross-national comparative variation in overall pay inequality, rather than inequality in the cross-nationally varying segment of the earnings distribution in which it formally applies. Second, the norms and expectations implied by joint regulation likely affect the pay of employees not formally subject to bargaining. Third, the D9/D1 measure is available for

Table 1. Aggregate pay inequality by decile ratios, men and women, 19 OECD nations (1996)

Nation	Decile ratio D9/D1	Decile ratio D5/D1
Austria	2.78	1.57
Australia	2.91	1.65
Belgium	2.24	1.43
Canada	4.18	2.28
Denmark	2.16	1.38
Finland	2.29	1.40
France	3.09	1.60
Germany	2.84	1.59
Ireland	3.93	1.95
Japan	3.00	1.62
Netherlands	2.81	1.64
New Zealand	3.38	1.85
Norway	1.98	1.32
Portugal	4.05	1.64
Spain	4.22	2.01
Sweden	2.27	1.40
Switzerland	2.74	1.59
UK	3.47	1.83
US	4.63	2.11

more nations than most alternative decile ratios. Results are also reported here for the decile ratio D5/D1, in recognition of the particular relevance to debates within IR of pay inequality at the bottom (e.g. Streeck, 1997). In practice, with a correlation between D9/D1 and D5/D1 of .92 across the 19 nations which constitute the largest sample considered here, and of .96 across the various smaller samples on which the article particularly focuses, the relationships which D5/D1 has with indicators of the architecture of joint regulation are very similar to those of D9/D1.¹

What within the sphere of joint regulation might account for these enormous cross-national comparative differences in the extent of pay inequality? The literature suggests the possible relevance of bargaining coverage, centralization, (horizontal) coordination, the (hierarchical) organization of decentralization and finally rates of unionization. The relevance of each is considered in turn.

The organization of the labour market: Coverage

The formal organization of the labour market is given much attention in the comparative literature. The 'extent' of bargaining was the first of Clegg's (1976: 8–9) 'dimensions' of the 'structure of collective bargaining'. Hyman (1997: 312) writes that the 'practical implications' of bargaining centralization are of 'critical significance', only citing in support of this claim the established correlation between the highest level at which agreements are struck and the extent of collective bargaining coverage. The general relevance

of multi-employer bargaining (MEB) is central to high coverage, with such agreements typically taking organization well beyond those companies and workplaces at which bargaining occurs, sometimes with the aid of pervasive legal extension (see Traxler et al., 2001).

Traxler et al. (2001: 194), echoing Traxler's (1994) earlier work, reassert coverage as the 'most important indicator of the organization/disorganization of labour markets'. Traxler (2003a: 6) terms coverage as a measure of the 'control over the employment relationship' exerted by IR actors through bargaining, while Traxler et al. (2001: 106) hold that the 'power' of collective bargaining is 'contingent on how many employees are covered by collective agreements' and indeed that coverage 'represents the power dimension of the bargaining system' (p. 195). Moreover, they claim that 'coverage does govern wage formation from a comparative perspective' (p. 195), and make specific reference to 'the equalizing effects of coverage' (p. 195, fn2).

Traxler et al.'s (2001: Table III.15) estimates of coverage in 18 OECD nations provide the most accurate picture available, providing estimates of the conventional overall measure of coverage of collective bargaining: that among the workforce as a whole ('unadjusted' coverage), but also of coverage among those employees legally entitled to have their terms and conditions collectively bargained ('adjusted' coverage). This latter group excludes state employees, such as German Beamte, who have their terms and conditions decided by the state or by commissions or advisory bodies. As Traxler et al. (2001) stress, the 'adjusted' rates are the more relevant measure theoretically. Traxler et al. (2001: 195, fn2) themselves report a range of results from correlation analysis of coverage and measures of inequality for the period 1986–90, showing D9/D1 of $-.62^{***}$ for a sample of 16 nations.

Table 2 reports results for the turn of the millennium, based on data for 1996. Column 1 reports the correlation for the largest possible sample: 18 OECD nations (excluding Ireland, for which there are no coverage data), suggesting a rather weaker relationship than that reported by Traxler et al. (2001) for the earlier period. Traxler et al.'s (2001) sample size suggests the exclusion of Spain and Portugal. This exclusion is justifiable, as it might be expected that the influence of coverage on inequality might be overwhelmed by other influences in nations which both quite recently experienced prolonged periods of dictatorship and which remain less developed than other established OECD nations. If Spain and Portugal are thus set aside, column 2 shows that the results are very strong; significant at the 1 percent level.

Table 2. Collective bargaining coverage and pay inequality in the OECD

OECD nations	18	16	Continental European 10	CME 11	CME 10
R with D9/D1	-.44*	-.69***	.18	-.20	-.37
R with D5/D1	-.57**	-.68***	.08	-.23	-.32

Note: Superscripts *, **, ***: correlation statistically significant at the 10 percent, 5 percent and 1 percent levels respectively (two-tailed tests).

Yet the findings for the restricted samples are very different. Column 3 shows the relation across the 10 continental European nations remaining when Spain and Portugal are excluded. Column 4 shows results for coordinated market economies (CMEs) loosely defined, to include not only Japan but France. Column 5 shows the result for CMEs excluding all 'Latin' nations, regarded as mixed cases in Hall and Soskice (2001). In none of these further bivariate correlations is there any suggestion that coverage is associated with lower pay inequality. This could merely be indicative of the relevance of bargaining centralization or horizontal coordination to pay inequality, as it may be that across the countries of the continental European and CME groups, where coverage is generally high, the extent of the centralization of MEB is critical. It is to this possibility that we now turn.

The centralization and coordination of bargaining

The centralization, or level, of bargaining is a crucial organizing concept in the comparative IR literature, with greater centralization taken as implying or at least facilitating the compression of the pay structure, or considered synonymous with coherence in pay bargaining (see Vernon, 2006). Moreover, Traxler et al. (2001: 137) regard existing evidence as showing that 'Wage inequality significantly decreases with bargaining centralization', and report their own correlation analysis across OECD nations in confirmation. For others, the predominance of centralization is unquestionable: 'what has been identified as the most important factor in explaining wage dispersion is the level of wage determination: individual, company, sectoral or economy-wide' (Schulten, 2002: 176).

Traxler et al. (2001: 117) note that 'the bargaining level itself is a complex concept' and that 'In the literature on bargaining, reference to the level of (de)centralization is as widespread as its meaning is disparate' (p. 112). There are, however, important commonalities. Although rarely as explicitly as by Traxler et al. (2001), the bargaining level is usually assessed principally on the basis of the relative coverage of the collective agreements which result. In practice, this often means that bargaining is characterized as taking place at the highest level at which some bargaining procedure is evident. The care taken in operationalization of the concept of centralization and the detail and transparency of Traxler et al.'s (2001: Table III.1) work, together with the focus on the centralization of pay bargaining specifically, makes their assessment of centralization in 1994–6 the most appropriate for use here.² With their numbering, smaller numbers represent more centralization, so that we might expect a positive relationship to pay inequality.

Following Soskice (1990), many authors have suggested that centralization does not adequately capture the variety of routes to concertation in pay bargaining manifest, and stressed the relevance of the more inclusive notion of the horizontal coordination of bargaining (e.g. Ferner and Hyman, 1998a; Traxler, 2003b; Traxler et al., 2001). Since neither Traxler et al. (2001) nor Traxler (2003b) seek to offer any index of coordination, Kenworthy's (2002: Table X) prominent effort at a detailed scoring of (horizontal) coordination around the turn of the millennium is employed here.

Table 3. The level of bargaining, bargaining coordination and pay inequality

Explinator:	Level				Coordination	
	19	16	Continental European 10	CME 11	CME 10	CME 11
R with D9/D1	.08	.74***	-.21	.14	.07	-.07
R with D5/D1	.20	.75***	-.28	.07	.02	.07

Note: Superscripts *, **, ***: correlation statistically significant at the 10 percent, 5 percent and 1 percent levels respectively (two-tailed tests).

Table 3 presents the results for pay inequality and bargaining centralization and coordination. Column 1 includes all established OECD countries for which data are available, showing no relationship. Column 2 excludes not only Spain and Portugal but also Ireland. This is partly for consistency with the results for coverage, given the absence of comparable coverage data for Ireland. Moreover, while Barrett et al. (1999) frame their detailed study of pay inequality in Ireland with reference to the conventional wisdom of Traxler et al. (2001) that bargaining is centralized, they ultimately question such an interpretation, noting that ‘there has been no mechanism within the pay agreements to monitor whether firms paid more than the centrally bargained rate, and that no sanctions face firms which do so’ (Barrett et al., 1999: 95). Given these justifiable exclusions, centralization bears a very strong relationship to pay inequality (similar to that between coverage and pay inequality).

Columns 3–5 then restrict the sample as with the corresponding columns of Table 2. Within the CME or continental European groups, the correlation of centralization and pay inequality breaks down. There is, as Traxler et al. (2001) stress, much flux in the (highest) level at which bargaining occurs (relative to that in coverage for example). Yet the results are similar if Traxler et al.’s (2001) measure of centralization in the previous period is taken as an alternative.³ The final column shows a further result for that restricted sample for which the correlation with centralization is a little less weak – the CME 11, reporting the correlation between the inequality measures and Kenworthy’s (2002) index of coordination. Again there is no evidence of a link.

While it offers some purchase on variation across the established OECD, bargaining centralization and (horizontal) coordination cannot, any more than can coverage, offer an account of pay inequality of relevance within the continental Europe or CME groups. Could this merely express the importance of the hierarchical organization of decentralization to pay inequality within countries generally characterized by MEB?

Organized and disorganized decentralization

Ferner and Hyman’s (e.g. 1998a: xvi) treatments of the ambiguities of bargaining decentralization in the 1990s refer to ‘centrally co-ordinated decentralization’ as against ‘radical decentralization’. It is in these terms that Ferner and Hyman (1998a) stress the growing importance of opening clauses in industrial agreements in Germany and the

Netherlands in particular. Wedderburn (1991: 254) similarly identified 'articulated deregulation' in continental Europe. Yet it is Traxler's (1995) distinction between 'organized decentralization' and 'disorganized decentralization' – or, 'unorganized decentralization' (e.g. Traxler et al., 2001) – which has taken hold.

Some authors suggest that 'organized decentralization' may denote only that local bargaining takes place alongside continuing higher level bargaining (Hyman, 1997: 312; Marginson et al., 2003b: 165). Certainly, 'single-employer bargaining . . . means unorganized decentralization' (Traxler et al., 2001: 126). Yet organized decentralization involves a vertical coordination of bargaining activity (Traxler et al., 2001). Traxler (2003a: 8) notes that 'Multi-level bargaining may take an unarticulated or articulated form.' Under organized decentralization 'certain bargaining issues are delegated to regulation at company and plant level within a binding framework set by the multi-employer settlement' (Traxler, 2003a: 19). Traxler (2003a) underlines his dependence on Crouch's (1993) attention to the relationship between bargaining levels by using the term 'articulation' interchangeably with organized decentralization.

Traxler (1995: Table 1.1) characterizes Austria, Denmark and Germany as clear cases of organized decentralization through the period 1980–92 with which he deals. These are national cases not only of a predominance of MEB but of the prevalence of a peace obligation in lower level bargaining and indeed explicit derogation in higher level agreements. Traxler (1995) struggles to classify Sweden, apparently as the collapse of peak-level negotiations in this period invites a designation of disorganized decentralization, but the continuance of industrial bargaining and indeed the prevalence of a peace obligation at local level suggests organized decentralization.

Traxler's more recent work provides a resolution. Traxler et al. (2001) suggest that although the 1971 peak agreement in Belgium 'obliged the locals to respect higher-level agreements . . . this did not establish effective articulation, one reason being that there is no legally binding peace obligation in labour law' (Traxler et al., 2001: 128, fn1). Belgium is accordingly designated a case of unorganized decentralization. The priority accorded the peace obligation is more dramatically apparent in the contrasting classifications of 1970s West Germany and Italy. Although Traxler et al. (2001) stress the contemporary importance of (informal) bargaining by German works councils, and note the lack of explicit derogation, they designate West Germany a case of organized decentralization, noting the prevalence of a peace obligation. In all but the matter of the peace obligation, their characterization of Italy, designated in contrast unorganized decentralization, is inseparable. This attention to statutory arrangements offers a definition more profound in a political economic sense and avoids the burden of coding the articulation of bargaining systems on the content of multi-employer agreements.

Given the attention accorded the distinction, organized as opposed to unorganized decentralization might be expected to have rather different consequences for outcomes. Hyman (1997: 313) is uniquely explicit – '*effective* locally based trade unionism needs to be integrated within a structure partially resembling the modern corporation' (my emphasis), a matter of 'an articulation between local and national'. One might thus expect greater articulation to be associated with lower pay inequality.

Portugal, Spain and Ireland are excluded from the present assessment of the significance of organized decentralization, as in much of the earlier analysis here. Six of the remaining nations are predominantly characterized by single employer bargaining

(US, Canada, UK, New Zealand, Japan, Switzerland), and the highest bargaining coverage in any of them is 48 percent. These are not cases of organized decentralization in the very simple sense that they are not even cases of predominantly organized employment relations, and are not considered further. The remaining 10 nations are predominantly characterized by MEB, and the lowest bargaining coverage across this group is 69 percent.

Eight of these 10 nations predominantly characterized by MEB feature a hierarchical organization of bargaining, under which bargaining responsibilities are formally derogated from higher bargaining levels to lower (Australia, Austria, Denmark, Finland, Germany, Netherlands, Norway, Sweden). Traxler et al. (2001) and Traxler (2003a) provide the necessary assessments of whether lower level bargaining is subject to a peace obligation. However, Finland's experience is unique. While the Finnish labour market is characterized by the predominance of MEB, and bargaining is hierarchical, there was not organized decentralization (e.g. Traxler et al., 2001). Through to the late 1990s there was no substantial growth in local pay bargaining, with continuity in the role of peak and industrial bargaining (see also Lilja, 1998). In the other seven cases, hierarchically organized bargaining was coupled to a substantial growth in local pay bargaining (e.g. Traxler et al., 2001) – these are cases of organized decentralization.

There are two cases (of the 10) remaining. Local union organizations in both Belgium and France have recognized rights to bargain over pay, deploying the strike sanction as they see appropriate. In the case of France, this is a statutory right, and in the case of Belgium recognized by the 1971 peak-level agreement, which however cannot confer the legal enforceability of the resulting local agreements (Traxler et al., 2001: Table III.3). The decentralization of pay bargaining activity in Belgium and France has not been organized via the prevalence of a peace obligation at local level. Yet France and Belgium display very different patterns of pay inequality. Pay inequality in France is the highest among predominantly MEB nations. In contrast, pay inequality in Belgium is greater only than that in some of the Nordic nations.

Moreover, the average D9/D1 decile ratio for this pair of nations, in which there was a decentralization in a labour market predominantly organized, but in which there was no formal bargaining hierarchy, was 2.67, and the D5/D1, 1.52. This compares with an average D9/D1 decile ratio in the group of seven in which there was an organized decentralization of 2.54, and an average D5/D1 of 1.51. Considered against the range of inequality in the group which has a predominantly organized labour market (D9/D1 of 1.98–3.09, D5/D1 of 1.32–1.64), these differences are absolutely negligible.

In sum, the hierarchical organization of decentralization within the group of nations which feature labour markets predominantly organized by MEB does not account in any measure for the pay inequality across them. Given that coverage, centralization and coordination are not robustly correlated with pay inequality, does this imply that the architecture of joint regulation has no capacity to offer an account of comparative variation in pay inequality? There remains one further focus of attention.

Joint regulation beyond procedural formalities: Unionization

While as the preceding discussion demonstrates, the IR literature is in large part organized by reference to the procedural formalities of joint regulation, some contributions

question the adequacy of such institutional characterizations. Despite his stress on the articulation of IR systems, Crouch (1993: 289) notes that union movements in particular may be ‘articulated but weak’, citing the Swiss and Dutch cases, but also more tentatively the German case. Relatedly, Crouch (1992: 181) contrasts such cases of ‘employer-driven’ neocorporatism with the ‘labour dominant’ neocorporatism of the Nordic countries (p. 182). Other work suggests that articulation is not only insufficient for powerful systems of IR, but also unnecessary – Belgium appears a case of fragile neocorporatism in a weakly articulated IR system, but also a case of very significant joint regulation (e.g. Vilroxx and Van Leemput, 1998).

Crouch (1993) complements his attention to articulation with continual reference to ‘union strength’ (e.g. p. 281) and indeed ‘union power’ (e.g. p. 289). While this does not theoretically privilege union strength over procedural formalities, as does Korpi (1983: Figure 8.2), it recalls Korpi’s emphasis on ‘power resources’. Strikingly, moreover, Crouch (1993: e.g. Figure 7.2) follows Visser (1992) in taking the density of union membership as synonymous with ‘union strength’. This chimes with Korpi’s (1983) treatment of density as *the* measure of the power of union movements. Distinct echoes of Korpi (1983) can also be found in Traxler et al. (2001: 79), with density regarded as the ‘primary power resource of unions’.

In defence of procedural concerns, many authors have slighted the significance of membership density, with Ferner and Hyman’s (1992: xxiv) sentiment that ‘Numbers are important but not all-important’ probably expressing a widespread view. Vernon (2006) concurs that there are limits to the consequence of density of itself to the strength of unions. Yet he shows that density captures much of the weight of joint regulation at multiple levels, expressing the extent and depth of local organization but also much of bargaining centralization and, moreover, the immediate regulatory effect of MEB agreements on the lowest paid. Vernon (2006) presents strictly comparable data on employed (or active) union density, which are used in the analysis here (see Table 4).

Across the 14 nations for which consistent density data are available the correlation between density and pay inequality is very strong (column 1). For the purposes of systematic comparison the results for coverage and centralization with exactly the same set of nations are presented next (columns 2 and 3), and are still stronger, echoing the very best results in the larger samples presented earlier. Within continental Europe and the CMEs, however, the results for density are starkly different to those for coverage, centralization and indeed coordination presented earlier.

Table 4. Employed union density’s relative relation to pay inequality

Explanator:	Density	Coverage	Centralization	Density	Density
OECD nations	14	14	14	Continental European 10	CME 11
R with D9/D1	-.65**	-.68***	.74***	-.86***	-.87***
R with D5/D1	-.56**	-.66***	.74***	-.87***	-.88***

Note: Superscripts * **, ***: correlation statistically significant at the 10 percent, 5 percent and 1 percent levels respectively (two-tailed).

While as we have seen there is no bivariate correlation of pay inequality with coverage or centralization across the 10 established continental European nations, column 4 shows the correlation with density is very strong. This is significant at the 1 percent level, even in this small sample. Column 5 shows a similar result across the CME 11. The R^2 values implied suggest that while the variation in coverage, centralization and indeed coordination can account for none of the variation in pay inequality within continental Europe or across the CMEs, variation in density accounts for three-quarters of it. It thus seems that such exercises, with small samples and crude indicators, do not ask too much of the data. The strength of unions, or the weight of joint regulation, as this is gauged by union density, can offer a robust account of cross-national comparative variation.

Discussion

Coverage and bargaining centralization offer similarly strong accounts of variation in pay inequality across the established OECD *as a whole*. Yet neither can account for the pay inequality across the nations of the CME group, still less within continental Europe specifically. Nor can bargaining coordination or the organization of bargaining decentralizations account for the variation in pay inequality within these groupings of organized capitalisms.

These results demonstrate that the procedural formalities of MEB, extensive coverage and of hierarchically organized decentralization are consistent with a vast range of outcomes in pay inequality. It is true that no nation of single employer bargaining (SEB), low coverage, and thus of unorganized decentralization in its crudest sense, has seen pay inequality quite as low as in even the most unequal of the nations where MEB predominates. Yet it is also the case that the most unequal of the nations characterized by the predominance of MEB feature inequality almost touching that in the nations where SEB (often actually involving no bargaining at all) is the rule.

Self-evidently, formal coverage is necessary if joint regulation is to have a direct effect on employment relationships. Yet this need not imply anything for the empirical relationship between the extent of formal coverage and pay inequality – this hinges on the content of agreements. Conversely, agreed terms and conditions may be informally extended beyond that part of the workforce formally covered – for the mid-1990s, informal coverage in Denmark's private sector was 69 percent, much above recent estimates of formal coverage of 52 percent in this period (see Traxler et al., 2001).

How, though, may bargaining centralization be of such limited relevance? Even at their very best, as in Traxler et al. (2001), assessments of centralization centre on the balance between the different levels of bargaining within a nation. Traxler et al. (2001: 112) note that rankings of nations by centralization require 'clarification of the *relative* importance of the distinct *levels*' (my emphasis). Yet as Traxler et al. (2001: 117) note, 'it is wrong to understand changes in the importance of bargaining levels as a mere zero-sum game'. Existing assessments of centralization do not express in any sense the *comparative* significance of higher level bargaining. 'Centralized bargaining' may merely be an expression of the weakness of bargaining at lower levels.

Moreover, Hyman's (1997: 313) observation that higher level agreements framing lower level bargaining might not necessarily have 'meaningful content' has become of

acute relevance. Ferner and Hyman (1998a: xxiv) suggest that in some nations 'a strengthening of procedural formalization has gone hand in hand with substantive flexibility', with central agreements codifying the role of different bargaining levels in increasing detail but higher level agreements allowing more autonomy with regard to the 'substantive content of agreement' at lower levels. Marginson et al. (2003b: 163, 165) comment that in continental Europe, where the 'inclusive structure' of industrial bargaining has been preserved, the general tendency has been towards a proliferation of opening, opt-out and hardship clauses, alongside a 'shift from uniform to minimum standards'. Visser (2005: 296) concurs that 'beyond the relative stability of formal bargaining institutions, there has been a gradual transformation'. Arrowsmith et al. (2003: 391) detect a risk that industry agreements become an 'empty shell'.

Recent work on engineering and financial services has offered particularly suggestive evidence on the nature of organized decentralization (Arrowsmith et al., 2003; Marginson et al., 2003a, 2003b). Arrowsmith et al. (2003: 366) maintain a distinction between decentralizations 'authorized' by higher level agreements and those 'unauthorized'. Yet they note evidence for the German case that 'sector agreements are increasingly adjusting to reflect developments at company level' (Marginson et al., 2003a: 17). Their own findings on the reactive nature of industrial bargaining are intriguing. A senior official of IG Metall comments that 'opening clauses can also confirm what has already taken place' (Marginson et al., 2003b: 171). More generally, their findings lead them to comment that 'Sectoral agreements are increasingly adjusting to developments in company negotiations rather than mapping out directions for company negotiators to follow' (Marginson et al., 2003b: 182).

To an extent of course, and certainly in some sectors in Germany, the architecture of MEB in 'organized' economies is itself being eroded (e.g. Doellgast and Greer, 2007; Doellgast et al., 2009). Yet the continuities are striking (e.g. Traxler et al., 2001; Visser, 2005). Ferner and Hyman (1998a: xvi) note that despite their enthusiasm for company-level flexibility, employers in many nations are often reluctant to pursue radical decentralization, preferring rather 'to preserve the framework of labour peace provided by a structure of higher-level agreements'. Thelen (2000) stresses German employers' uncertainty about the implications for local IR of an abandonment of industry bargaining, while Visser (1998) suggests that Dutch employers too fear the consequences of such a development. Officials of unions and employers' associations may of course be interested in the continuance of the structures and processes of MEB for their own sake.

The present findings show that the procedural formalities of joint regulation are quite generally merely channels by which forces within the architecture of joint regulation may act. Often, it seems that these formalities sanction the development of transnationally emergent loci for pay determination, around enterprise and skill. Yet the robust correlations of the density of unionization and pay inequality indicate that these formal procedures can also convey very different imperatives, rendering architectures of joint regulation an active role as intervening variables. Union strength (Crouch, 1993), or the weight of architectures of joint regulation (Vernon, 2006), can thus offer an account of pay inequality which is strikingly robust. In the light of Vernon's (2006) contribution in particular, the correlations with density suggest that where MEB not only predominates,

but features agreements with minimum pay provisions of significance, and where local union organization is of greater extent and depth, pay inequality tends generally to be significantly lower.

Concluding comments

The study of comparative IR is in large part the study of institutions of joint regulation. Yet given the accumulating ambivalence around the continuing relevance of institutions in the context of a multifaceted internationalization, it appears ever more urgent to heed Pontusson's (2000: 325) advice that 'We need to specify which institutions matter and how they matter.' Several studies have already shown that various facets of the architecture of joint regulation play some role in comparative historical developments in pay inequality. Yet this leaves much unclear. This article examines whether architectures of joint regulation have the capacity to account for the cross-national comparative variation in pay inequality across the advanced industrialized world at the turn of the millennium.

The analysis shows that the procedural formalities which have been core referents in the comparative IR literature cannot offer a robust account of cross-national variation in pay inequality. While in the absence of MEB and extensive coverage pay inequality is everywhere comparatively high, when present these institutions now convey imperatives which are so various that they cannot be regarded as having their own significance. Bargaining coordination and organized decentralization are similarly varied conveyors. Such procedural formalities may be intriguing as objects of study, and may legitimate IR actors and contribute to the stability of the IR system, but this does not of itself imply anything by way of what Clegg (1976: 15) termed 'regulatory effect'.

This does not mean that the architecture of joint regulation lacks the capacity to account for comparative pay inequality. Pay inequality is tightly and robustly linked to the density of unionization. It thus seems that, rather than stressing procedural formalities, the account of pay inequality which the architecture of joint regulation can offer must stress the restrictions placed on managerial prerogative by the sheer strength of unions or weight of the architecture of joint regulation. In other terms, it is the strength, rather than the anatomy, of the body of joint regulation which seems to matter.

This has implications for comparative industrial relations research more generally. In particular, it highlights the significance of the recent contributions of Arrowsmith et al. (2003), Marginson and Sisson (2004), Visser (2005), Stokke (2008) and Doellgast et al. (2009), which have with their differing substantive foci and in their different ways complemented attention to procedural formalities with detailed consideration of the immediate regulatory effect of joint regulation. The findings here suggest that the shifting emphasis in these contributions signals the way forward for future assessment of the character and, most importantly, the substantial impact of joint regulation.

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Notes

1. Italy is excluded from the quantitative analysis here due to profound data difficulties. Inequality data for Italy are drawn from social security data on declared income rather than on a labour force survey; a matter of particular importance with the underground economy accounting in the mid-1990s for 16 percent of national employment (Regalia and Regini, 1998). There are, moreover, particular problems in characterization of the Italian architecture of joint regulation. There are no comparable estimates of coverage (see e.g. Traxler et al., 2001). Uncertainties over how the Scala Mobile of 1975–93 should be regarded further complicate assessments of centralization (see e.g. Pontusson, 2000) – but the extent of discrepancies in interpretation defies easy explanation. Traxler et al. (2001: Table III.1) code Italy as a case of industry bargaining through 1970–82, then peak bargaining 1983–93 and industry bargaining once more 1994–8. Regalia and Regini (1998) suggest that bargaining was centralized in the 1970s and then underwent a process of decentralization, before a recentralization in the 1990s. Iversen (1998) suggests a comparatively decentralized bargaining structure throughout.
2. Data for Belgium are for 1991–3, as Traxler et al. (2001) do not attempt to classify the level of bargaining in 1994–6 due to statutory pay control.
3. There are minor differences in the results using the centralization measure for 1991–3 in preference to that for 1994–6. In the 16-nation sample the correlation of centralization to D5/D1 is significant only at the 5 percent level, and in the 11-nation sample the correlation is just significant at the 10 percent level for both D9/D1 and D5/D1.

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