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Employee Representation in the Board Compared: A Fuzzy Sets Analysis of Corporate Governance, Unionism and Political Institutions[**]

Abstract – Why do employees have rights to representation within corporate boards in some countries, but not in others? Board-level codetermination is widely considered a distinctive feature of coordinated or nonliberal models of capitalism. Existing literature stresses three sets of explanations for codetermination rooted in corporate governance, union strength and political systems. The paper compares data from 22 OECD countries using the QCA method (Qualitative Comparative Analysis) and fuzzy sets approach to explore necessary and sufficient conditions for board-level codetermination. The results show two central pathways toward codetermination both rooted primarily in union coordination and consensual political systems, but with divergent implications for corporate governance systems in Scandinavia and Germany.

Unternehmensmitbestimmung im Vergleich: Eine Fuzzy Set Analyse von Corporate Governance, Gewerkschaften und Politik

Zusammenfassung – Warum existieren in einigen Ländern Mitbestimmungsrechte für Arbeitnehmer und in anderen nicht? Mitbestimmung auf der Unternehmensebene ist ein Merkmal des koordinierten oder nichtliberalen Kapitalismus. Bestehende Literatur betont drei Erklärungsansätze für die Mitbestimmung: Corporate governance, industrielle Beziehungen und politische Systeme. Dieser Aufsatz vergleicht 22 OECD-Länder mit Hilfe der QCA Methode (Qualiative Comparative Analysis) und nutzt die analytischen Möglichkeiten der 'fuzzy sets', um notwendige und hinreichende Bedingungen für Mitbestimmung zu untersuchen. Die Ergebnisse zeigen zwei unterschiedliche Konfigurationen, die zu Mitbestimmung führen. Diese beinhalten das Zusammenwirken von Gewerkschaften, starker Verhandlungsdemokratie und Großaktionären, die sich jedoch unterschiedlich auswirken auf Corporate Governance in Skandinavien und Deutschland.

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1.   Why revisit board-level representation?

Since the late 1990s, OECD countries have experienced a wave of international and national efforts to reform corporate governance regulation and establish codes of 'best practice'. These efforts largely reflect a particular notion of corporate governance that includes several elements: investor protection through transparency and legal rights for minority shareholders, corporate boards made up of independent outside directors, and the importance of 'shareholder value' as a criteria for management decision-making. While brief mention is sometimes about other stakeholders, such as in the OECD principles, the mainstream corporate governance debate has largely steered clear of any explicit notion of formal modes of employee participation. By contrast, for countries such as Germany, these debates have focused growing attention on the future of employee representation within corporate boards.

One issue is that codetermination rights for employees are sometimes viewed as being antithetical to shareholder value. Some authors cite codetermination as a barrier to investors, and thus as a factor promoting greater ownership concentration (Roe 1999). Others argue more generally that the division of control rights between shareholders and employees make it unclear to whom managers are accountable (Parkinson/Kelly 2001). Recent research has shown that German firms have actually implemented more shareholder-oriented management practices in negotiation with employee representatives (Höpner 2003b; Jackson 2005a; Jackson et al. 2005; Vitols 2004), thus raising questions over hybrid forms of governance that modify or combine shareholder and stakeholder models.

Codetermination in Germany also faces challenges in adapting rules rooted in national law to multinational forms of enterprise. Whereas foreign investors now account for a growing proportion of ownership among large German corporations, employee representation falls under national law that mandate representation only for those employees within Germany. Likewise, the German model has proven difficult to 'export' through European law, given the severe divides among member states about the desirability of board-level codetermination. Nevertheless, some new Eastern European entrants to the European Union have adopted board-level employee representation. Similarly, regulations over the *Societies Europeanes* (SE) outline procedures for establishing employee representation in European multinational enterprises.

These debates raise a more fundamental historical question as to why some countries have systems of board-level codetermination rights and what factors influence the cross-national patterns of adoption or non-adoption of employee representation in the board?

The analysis will focus on four sets of explanations. One set stresses corporate governance factors such as ownership, the legal rights for shareholders, and the degree of capital market activity. Corporate governance is often seen as being closely related to codetermination. First, some authors have focused on common law and civil law systems, arguing that civil law systems are more likely to have extensive labour regulation (Botero et al. 2004). Second, countries with codetermination are argued to suffer from lower levels of capital market development, lesser protection of shareholders, and greater concentration of ownership (Pagano/Volpin 2004a; Roe 2003). The corporate

governance literature thus stresses the negative sum relationship between shareholder- or market-oriented corporate governance arrangements and codetermination.

A third set of explanations examines the role of labour unions in political struggles over codetermination in countries such as Germany (Potthoff 1957). More generally, differences in the power of unions may be seen as a key explanation of cross-national differences in codetermination. A fourth set of explanations stresses differences in political systems across countries. The strength of left-wing political parties and the predominance of consensus-oriented rather than majoritarian political systems may lead countries to enact codetermination law (Gourevitch 2003).

The analysis in this paper covers 22 OECD countries using cross-sectional data from the mid-1990s or multi-year country averages from the post-war period. The analysis employs the QCA (qualitative comparative analysis) approach outlined by Charles Ragin (Ragin 1987), and later refined through the application of fuzzy-set techniques (Ragin 2000). QCA applies boolean logic to analyse the necessary and sufficient conditions for an outcome based on set-theoretic relations, e.g. all countries with codetermination also have strong unions, or all countries with strong unions also have codetermination. This approach is particularly suitable to research designs limited to a relatively small number of observations, as in cross-country comparisons. Another strength is the ability to examine complex causal configurations, where particular combinations of factors are needed to explain a case. QCA thus offers a bridge between more traditional quantitative analysis and case studies.

The main findings demonstrate two distinct configurations of causal factors leading to employee codetermination. Both configurations contain a central combination of factors: namely, union coordination, consensus-oriented political systems and concentrated corporate ownership. The Scandinavian countries also share a stronger union density and greater power for centre-left forms of government, alongside stronger rights for shareholders. Meanwhile, Germany, Austria and the Netherlands follow more 'conservative' pathways where union density and left political parties are weaker, and corporate governance reflects weaker shareholder rights and lesser transparency in accounting.

The paper is organised as follows. Section 2 defines codetermination in terms of board-level representation of employees or labour union officials, and outlines the characteristics of codetermination in 22 OECD countries. Section 3 presents a series of hypotheses to explain cross-national patterns of codetermination based on corporate governance, industrial relations, political factors, and legal origins respectively. Section 4 presents the data and coding procedures of the QCA analysis, and Section 5 presents the main empirical results. Section 6 briefly turns back to the cases and interprets the historical development of codetermination in terms of the QCA configurations. Section 7 concludes with the implications of this study for contemporary debates on corporate governance.

2. Board-level employee representation within different configurations of capitalism

Board-level representation of employees may be defined in terms of rights to attend and participate in boardroom decisions as full or consultative members. Employee

representation can be considered an institutionalized 'national' characteristic to the extent that such rights are guaranteed by law or through tri-partite and other collective agreements.[1] Regulations differ in the *scope* of firms covered, such as public or private sector firms, as well as according to the size of firms. Regulations also differ in the *strength* of the rights extended, ranging from rights to information, consultation, and codetermination (Knudsen 1995), and the types of decisions to which they apply. The proportion of board *members* may also differ, as does the manner in which they are elected. A final issue concerns the *structure* of the board itself, namely whether countries have single-tier boards or dual-tier boards, where the supervisory and management functions are separated.

How widespread are employee rights for board-level representation? Table 1 summarises the basic characteristics of 22 OECD countries, and classifies countries along a six-point scale. In total, 14 countries can be seen as negative cases without substantial codetermination. Eight countries have no legal provisions for codetermination of any kind, including the major English-speaking countries of Australia, Canada, New Zealand, the UK and USA, as well as Japan, South Korea, and Switzerland.[2] Italy and Portugal also have no substantial codetermination legislation, although their constitutions recognise various rights of workers to participate in management in principle. Belgium, Greece, Ireland and Spain also fall into the negative group since employee representation is limited to state-owned enterprises or public service, such as railways, public transport or universities. These are assigned a membership score of 0.3, which suggests that they have 'some' codetermination but they are still classified as negative cases (being under 0.5) since no privately owned enterprises fall under legal requirements for codetermination – the exception being employee representation in some privatised state enterprises in Ireland.

Table 1: Codetermination rights in 22 OECD countries: Fuzzy-set memberships

Fuzzy Score	Characteristics	Countries
0	No constitutional rights, and no statutory or tri-partite regulation	Australia, Canada, Japan, New Zealand, South Korea, Switzerland, United Kingdom, United States
0.1	Constitutional rights, but no statutory or tri-partite regulation	Italy, Portugal
0.3	Some statutory or tri-partite regulation of public sector firms	Belgium, Greece, Ireland, Spain
0.7	Legal right to attend board at private firms.	France
0.9	Legal rights to nominate some members to the board.	Finland, Netherlands
1	Legal rights to board-level representation in private firms.	Austria, Denmark, Germany, Norway, Sweden

[1] For the purposes of this paper, purely paternalistic, private contractual arrangements are not considered here, nor are the election of employees to boards through share ownership schemes.

[2] In these countries, employee representation on the board of directors is quite rare. The election of employee representatives is a matter of contractual agreement or election occurs through employee share ownership.

Table 2: **Systems of board-level employee representation – overview**
(Sources: European Industrial Relations Observatory; and "Worker representation in Europe", Labour Research Department, LRD booklets, March 1998)

Country	Overview	Board System
Austria	Austrian companies have supervisory boards which oversee the action of the executive board, which runs the business on a day-to-day basis. The works council has the right to choose one-third of the representatives of the supervisory board in companies with at least 40 employees.	Dual
Denmark	Employees in Danish companies employing at least 50 employees are entitled (though not obliged) to elect at least two representatives on the board of directors and up to one-third of the total number of members.	Dual
Finland	In companies with 150 and more staff, employees have the right to board-level representation. Much of the detail, however, is left to local negotiation between the employer and the trade unions. There must be between one and four employee representatives, who should make up one-fifth of the body in which they sit.	Mixed
France	In private sector companies, the law provides for two or four representatives of the works council (depending on the number of managers and engineers employed and thus the number of electoral colleges for the works council) to attend meetings of the board of directors or supervisory board in a consultative capacity. In public sector organisations, elected employee representatives constitute up to one-third of the board and act as full members. Furthermore, in all limited companies, the shareholders may voluntarily decide to include elected employee representatives on the board.	Mixed
Germany	Employees in companies with 500 employees or more have representation on the supervisory board. The proportion of worker representatives varies from one-third, in companies with between 500 and 2,000 employees, to one-half, in companies with more than 2,000 workers. In these larger companies, the chair in effect represents the shareholders and has the casting vote. The one exception is the larger coal or iron and steel companies where the chair is independent. In the coal, iron and steel industries, the employee representatives can also appoint the "labour director", who is part of the management board.	Dual
Netherlands	Companies with more than 100 employees, a works council and a set amount of capital must set up a supervisory board. The supervisory board elects its own members and the shareholders, the works council and the executive board have the right to recommend new members. There is no fixed proportion of employee representatives on the board: a works council may uses its right of recommendation, but employees do not necessarily have a real representative on the board. According to the Civil Code, members of the supervisory board must take the interest of the company and the undertaking as a whole into account in the fulfilment of their duties; they are not employee representatives as such.	Dual
Norway	A significant proportion of private sector enterprises are regulated by legislation that safeguards employee representation on company boards - usually one-third of the total. In some, but far from all, state and municipal institutions, political authorities have decided that employees should be entitled to be represented on the boards. Similar voluntary arrangements may be found in companies that are not covered by the traditional legal framework.	Mixed
Sweden	Board-level representation is widespread in Sweden. In almost all companies with more than 25 employees, employees have the right to two board members. In companies with more than 1,000 employees engaged in at least two types of businesses, this rises to three board members. The employee representatives can never be in a majority.	Monistic

The remaining eight countries are classified as positive cases that have board-level employee representation rights in various degrees. Here the scope and depth of code-termination rights still varies considerably (Hans-Boeckler Foundation/European Trade Union Institute 2004). Notably, all eight cases are from Western Europe. Table 2 gives a summary presentation of codetermination rights in these eight countries.

The weakest case of employee representation is France. In that case, codetermination rights in public sector firms have existed since 1983. In addition, since 1982, French law allows two representatives of the works council to attend board or supervisory board meetings in private firms, albeit in a consultative capacity. This serves primarily as an extended right of the works council to information regarding the economic affairs of the company, but cannot be considered as rights of codetermination. Historically, French unions have shown little interest in board-level representation, given their syndicalist traditions (Goetschy 1983; Goyer/Hancke 2005).

Employee representation in the Netherlands is stronger. Under the so-called "structure law", works councils gain the right to nominate members for election to the supervisory board of Dutch firms through a system of "controlled co-optation" (van het Kaar 2004). This right can be considered weaker than some other systems of representation, since shareholders can still oppose appointments of particular persons. Moreover, even up to mid-1990s, relatively few companies made use of their right to nominate representatives, although this pattern is changing more recently. Dutch unions supported implementation of the original legislation in 1971. But unions remained relatively aloof from the system and did not actively encourage the use of these rights by works councils, since unions considered legal framework as weak and ineffective (ibid). Likewise, the Finnish system also leaves considerable scope for negotiation with employers regarding how many and in what boards (e.g. supervisory or management) employee representatives will sit (Hans-Boeckler Foundation/European Trade Union Institute 2004). Initial legislation emerged in 1979 and a more elaborate system was established in 1990. The negotiated character of representation means that board-level representation remains only moderately developed.

The final group constitutes cases of strong employee representation, including Austria, Denmark, Germany, Norway and Sweden. Germany's system of codetermination is widely considered to be the strongest and most extensive in the world (Streeck 1992). The unique characteristics of the German system constitute the system of 'parity' representation in firms with over 2,000 employees. Under this system, labour representatives hold 50% of the supervisory board seats. In the iron or coal or steel sectors, additional powers are held. For example, the tie-breaking vote held by the chairman of the board goes to a neutral person rather than a representative of the shareholders. Employees also elect a director to the management board who has responsibility for personnel affairs. The Austrian and Scandinavian systems are generally somewhat weaker. In the case of two-tier boards, representation generally constitutes one-third of supervisory board members. However, a detailed comparison and assessment of the relative strengths and weaknesses of these systems is beyond the scope of this paper. Here the concern is for their *broad similarities* among countries with relatively well-established systems of board-level employee representation.

3. Explanations of board-level employee representation

Why do some countries adopt systems of employee representation in the company board? Four main sets of explanations are considered here based on cross-national variation in corporate governance, union strength, political systems, and legal systems.

Corporate Governance

A large literature now illustrates important linkages between finance, management, and industrial relations. Most comparisons contrast two types of corporate governance systems, such as shareholder vs. stakeholder or outsider vs. insider systems. These models reflect strong negative correlations between national capital market development (e.g. shareholder rights, market capitalisation, ownership dispersion, or merger and acquisition activity), on the one hand, and industrial relations (e.g. co-ordination of wage bargaining and employment protection law) or employment (e.g. employee turnover) on the other (Hall/Gingerich 2004; Höpner 2005).

Countries with more market- or shareholder-oriented corporate governance such as the U.S. and UK have weaker provisions for employee voice and more market-oriented employment patterns (Gospel/Pendleton 2005). Meanwhile, countries outside the Anglo-Saxon world remain institutionally more diverse. Although corporate governance tends to be less market-oriented, some countries still have market-oriented characteristics. Likewise, employment tends to be more regulated, but patterns of unionisation or employee participation still differ widely. The diverse patterns among this group make it difficult to disentangle how different corporate governance characteristics are specifically related to industrial relations (Jackson 2005b).

Several interrelated arguments can be identified. First, codetermination is often related to concentrated ownership. Mark Roe argues that only concentrated owners can act as an effective counter-weight to employee representatives, since dispersed owners cannot easily exercise control rights (Roe 2003). Another related but inverse logic is that the demand for industrial democracy by employees was a response to concentrated ownership, since owners constituted an identifiable group whose authority should be limited. Second, strong bank-firm relationships may lead to more patient or socialised forms of corporate finance and control that are amenable to wider stakeholder participation (Hall/Soskice 2001b).

Third, legal rights for shareholders and legal rights for employees may be inversely related (Pagano/Volpin 2004a; Pagano/Volpin 2004b). For example, historical codifications of the nature of the corporation as a purely private association for shareholders may preclude conceptions of employee participation in the corporation (Donnelly et al. 2001). Fourth, active capital markets may limit the scope or effectiveness of employee participation. For example, hostile takeovers may lead to breaches of trust with existing stakeholders (Shleifer/Summers 1988) and thus undermine the credibility of long-term commitments. In sum, a working baseline hypothesis would negatively relate shareholder-oriented corporate governance and employee representation.

Proposition 1a: Countries with concentrated ownership of firms and strong bank-firm relationships are more likely to have board-level representation

than countries with less concentrated ownership and weak bank-firm relationships.

Proposition 1b: Countries with strong legal protection for shareholders and active capital markets are less likely to have board-level representation than countries with weaker shareholder protection and less active capital markets.

Industrial Relations

More traditional explanations of board-level representation for employees rest on the comparative strength of unions in different countries. As unions attempt to gain better wages and working conditions for their members, they may demand rights to participate in enterprise decision-making (Nagels/Sorge 1977). In Germany of the 1920s, radical versions of codetermination were advocated as a first step in part of a broader socialist political programme, but these demands eventually led to political compromise aimed to bring more radical unions into the fold of a social democratic capitalist social order. In the post-war period, German codetermination re-emerged as both an expression and institutionalization of union influence as a way to control the political abuse of economic power experienced under Nazism (Jackson 2001).

Codetermination is thus often seen as a political victory of strong unions. Hence, the strength of unions is a key factor explaining the existence of codetermination in Scandinavian countries, whereas other countries lack unions with the size and strength to win political struggles over codetermination.

Considerable controversy exists over how to conceptualise and measure the strength of labour unions. Union density is the normally seen as the central indicator. Membership constitutes a primary power resource that is correlated with greater centralization of collective bargaining and political influence of labour (Vernon 2006). Density is only loosely linked with the rates of coverage under collective bargaining agreements, as well as individual social rights. While density rates have changed greatly over the last several decades as union membership declines, the relative rates of density among OECD countries is quite stable and gives a robust measure of comparative differences.

However, this argument about unions is incomplete. The structure of unions and the patterns of collective bargaining also matter. The organizational structure of unions can be differentiated along three ideal types: class, occupation, and enterprise models (Dore 1996; Streeck 1993). These different types of union structure influence employee orientation toward internal participation in corporate decisions or external control through collection action (Aguilera/Jackson 2003).

Craft unions may prefer to influence firms' decisions externally with the threat of collective action (e.g. strikes). Craft unions recruit members based on occupation and may find employee identification with a particular firm as a threat to their own interests, as is often cited in the British case. Craft unions stress a separation from managerial responsibility, and employee representation is independent of management, preserved in strict separation from co-operative institutions that engage employees in firms' decision-making. Conversely, enterprise-based unions recruit members among employees within a particular firm and may be more inclined to participate in com-

pany decision-making in the interest of securing long-term employment and internal promotion prospects, as in Japan. However, enterprise unions are also likely to be too isolated and uncoordinated to articulate a political demand for legal rights to board-level representation.

Broader class-based forms of unions may be best situated for board-level employee participation. Class-based unions may share with craft unions a deep scepticism of enterprise-based representation as potentially competing with broader forms of worker solidarity. Some politicised forms of unionism, such as in France or Italy, have proven quite hostile to codetermination. Yet class-based unions may still have strong interests in pursuing board-level representation. Class-based unions are most likely to advocate broad ideological programmes of socialism or economic democracy. Moreover, such unions may see enterprise-based representation as a useful extension of union influence into firms, particularly where collective bargaining takes place on in a multi-employer framework. For example, industry-wide collective bargaining is relatively remote to individual enterprises and may leave a gap to be filled at the enterprise level (Clegg 1976). Firm-level employee participation, such as works councils, may help to interpret and monitor the implementation of collective agreements. Board-level representation may also be easier where firms fall under centralised industry-wide or national-level collective bargaining agreements. Employee representatives in the board are relatively remote from negotiations over the distribution of wages, since these are partially shifted outside the gambit of individual firms and into the sphere of multi-employer negotiation.

Thus, the relationship between unions and board-level representation appears to have two elements. Unions must be sufficiently strong in terms of membership to win political battles over codetermination, but their internal structure must also facilitate articulation of worker interests that are in line with enterprise-based participation. Here encompassing class-based forms of unionism may be the most congenial to dealing with the contradictions of employee participation. While no clear indices exist to compare the degree of different forms of unionism, a proxy for encompassing unions can be taken from various indices that assess the degree of centralisation in collective bargaining or 'coordination' among unions and employers.

Proposition 2:   Countries with strong unions and coordinated collective bargaining are more likely to have board-level representation than countries with weak unions and less coordinated collective bargaining.

Political Systems

While the first two hypotheses look at the owners and employees of the corporation in isolation, employee representation may be the result of struggles between these groups in the political arena. The institutional characteristics of the political arena may therefore be an important determinate of outcomes in struggles for corporate control (Fligstein 1990; Gourevitch 2003; Roe 2003; Streeck/Yamamura 2001).

Employee representation is often linked to the strength of left-wing political parties. In countries where 'social democracy' is strong, the political left may attempt to democratise control rights over corporate decision making as part of a broader socialist or social democratic political agenda (Roe 2003). Meanwhile, political movements

against corporate power in the liberal U.S. case during the time of the New Deal also set out to tame and regulate markets, fragmenting the concentration of economic power, but fell far short of attempting to legislate participation rights for employees (Roe 1994).

The politics of corporate governance may also reflect complex cross-class coalitions.[3] For example, German unions sided with leftist political parties in supporting 'organized capital' such as banks in Weimar Germany, but following World War II unions and left parties sided more with small shareholders in trying to curtail the economic power of large industrialists (Höpner 2004). Likewise, the first codetermination legislation in post-war Germany was passed under a conservative Christian Democratic (CDU) Union government. The CDU faced an exceptional need to build legitimacy for the post-Nazi political regime and satisfy pressures from unions and Allied occupation authorities—thus drawing upon the social democratic legacy of the Weimar period.

Another political argument stresses political institutions themselves, such as the nature of the electoral system and competition between political parties. Political institutions favour certain kinds of coalitions regarding corporate governance (Pagano/Volpin 2004b). A key element here is whether or not electoral and political systems are majoritarian or consensus-based (Lijphart 1999). Majoritarian systems are affected by small swings in electoral results, whereas consensus-based systems integrate more interest groups. Consensus systems are more supportive of credible commitments toward cooperation among corporate stakeholders, since public policy may be less volatile (Hall/Soskice 2001a). Perhaps more fundamentally, state traditions based on strong consensus and sharing of power between public and private domains may influence the use of public power to institutionalise stakeholder participation in private corporations (Crouch 1993).

Proposition 3:   Countries with strong leftist political parties and consensus-oriented political systems are more likely to have board-level representation than countries with weak leftist parties and majoritarian political systems.

Legal Systems

A final explanation relates to the nature of legal systems. The legal origins theory emerged in debates about differences in corporate ownership and finance, stressing the central distinction between common law and civil law traditions for investor protection (La Porta et al. 1998). This theory has recently been extended to the regulation of labour, arguing that civil law countries with French and Scandinavian legal origin have higher levels of labour relations than do common law countries (Botero et al. 2004). Common law is characterised by juries, independent judges and judicial discretion, rather than codes. Common law countries are thus seen as relying more on market and contractual modes of governance. Civil law traditions use more regulation to govern business activity, reflecting greater intervention in private

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[3]   The concept of corporate governance as coalition has important roots in economics (Aoki 1984), but also in sociological and political models of the firm (Aguilera/Jackson 2003; Cyert/March 1963; Höpner 2005).

govern business activity, reflecting greater intervention in private economic organisation through statutory means.

Proposition 4:   Countries with civil law traditions are more likely to have board-level representation than countries with common law traditions.

4.   The QCA approach: Data and method

Evaluating these four propositions presents methodological challenges that are well known in comparative research. A small N problem arises, since the number of OECD countries is small relative to the number of potential explanatory variables and do not permit statistical analysis (Lijphart 1971). Moreover, statistical models make assumptions about how variables combine based on their marginal effects while holding other factors constant based on their average value. This assumption is at odds with theories of institutional complementarity (Aoki 2001) that view institutions as having contingent effects based on the presence or absence of other institutions. Outcomes may result from a particular conjunction of multiple variables (Ragin 2000).

As a consequence, comparative research is often based on country case studies with rich empirical detail, but limited generalisation. In an effort to bridge the gap between cases studies and statistical analysis, this paper employs a relatively new approach of qualitative comparative analysis (QCA) based on the logic of fuzzy sets. The QCA approach has been advocated for small-N research designs (5-50 cases), and is increasingly applied throughout the social sciences (Koenig-Archibugi 2004; Kogut et al. 2004).

QCA methods are tools for making inferences about necessary and sufficient conditions for an outcome based on Boolean algebra (Ragin 2000). Fuzzy-sets overcome the limitations of Boolean sets, based on dichotomous presence or absence of a variable, to situations where cases display different degrees of property. To conduct the analysis, empirical indicators are re-scored between 0 and 1 according to the degree of membership in the conceptual category. A membership score of 1 represents a case that is 'fully in' the category and 0 is 'fully out.' 0.5 represents the transition point where a case is 'neither in, nor out.' In this paper, a six-value fuzzy set was used with the values 1, 0.9, 0.7, 0.3, 0.1 and 0. The country with the lowest value on each variable was assigned a score of zero and the country with the highest value was assigned a score of one. All other countries received intermediate values.

Data for 22 OECD countries was compiled from various available sources to explore the four propositions (see Appendix for sources). Corporate governance measures included capital market activity, mergers and acquisitions, legal protection for investors, the quality of accounting rules, ownership concentration and ownership by banks. Data on industrial relations include union density and a measure of coordination in collective bargaining. Political variables included the rule by centre-left governments, the proportionality of electoral systems, and the number of active political parties. Most of the data relate to the mid-1990s, but averages taken from longer time-series where possible. The data set is less than ideal, since institutional characteristics should be measured at the time when codetermination laws were passed, which often date to the 1950s or 1970s. The QCA analysis should thus be seen as an exploratory

comparison to be elaborated in dialogue with historical evidence from the various cases.

The fuzzy membership values are reported in Table 3. Three aggregated variables were also constructed based on joint membership along several variables. 'CG-market' is a measure of the degree of capital market activity based on measures of equity market training and mergers activity. 'CG-legal' is a measure of the legal aspects of corporate governance based on investor protection and accounting variables. 'Consensus' measure the consensus-orientation of the political system based on proportional electoral systems and a high number of effective political parties. Since few countries have predominately centre-left governments or highly consensual political systems, the variables for centre-left government and consensual political systems were also recoded using the square root of the original score. This modified score lowers the threshold of membership without affecting the score of full or non-members. This procedure is equivalent of 'diluting' the conceptual category giving membership in the set of countries with some minimum level of X (see Ragin 2000).

Table 3   Fuzzy membership scores: 22 OECD countries

country	emp-board	cg-market	accoun-ting	investor	cg-legal	con-centra-tion	bank	union	coordi-nation	centre-left	consen-sus	com-monlaw
Australia	0	0.9	0.9	0.9	0.9	0.3	0.3	0.7	0.3	0.57	0.32	1
Austria	1	0.3	0.1	0.3	0.1	1	0	0.9	1	0.41	0.55	0
Belgium	0.3	0	0.3	0	0	1	1	0.9	0.3	0	0.84	0
Canada	0	0.9	0.9	1	0.9	0.3	0	0.3	0	0.91	0.32	1
Denmark	1	0.7	0.3	0.3	0.3	0.9	0	1	1	0.91	0.95	0
Finland	0.9	0.3	1	0.7	0.7	0.7	1	0.9	1	1	0.95	0
France	0.7	0.3	0.7	0.7	0.7	0.7	1	0.1	0.3	0.57	0	0
Germany	1	0.3	0.3	0.1	0.1	0.9	1	0.3	0.7	0.57	0.84	0
Greece	0.3	0.1	0.1	0.3	0.1	1	0.3	0.1	0	0.41	0.32	0
Ireland	0.3	0.3	0.7	0.9	0.7	0.3	0	0.7	0.3	0	0.84	1
Italy	0.1	0	0.3	0.1	0.1	1	0	0.7	0.3	0.57	0.84	0
Japan	0	0	0.3	0.9	0.3	0.3	0.7	0.3	0.3	0	0.84	0
Netherlands	0.9	0.3	0.3	0.3	0.3	0.7	0	0.3	0.7	0.41	0.95	0
N. Zealand	0	0.3	0.7	0.9	0.7	0.7	0	0.3	0.3	0.82	0	1
Norway	1	0.9	0.9	0.9	0.9	0.9	0.7	0.9	1	0.91	0.84	0
Portugal	0.1	0.1	0	0.7	0	1	0.7	0.3	0.3	0	0.84	0
S. Korea	0	0	0.3	0.3	0.3	0.3	0	0	0.3	0.7	0	0
Spain	0.3	0.3	0.3	0.9	0.3	1	1	0	0.3	0.57	0.55	0
Sweden	1	0.7	1	0.7	0.7	0.7	1	1	1	1	0.84	0
Switzerland	0	0.7	0.7	0.3	0.3	0.3	0.3	0.3	0.3	0.91	0.95	0
UK	0	0.9	1	1	1	0.1	0.3	0.7	0	0.41	0.32	1
USA	0	0.9	0.7	1	0.7	0	0	0.1	0	0.91	0.32	1

The first step in the analysis is to look for all causal conditions with membership scores that are consistently greater than or equal to outcome membership scores. If a causal condition appears in all of the cases (e.g. all countries with codetermination have strong unions), then this condition passes a test of necessity. A probabilistic interpretation can be made to take into account statistical significance of a benchmark proportion of cases. In this paper, tests for 'necessary conditions' were based on a

proportion of positive cases exceeding 70% and achieve a significance of .10. A second step is to examine sufficiency by comparing membership scores in the outcome with the score of all logically possible combinations of causal conditions. A condition or set of conditions may be considered sufficient for an outcome if membership in the cause is consistently less than or equal to membership in the outcome (e.g. all countries with strong unions have codetermination). The fs/QCA software helps generate a parsimonious model by eliminating those combinations of factors that pass the test of sufficiency, but are logically redundant. The fs/QCA software may incorporate simplifying assumptions if missing cases are viewed as being theoretically irrelevant. This analysis includes no simplifying assumptions and all missing cases were coded as negative outcomes.

In this paper, the analysis of sufficiency incorporates an fs/QCA algorithm that refines the strictly proportional analysis mentioned above. Rather than the proportion of cases, Ragin proposes looking at a measure of consistency based on the percentage of membership in a cause that is consistent (e.g. less than or equal) with an outcome (Ragin 2004). A consistency score of 70 percent or greater more was interpreted as a benchmark for a cause being sufficient for an outcome.

It is worth noting that the hypotheses outlined in the previous section were written in terms of links between single institutional features and the likelihood of there being employee representation. The QCA analysis actually tests each variable individually for being both a necessary condition or a sufficient condition for employee representation. Furthermore, the QCA analysis of sufficient conditions examines all possible combinations of the independent variables in an inductive fashion. QCA thus incorporates the written hypotheses, but actually explores a wider set of hypotheses based on the different combinations of variables.

5. Results

Table 4 reports the fuzzy-set tests for whether the presence or absence of corporate governance, union and political variables are necessary conditions for codetermination. The presence of a condition is indicated with CAPITAL letters, and the absence by lower case letters. The coefficients show the proportion of cases where membership in the cause was lower than membership in the outcome based on the 14 cases where score codetermination exceeds zero. If this proportion exceeds 70%, a P value describes the probability whether the proportion is statistically significant based on the number of cases.

Necessary Conditions

None of the corporate governance variables proved to be necessary for board-level employee representation. The proportion of cases without strong capital market activity was less than half. Likewise, the proportion of cases with weak legal protection was less than half. An important implication is that the absence of capital market pressures or legal rights for shareholders is not a necessary prerequisite for codetermination. Several cases of strong codetermination (e.g. Sweden, Finland and Norway) have moderately strong investor rights and active capital markets. These cases suggest the

potential compatibility of employee participation within a moderately market-oriented corporate governance regime.

Table 4   Results of fuzzy-set tests: Necessary conditions for board-level employee representation

Variable	N Cause >= Outcome	Observed Proportion	Binomial p
cg-market	7	0.50	
CG-MARKET	3	0.21	
cg-legal	6	0.43	
CG-LEGAL	4	0.29	
concentration	1	0.07	
CONCENTRATION	8	0.57	
bank	7	0.50	
BANK	8	0.57	
union	6	0.43	
UNION	7	0.50	
coordination	7	0.50	
COORDINATION	10	0.71	0.584
centre-left	6	0.43	
CENTRE-LEFT	5	0.36	
electproportion	7	0.50	
ELECTPROPORTION	9	0.64	
parties	4	0.29	
PARTIES	8	0.57	
Consensus	5	0.36	
CONSENSUS	8	0.57	
commonlaw	13	0.93	0.047*
COMMONLAW	1	0.07	

Number of Cases Tested (Outcome > 0): 14 (63.6% of Total)
Test Proportion: 0.70
          *p < 0.10

Turning to ownership, the proportion of cases of codetermination with strong bank ownership was only 57%. Here Austria, Denmark and the Netherlands lack strong bank ownership. The proportion of cases with concentrated ownership was also 57%. A visual inspection of the concentration data in Figure 1 shows that most of the non-consistent cases are very near misses. Sweden has strong codetermination, but only moderate ownership concentration compared to countries such as Italy or Portugal. Denmark, Germany and Norway also have very high levels of concentration. The clustering of cases as 'near misses' could suggest that some minimum threshold level of ownership concentration is a necessary condition for board-level employee representation.

Union density and coordinated collective bargaining failed to meet the test proportions as necessary conditions for codetermination. Germany and the Netherlands are major exceptions, since these countries lack the very high union density found in

Scandinavia. Likewise, France has very low union density despite having a weak form of codetermination. Coordinated collective bargaining was present in 71% of cases with codetermination, although the proportion failed to be statistically significant given the number of cases. Relative to the Scandinavian countries, Germany, the Netherlands and France have slightly less coordinated bargaining. But as with ownership concentration, these cases are rather near misses and might suggest that a lower threshold of union coordination might pass the test for necessity.

Figure 1: Employee representation and ownership concentration
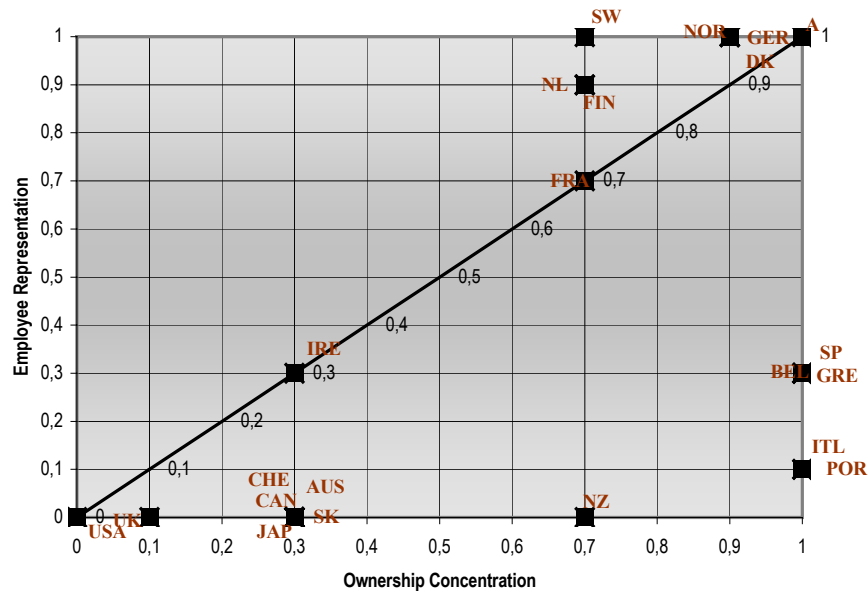
No political factors passed the test as being necessary for codetermination. Strong centre-left governments were absent in Austria and the Netherlands. Germany and France also have weaker left party power than other Scandinavian countries. Consensual political systems were found in 57% of cases with codetermination. France is again a strong exception case of codetermination in the context of a highly disproportional electoral system.

Turning to legal systems, common law was absent in 13 of the 14 cases of codetermination. Ireland was the one exception, where employee representation exists in state-run or formerly state enterprises. All other cases of employee representation were among countries with various civil law traditions. Thus, the analysis suggests that the absence of common law is a necessary (but not sufficient) condition for employee representation. However, it is difficult to say whether common law has a strong incompatibility with employee representation or whether common law exerts indirect effects through unobserved variables. For example, common law correlates strongly with other hypothesised factors, such as investor protection, electoral systems and patterns of unionism. In particular, given the limited diversity of cases, no common law county also has strong coordinated collective bargaining that would permit a direct test of these two competing hypotheses, as shall be discussed in the conclusion.

Sufficient Conditions

The second analysis turns to sufficient conditions for board-level employee representation. Table 5 presents tests for the sufficiency in the form of truth tables. The truth tables are based on a dichotomous coding of the fuzzy set membership, but the set theoretic relationship is still assessed in terms of sum of consistent fuzzy membership in the cause as a proportion of total membership in the outcome. A threshold of 70% was chosen to assess cases as being consistent. Causal conditions passing this mark are considered as 'almost always sufficient' to produce a particular outcome. In addition, the fs/QCA software calculates a measure of coverage as the ratio of the sum of consistent Xi to the sum of Yi. Coverage thus shows the proportion of total membership in outcome was explained by the causal condition. Where solutions have multiple terms, fs/QCA also calculates unique coverage as the coverage that does not overlap with other solution terms.

Table 5: Truth tables: Corporate governance, industrial relations and politics

Table 5A: Individual conditions

union	weight	number	empboard	yconsist	nconsist
0	1.018182	12	0	0.321429	0.767857
1	0.981818	10	0	0.583333	0.509259
coordination	weight	number	empboard	yconsist	nconsist
0	1.118182	15	0	0.219512	0.902439
1	0.881818	7	1	0.793814	0.360825
centre-left	weight	number	empboard	yconsist	nconsist
1	1.141818	14	0	0.507962	0.579618
0	0.858182	8	0	0.383475	0.733051
consensus	weight	number	empboard	yconsist	nconsist
1	1.196782	14	0	0.547406	0.545974
0	0.803218	8	0	0.33082	0.808315
cg-legal	weight	number	empboard	yconsist	nconsist
0	1.081818	12	0	0.470588	0.638655
1	0.918182	10	0	0.455446	0.673267
cg-market	weight	number	empboard	yconsist	nconsist
0	1.163636	14	0	0.4375	0.664062
1	0.836364	8	0	0.5	0.641304
bank					
0	1.154545	13	0	0.314961	0.716535
1	0.845455	9	0	0.569892	0.473118
concentration	weight	number	empboard	yconsist	nconsist
1	1.281818	14	0	0.560284	0.496454
0	0.718182	8	0	0.227848	0.873418

Table 5A reports the results of each independent variable in isolation. The only significant result was coordinated collective bargaining. All 7 cases of strong coordination (a score of 0.5 or above) also had board-level employee representation (a score of 0.5 or above) and achieved an overall consistency of 79.4%. Thus, coordinated collective bargaining passes the test as a sufficient condition and achieves very high coverage score of 0.865. The only case of strong codetermination without coordinated bar-

gaining was France. Notably, the results for legal origin show that while the absence of common law was a necessary condition for codetermination, civil law is not in itself a sufficient condition. As such, legal origins have relatively little weight in explaining positive cases of codetermination, but may help explain the absence of codetermination among common law countries.

Table 5B: Joint conditions by category

Unionization						
union	coordination	weight	number	empboard	yconsist	nconsist
0	0	1.34	10	0	0.27	0.88
1	0	0.85	5	0	0.27	0.92
1	1	1.12	5	1	0.80	0.35
0	1	0.69	2	0	0.60	0.69
Politics						
centre-left	consensus	weight	number	empboard	yconsist	nconsist
1	1	1.26	8	0	0.65	0.45
0	1	1.06	6	0	0.44	0.73
1	0	0.97	6	0	0.35	0.81
0	0	0.71	2	0	0.49	0.82

Corporate Governance								
cg-market	cg-legal	concen-tration	bank	weight	number	empboard	yconsist	nconsist
0	0	1	0	1.83	4	0	0.48	0.69
0	0	1	1	1.73	4	0	0.53	0.69
1	1	0	0	1.42	4	0	0.19	0.91
0	1	1	1	1.05	2	1	0.74	0.52
1	1	1	1	1.09	2	1	0.78	0.47
0	0	0	0	0.92	1	0	0.30	0.85
0	0	0	1	0.75	1	0	0.50	0.68
0	1	0	0	0.95	1	0	0.29	0.86
0	1	1	0	1.085	1	0	0.41	0.78
1	0	0	0	0.80	1	0	0.35	0.83
1	0	1	0	0.92	1	1	0.70	0.52
0	1	0	1	0.64	0	na	0.58	0.63
1	0	0	1	0.51	0	na	0.73	0.53
1	0	1	1	0.75	0	na	0.82	0.59
1	1	0	1	0.68	0	na	0.55	0.65
1	1	1	0	0.92	0	na	0.52	0.67

Table 5B presents truth tables joining the four corporate governance, two industrial relations, and two political variables respectively. No combination of the political variables passed the test for sufficiency. However, among industrial relations variables, the combination of high bargaining coordination and a high level of union membership passes the test of sufficiency and displays a very high rate of coverage:

UNION * COORDINATION → EMPBOARD
(solution coverage: 0.700, solution consistency: 0.795)

The four corporate governance variables entail 16 possible configurations, and five of which have no empirical cases. Two existing configurations passed the tests for sufficiency:

CG-LEGAL*CONCENTRATION*BANK+
(coverage: 0.371, unique coverage: 0.348, consistency: 0.767)

CG-MARKET*cg-legal*CONCENTRATION*bank
(coverage: 0.213, unique coverage: 0.191, consistency: 0.704)

→ EMPBOARD

solution coverage: 0.562
solution consistency: 0.781

The first covers the cases of Finland, Norway, Sweden and France, whereas the second covers the case of Denmark. Neither corporate governance configuration covers Austria, Germany or the Netherlands. Overall the total coverage of the corporate governance model is lower than the industrial relations model, suggesting lesser explanatory weight. The corporate governance results also partially contradict our hypotheses. In particular, the first solution includes strong legal protection for investors, rather than weak protection.

Table 5C: Combined conditions

uni-on	coor-dina-tion	cent-re-left	con-sen-sus	cg-mar-ket	cg-le-gal	con-centr-ation	bank	weight	N	emp-board	ycon-sist	ncon-sist
0	0	1	0	1	1	0	0	2.33	2	0	0.02	1.00
1	1	1	1	1	1	1	1	2.36	2	1	0.75	0.29
0	0	0	0	0	0	1	0	1.98	1	0	0.35	1.00
0	0	0	1	0	0	0	1	0.97	1	0	0.10	0.90
0	0	0	1	0	0	1	1	2.28	1	0	0.47	0.87
0	0	1	0	0	0	0	0	1.38	1	0	0.04	1.00
0	0	1	0	0	1	1	0	1.58	1	0	0.16	1.00
0	0	1	0	0	1	1	1	1.30	1	1	0.81	0.72
0	0	1	1	0	0	1	1	1.52	1	0	0.58	0.81
0	0	1	1	1	0	0	0	1.47	1	0	0.20	0.87
0	1	0	1	0	0	1	0	2.13	1	0	0.59	0.69
0	1	1	1	0	0	1	1	1.45	1	1	0.73	0.54
1	0	0	0	1	1	0	0	1.62	1	0	0.13	1.00
1	0	0	1	0	0	1	1	1.86	1	0	0.42	0.84
1	0	0	1	0	1	0	0	1.74	1	0	0.34	0.89
1	0	1	0	1	1	0	0	1.75	1	0	0.03	1.00
1	0	1	1	0	0	1	0	1.45	1	0	0.34	0.86
1	1	0	1	0	0	1	0	2.38	1	0	0.63	0.62
1	1	1	1	0	1	1	1	1.57	1	1	0.75	0.31
1	1	1	1	1	0	1	0	1.77	1	1	0.78	0.28

 **All 236 other possible configurations have no empirical cases

Table 5C presents the truth table for eight independent variables. The variable 'common law' was dropped in the remaining analysis of sufficiency, since any necessary condition will always appear in all combinations of sufficient conditions. Note

that the eight remaining variables yield $2^8 = 256$ possible configurations. Of these 256, only 20 configurations have empirical cases. Increasing the number of variables relative to cases entails that each case is likely to become increasingly unique. Consequently, the QCA results become less robust because no other cases are sufficiently similar to falsify a particular configuration and thus even random data might produce consistent results (Marx 2005). To cope with these restrictions, a certain ratio of variables to cases should be maintained in QCA. For an analysis of 22 countries, five or less independent variables is recommended. While six independent variables can be used with only a small likelihood of error, increasing to seven or more variables greatly increases the risk of finding random configurations that pass the test for sufficiency (ibid).

The subsequent analysis thus incorporates a smaller number of variables. Table 6 presents results using the two industrial relations and two political variables with different combinations of corporate governance variables. Table 6A-6D includes each of the four corporate governance variables individually. Table 6A shows that including legal regulation results in two significant configurations. The combination of union coordination, consensual political systems and the absence of legal protection for investors passed the test of sufficiency. This solution covers the cases of Austria, Germany and the Netherlands. Likewise, the combination of strong union membership, union coordination, centre-left government and consensual political systems passed the test of sufficiency. This solution covers the Scandinavian cases of Denmark, Finland, Norway and Sweden. France is not covered by this model. Table 6B shows two results identical to model 6A, but with capital market activity replacing investor protection. Table 6C and Table 6D report results for ownership concentration and bank ownership respectively, but these have lower levels of coverage. Next, all pair-wise combinations of corporate governance variables were tested, and the solution with the highest coverage reported in Table 6E. This model is also identical to Table 6A, but with the presence of high ownership concentration in both configurations.

Table 6   Results of fuzzy-set tests: Sufficient conditions for board-level employee representation

Model A:

      EMPBOARD = UNION + COORDINATION + CENTRE-LEFT + CONSENSUS + CG-LEGAL
COORDINATION*CONSENSUS*cg-legal+
(coverage: 0.499744   unique coverage: 0.217722   consistency: 0.801720)

UNION*COORDINATION*CENTRE-LEFT*CONSENSUS
(coverage: 0.516103   unique coverage: 0.234081   consistency: 0.851668)

→ EMPBOARD

solution coverage: 0.733825
solution consistency: 0.833994

Model B:

EMPBOARD = UNION + COORDINATION + CENTRE-LEFT + CONSENSUS + CG-MARKET

COORDINATION*SOMECONSENSUS*cg-market+
(coverage: 0.499744   unique coverage: 0.217722   consistency: 0.801720)

UNION*COORDINATION*CENTRE-LEFT*CONSENSUS
(coverage: 0.516103   unique coverage: 0.234081   consistency: 0.851668)

→ EMPBOARD

solution coverage: 0.733825
solution consistency: 0.833994

Model C:

EMPBOARD = UNION + COORDINATION + CENTRE-LEFT + CONSENSUS + CONCENTRATION

UNION*COORDINATION*CENTRE-LEFT*CONSENSUS*CONCENTRATION
(coverage: 0.477153 consistency: 0.841479)

→ EMPBOARD

solution coverage: 0.477153
solution consistency: 0.841479

Model D:

EMPBOARD = UNION + COORDINATION + CENTRE-LEFT + CONSENSUS + BANK

UNION*COORDINATION*CENTRE-LEFT*SOMECONSENSUS
(solution coverage: 0.516103, solution consistency: 0.851668)

→ EMPBOARD

Model E:

**EMPBOARD = UNION + COORDINATION + CENTRE-LEFT + CONSENSUS
+ CG-LEGAL + CONCENTRATION**

COORDINATION*CONSENSUS*cg-legal*CONCENTRATION +
(coverage: 0.499744   unique coverage: 0.217722   consistency: 0.801721)

UNION*COORDINATION*CENTRE-LEFT*CONSENSUS*CONCENTRATION
(coverage: 0.477153   unique coverage: 0.195130   consistency: 0.841479)

→ EMPBOARD

solution coverage: 0.694874
solution consistency: 0.826305

Model F:

**EMPBOARD = UNION + COORDINATION + CENTRE-LEFT + SOMECONSENSUS
+ CG-MARKET + CG-LEGAL + CONCENTRATION + BANK**

UNION*COORDINATION*CENTRE-LEFT*CONSENSUS*CG-LEGAL*CONCENTRATION*BANK+
(coverage: 0.247191, unique coverage: 0.213483, consistency: 0.785714)

union*COORDINATION*CENTRE-LEFT*CONSENSUS*cg-market*cg-legal*CONCENTRATION*BANK+
(coverage: 0.120225, unique coverage: 0.052809, consistency: 0.727891)

union*coordination*CENTRE-LEFT*consensus*cg-market*CG- LEGAL*CONCENTRATION*BANK+
(coverage: 0.120225, unique coverage: 0.075281, consistency: 0.809798)

UNION*COORDINATION*CENTRE-LEFT*CONSENSUS*CG-MARKET*cg-legal*CONCENTRATION*bank
(coverage: 0.157303, unique coverage: 0.146067, consistency: 0.777778)

solution coverage: 0.555056
solution consistency: 0.875886

Finally, Table 6F shows the results of the model including all eight variables. Given the problem of case uniqueness, this model results in a less parsimonious solution. For example, Denmark appears as distinct from the other Scandinavian cases. One configuration now encompasses France, which is characterised by low union membership and coordination, the absence of a consensual political system, but strong centre-left government, concentrated ownership and banks. Austria and the Netherlands are left unexplained.

6. From variables back to cases?

Comparing the results of the various fuzzy sets analyses leaves some puzzle as to which model is the 'best' explanation of board-level representation of employees. QCA models can be compared in terms of their coverage of cases, and the consistency of their predictions. However, a trade-off may still exist between theoretical complexity and parsimony. The most parsimonious set of sufficient conditions was the single variable of coordinated collective bargaining. The coordinated collective bargaining is related to arguments about the encompassing nature of union membership, as well as the compatibility of enterprise representation with collective bargaining. This factor proved to be sufficient in 7 out of the 8 key cases, the exception being France. This single factor sets countries with codetermination apart from the Anglo-Saxon, Mediterranean and East Asian countries in the OECD.

At the other extreme, the most complex solution including all 8 independent variables (Table 6F) was less satisfactory, since both Austria and the Netherlands could not be explained consistently in terms of all variables. Here the large number of variables increases the uniqueness of each case and results in a large number of configurations with 'missing cases' that cannot be minimised.
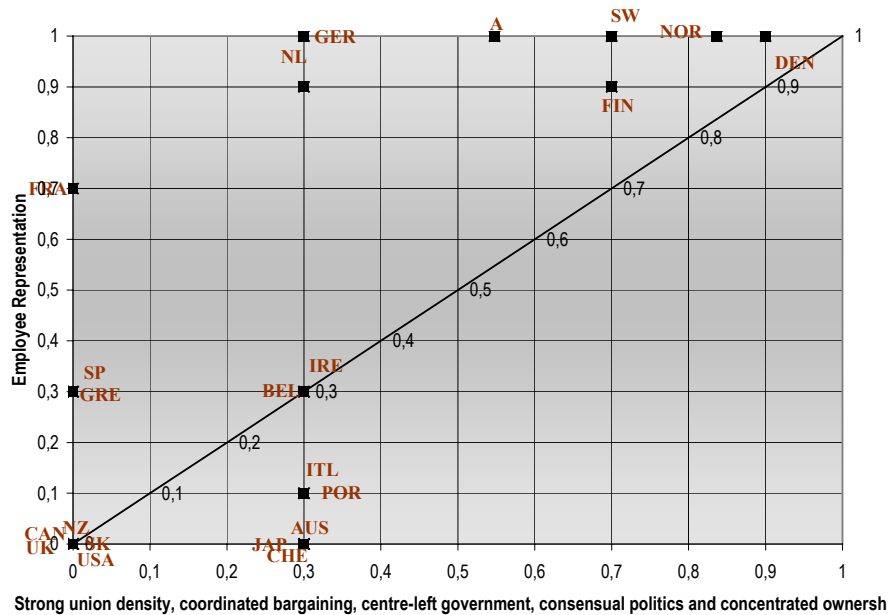
The model in Table 6E seems to offer a good balance of parsimony and complexity. This model sacrifices some degree of coverage compared to the coordination variable alone, but still contains seven of the eight cases of strong codetermination. Moreover, the model is theoretically richer, since it integrates the different theoretical arguments into a conjunctural model of causation that suggests potential historical interactions between the variables. Specifically, this model suggests two broad paths to board-level employee representation.

The first pattern is shown in Figure 2 and groups the Scandinavian countries of Sweden, Norway, Finland and Denmark around a number of key characteristics. Unions density is very strong and collective bargaining is highly coordinated, often at a national level. Union influence is enhanced by the presence of strong centre-left governments with participation from Social Democratic political parties, and those parties are integrated into strongly consensus-based political systems that support credible commitments and stable cross-class coalitions. The combination of these four factors are all in line with the hypotheses 2 and 3, and act jointly as sufficient conditions. These countries also have concentrated corporate ownership. However, this group include cases of both strong legal protection (Sweden, Norway, Finland) and weaker protection for shareholders (Denmark).

The Swedish case provides a useful illustration. Swedish unions and leftist parties were generally very strong. Meanwhile, corporate ownership is highly concentrated

among families. Large firms are relatively few in number, and focused on the export industry. Part of the political compromise, going back to the 1930s, was the support of strong banks and a taxation regime that would help to preserve concentrated private ownership but integrate this within a strong 'organised' national system of governance (Högfeldt 2004). Ownership in Sweden thereby remained highly concentrated, and the small and identifiable corporate elite was an important element supporting coordinated collective bargaining and political consensus (Reiter 2003). Meanwhile, the centralised Swedish labour unions and the Social Democratic party focused their attention on building the welfare state, but left issues of participation at the enterprise level free from state intervention. This changed in the 1970s, as demands for codetermination emerged during wildcat strikes by the miners' union directed at issues of authority in the workplace and the understanding that managers had too much unilateral control. While employers strictly opposed these plans, the alliance between the union federation and Social Democratic party was strong enough to pass codetermination rights, although they fell far short of more ambitious goals of collective ownership through the controversial wage earner funds (Blythe 2004). Today, Swedish codetermination is considered as a cooperative and effective institution (Levinson 2000).
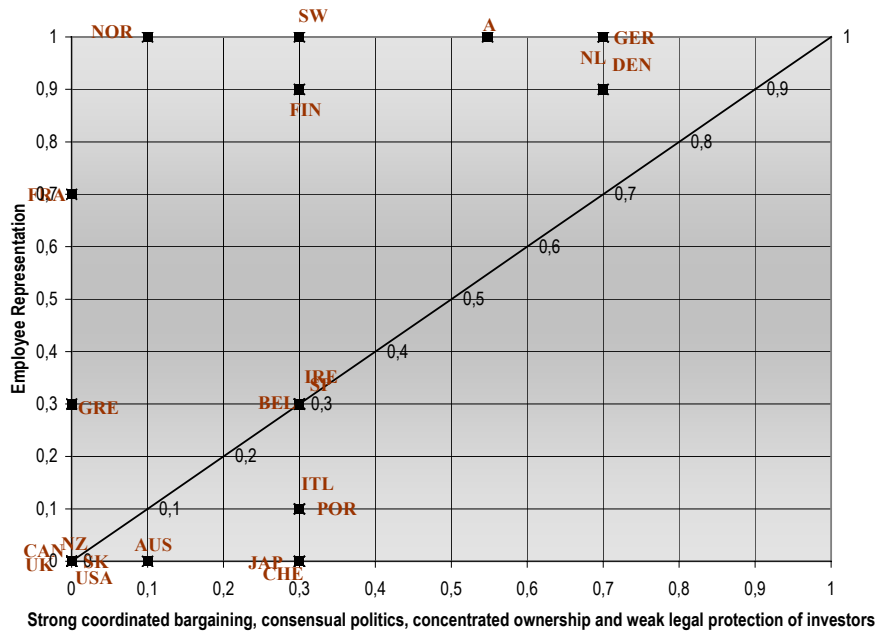
Figure 2: Employee representation and Scandinavian configuration

Strong union density, coordinated bargaining, centre-left government, consensual politics and concentrated ownersh

The second pattern is shown in Figure 3, grouping Austria, the Netherlands and Germany as a more 'conservative' route to codetermination. Similar to Scandinavia, these countries also have strong union coordination and consensus-based political systems that help to integrate labour into political compromises. However, these countries

don't necessarily have strong union membership or strong centre-left government to the same extent. The common feature among the three countries is the absence of strong shareholder rights. Here political compromise may have involved the integration of labour into the firm, but at the price of weak protection for small shareholders and weaker information disclosure and accounting rules. Here large owners, such as German banks or family-owned enterprises, were likely to have opposed such corporate governance measures that opened up the firm to outsider control.

Figure 3: Employee representation and Germanic configuration

Strong coordinated bargaining, consensual politics, concentrated ownership and weak legal protection of investors

In Austria and Germany, in particular, the formation of broad cross-class coalitions was an important part of democratisation following their defeat in World War II. The political demand for codetermination in Germany arose as a way to prevent the political abuse of economic power by industrialists in heavy industry under Nazi rule. The unions and left parties at the time were not powerful enough to impose codetermination throughout the economy. In this sense, the early codetermination laws were not an unqualified victory of the left, but a measure implemented by Christian Democratic government to gain legitimacy for prevailing patterns of corporate ownership, namely concentrated ownership by banks and families. In fact, the German Social Democratic Party has historically been the advocate of curtailing the power of banks and increasing information disclosure of firms (Höpner 2003a). In short, these characteristics of the German corporate governance may likely reflect the weakness of the left, rather than its strength as is often claimed (Roe 2003). The case of the Netherlands shares some important similarities with Germany. Dutch collective bargaining is also coordinated and politics is perhaps even more consensual. Ownership concentration is less and the Netherlands did not suffer the same political abuses of economic power dur-

ing wartime, perhaps leading to less need to tame large owners. Moreover, Dutch unions were historically more sceptical about codetermination. These subtle differences may help explain the weaker system of codetermination in the Netherlands.

France remains as puzzle in this analysis, as it shares almost none of the characteristics with the aforementioned groups. Codetermination in France seems to have been the result of a strong left party acting within a very disproportional electoral system. Under these conditions, the left was able to push through weak codetermination legislation without much support from either the weak and fragmented unions or large-scale owners. This rather unique set of factors may help explain the weakness and lack of legitimacy of codetermination in France. This also presents an interesting puzzle as to why the French Socialist party attempted to implement codetermination and also suggests useful comparisons with other cases of strong left parties and non-consensus based systems, such as Belgium.

7.   Conclusion and implications

This paper has analysed four sets of explanations for board-level employee representation using the QCA approach. None of the corporate governance factors or political factors alone were sufficient to explain codetermination. The strongest evidence was for industrial relations factors. Coordinated collective bargaining together with high union density proved to be sufficient to explain key cases of codetermination. Countries where unions are strong and collective bargaining is coordinated on a multi-employer basis also have enterprise-level codetermination. Some evidence also supports the legal origins theory. The absence of common law was also shown to be a necessary but not sufficient condition for codetermination. As such, legal origin does not offer a strong explanation for positive cases of codetermination. However, the result raises questions as to whether the common law tradition, with it's emphasis on contract rather than statute, in itself presents a significant barrier to codetermination. This question is counterfactual and cannot be answered empirically here given the limited diversity of existing cases. In particular, no common law countries also coordinated bargaining, a factor that proved sufficient for codetermination.

The strength of QCA analysis is often seen in it's ability to examine the conjunction of multiple causal factors. The analysis here suggested two broad paths to codetermination. Both paths have certain common elements—coordinated collective bargaining, consensual political systems and concentrated corporate ownership. In the Scandinavian group, these factors went together with a very strong political strength of the left through strong union density and strong centre-left political parties. In the Germanic group, unions and left parties were less strong but investor rights were weaker.

These differences in the political strength of left and degree of investor rights suggest some interesting conjectures about the politics of corporate governance (Höpner 2003a). In Scandinavia, the strength of unions and left parties allowed a political compromise with concentrated owners that involved not only codetermination, but usually also greater transparency and investor protection. In Germany, the comparative weakness of the unions and left led to codetermination rights, but allowed concentrated owners to shield themselves from both outside investors and employees representatives through less corporate transparency and investor rights. While this is

only a conjecture, the QCA results are suggestive for future historically-based comparisons of these cases.

In theoretical and policy terms, the Scandinavian case has strong implications for the future of stakeholder models of corporate governance that seek to institutionalise strong rights for both shareholders and employees. In particular, these cases contradict the expected negative relationship between employee rights and legal rights for shareholders. This may suggest that employee representation may lead countries to adopt stronger legal protection for shareholders, either as a way for shareholders to counterbalance employee influence or more likely as a response to demands for greater transparency by employees themselves.

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DATA APPENDIX

DEPENDENT VARIABLE

Employee Representation on the Board: Degree of membership among countries with employee representation on corporate boards. Six-point fuzzy scores were assigned based on whether law mandate representation (yes/no), its coverage of public/private sector, and the strength of employees stipulated within the board. Source: (European Foundation for the Improvement of Living and Working Conditions 1998)

CORPORATE GOVERNANCE VARIABLES

Capital Market Activity: A composite variable indicating the level of equity market activity is calculated as follows. A three-year average was calculated for domestic share turnover as a percentage of total market capitalization in 1995-1997 (World Bank Development Indicators database), and then added with the annual average of new issues as a percentage of market capitalization for the same period. To take account of substantial differences in size of equity markets across OECD countries, the combined trading and new issue data is corrected by market size in terms of the ratio of the number of domestic listed firms to population (in millions), with this information taken from La Porta et al. (1997: Table 2).

M&A Activity: Degree of membership in the group of countries active in domestic and foreign acquisitions. The measure includes the six-year average (1990-1995) of acquisitions in US million dollars acquired from the SDC dataset, weighted by GDP. Continuous fuzzy scores were assigned based on the acquisition percentage of GDP. Source: *SDC Platinum™ Worldwide Merger, Acquisitions & Alliances,* 1990-1995 and GDP from WDB.

Ownership Concentration: Degree of membership in the group of countries with concentrated ownership. Given the difficulties in measuring ownership concentration, this score uses two separate measures to derive a ranking. First, data from La Porta et al. (1997) to look at the percentage of firms with blockholders with 10%+ and 20%+ stakes across two panels of large and medium-sized firms. An average percentage of firms with blockholders was taken across the four panels. Second, La Porta et al. (1997) also report the aggregate blocks held by the

there largest shareholders. Countries are considered as having high concentration if the size of blocks is large and concentration predominates a large proportion of firms.

Investor Protection: Degree of membership among countries with strong legal rights for minority shareholders vis-a-vis managers or blockholders. The measure is an aggregate of five dichotomous measures (1=presence of protection, 0=absence of protection): proxy votes allowed by mail, shares not blocked before the meeting, cumulative voting or proportional representation, and oppressed minorities mechanisms. The sixth measure is percentage of share capital call an extraordinary shareholders meeting. Seven-point fuzzy scores were assigned by rescaling the final measure (scored zero to 6). (*Source*: La Porta et al. 1998).

Accounting Standards: Degree of membership among countries with high standards of accounting and disclosure. Measure based on CIFAR ratings of companies` 1990 annual reports based on the inclusion or omission of 90 items. Five-point fuzzy scores were assigned rescaling the range of variation (40 to 83 of a possible 90 items) with a cross-over point of 60 items. (*Source*: La Porta et al. 1998).

INDUSTRIAL RELATIONS VARIABLES

Unionization: Degree of membership among countries with high rates of union density. Calculations were made based on country averages of the total density figures for the period 1950-1995 (Golden/Lange 2004). Supplementary data was used from country-specific sources.

Collective Bargaining Coordination: Degree of membership among countries with centrally coordinated collective bargaining regimes. Six-point fuzzy scores were assigned based on an average of data provided in Layard et al. (1991) and Calmfors/Driffill (1988) as reported in Siaroff (1999).

POLITICAL SYSTEMS VARIABLES

Centre-left Government: Degree of membership among countries ruled by centre-left governments. Measures the percentage of years between 1928 and 1995 where both the party of the chief executive and the largest party in congress had left or centre orientation. (*Source*: Botero et al. 2004).

Electoral system/disproportionality. This variable refers to the attributes of the electoral system which influences the degree of disproportionality and the number of existing parties. The degree of party disproportionality is "the difference between its vote share and its seat share" (157). The indexes spans from low mostly in Proportional Representation parliamentary systems such as the Netherlands (1.3%) to a high percent in the plurality countries such as the U.S. (14.91%) and majority systems such as France (21.08). (*Source*: Lijphart 1999: 162, Table 8.2).

Number of Political Parties. This variable measures the mean "number of political parties – based on the partisan composition of the lower, and generally most important, house bicameral legislatures or the only chamber of unicameral legislatures – averaged over all elections between 1945 and he middle of 1996" (74). For our sample, it ranges from 5.03 in Finland and 4.91 in Italy to 1.96 in New Zealand. Fuzzy membership scores were assigned with the transition point of 0.5 located at around 2.5 effective political parties. This number suggests substantively that, on average, more than 2 political parties were effective and thus may promote consensus and coalition building within government. (*Source*: Lijphart 1999: 76, Table 5.2).

LEGAL SYSTEMS VARIABLES

Legal Family: Membership in four types of legal families – common law (English origin) or civil law (French, German or Scandinavian origin). Crisp set membership scores or 0 or 1 were assigned. (*Source*: La Porta et al. 1998).