Inequality and Institutions: The Case of Economic Coordination*

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Abstract

The understanding of observable associations between institutions and inequality today requires a better grasp of the process driving the selection of economic institutions, in particular wage bargaining centralization agreements, as the outcome of a distributive conflict in which inequality itself plays a prominent role. Low levels of inequality facilitated the adoption of encompassing wage centralization agreements during the early twentieth century in Europe, thereby creating a long-term association between low inequality and high centralization that, for a large subset of cases, remained stable throughout the century. We develop a theoretical argument as to why inequality should lead to lower levels of coordination and test it against competing hypotheses on the basis of a database on 11 OECD nations between the 1910s and the 1950s.

INTRODUCTION

A cursory overview of recent scholarship on inequality suggests that it is institutional in nature. Wage bargaining institutions explain pay inequality, and electoral institutions drive the politics of redistribution, as do different types of federalism and decentralization of political authority.[1] In parallel, the reverse causal link has also gained prominence in comparative politics in recent years: inequality shapes regime choice, political involvement, partisan polarization, and the design of constitutions and fiscal institutions.[2] The coexistence of these two causal arrows over time raises significant theoretical issues for the study of institutions as well as their implications. In this review, we revisit the analysis of how inequality affects coordination and, ultimately, democracy and representation (see Schattschneider 1960 or Dahl 1971).

We posit that to understand the observable associations between institutions and inequality today, it is critical to see the selection of economic institutions, and in particular wage bargaining centralization agreements, as the outcome of a distributive conflict in which inequality itself plays a prominent role. We argue that the resolution of these conflicts is to a large extent a function of the levels of inequality (much like the case of regions within a federation deciding to integrate fiscal policy): higher levels of inequality exacerbate the distributive trade-offs associated with economic coordination and hence reduce the likelihood of coordination between capital and labor. By contrast, lower levels of inequality ease the distributional trade-off faced by workers and employers. As a result, decreasing inequality facilitated the adoption of encompassing wage centralization agreements during the early twentieth century in Europe. This in turn created a long-term association between low inequality and high centralization that, for a large subset of cases, remained stable throughout the twentieth century, as documented by a large empirical literature.

In focusing on the importance of coordination in the labor market, we revisit one of the main preoccupations of the literature on the comparative political economy of industrialized democracies. Starting with Olson (1965), arguments about the importance of institutions for collective action have emphasized coordination among workers and employers. Similarly, the emphasis on corporatism that permeates the comparative political economy literature is impossible to understand without labor market coordination. Wage bargaining coordination is an essential part of these debates, and it dominates the political economy literatures on the welfare state (Cameron 1978, Katzenstein 1985), varieties of capitalism (Hall & Soskice 2001, Thelen 2004), and the effects of partisan governments (Przeworski & Wallerstein 1988, Alvarez & et al. 1991, Wilensky 2002), among others. It is a topic of even broader importance because of its connection to outcomes such as economic growth and unemployment (see, e.g., Calmfors & Driffill 1988, Iversen 1999, Mares 2003).

By endogenizing economic coordination with respect to inequality, this article makes several contributions. First, our analysis moves beyond the recent findings by Stasavage & Scheve (2009), who question the egalitarian effects of postwar labor market institutions on the basis that inequality was already low when these institutions were adopted. We argue that economic coordination emerged precisely because inequality was low. Rather than questioning the relationship between

[1] For analyses of the influence of labor market institutions on pay inequality, see Wallerstein (1999), Rueda & Pontusson (2000), Rueda (2008), and Beramendi & Cusack (2009). On the effects of electoral institutions on redistribution and inequality, see Austen-Smith & Banks (1988), Austen-Smith (2000), Iversen & Soskice (2006), and Martin & Swank (2008). On the effects of federalism on the welfare state, see Obinger et al. (2006) and Martin & Swank (2008).

[2] Examples of scholarship on regime choice include Boix (2003) and Acemoglu & Robinson (2006); on polarization, see Pontusson & Rueda (2010); on the choice of constitutions, see Ticchi & Vindigni (2005); and on decentralized fiscal institutions, see Beramendi (2012).

institutions and inequality, we reverse and unveil the causal arrow typically found in the literature based on post–World War II data (see fn. 1 above).

Second, the analytical treatment of the mechanisms by which inequality shapes the choice of economic institutions helps unpack the "coevolution" of institutions and inequality. The identification of such coevolution (Iversen & Soskice 2009, Martin & Swank 2012) should not mark, in our view, the end of the task of identifying the mechanisms connecting institutions and distribution. If anything, it provides all the more reason to focus on each of the elements.

Third, this article illustrates a number of methodological challenges that apply to any comparative analysis of institutions and their effects. Most prominently, we focus on identification, unfalsifiability, and confirmatory bias as three major areas of concern. Identification refers to the challenge of isolating and establishing exogenous causal effects in a context in which structural factors and institutions shape actors' preferences and strategies over time. Unfalsifiability occurs when the number of theoretical factors exceeds the number of empirical cases. As the pressure from these two challenges mounts, scholars may be tempted to select evidence with a confirmatory bias, that is, to include only cases that validate the logic of the argument being made. We return to these issues at the end of the article when discussing the implications of our findings and offer some suggestions on the next frontier in the study of institutions and their economic effects.

The remainder of the article is organized as follows. First, we develop a theoretical argument for the reasons why inequality was a major factor conditioning the incentives of capital and labor to pursue coordination agreements. Second, we present an exploratory analysis of the relationships implied by our theoretical argument. Third, we develop a multivariate analysis of the relationship between inequality and labor market coordination on the basis of data from 11 OECD nations between the 1910s and the 1950s. In this section, we also test for alternative arguments about the origins of wage bargaining institutions. Finally, we draw the main implications from our results and explore in detail the methodological implications for the comparative study of institutions.

THE ARGUMENT: ECONOMIC COORDINATION AS A DISTRIBUTIVE CONFLICT

We argue that high levels of inequality undermine the political feasibility of collective bargaining coordination in the labor market. In this context, we highlight distributional considerations as a key factor accounting for cross-national differences in the levels of economic coordination. In our "distributional logic," differences in income at the time of negotiation of the very first wage bargaining centralization agreements are a key explanatory factor of economic coordination. We follow in the footsteps of a few very insightful models. Common across these models is the recognition that precisely because collective bargaining produces numerous externalities (e.g., between high- and low-skill producers of good A, between producers of A and producers of either complements or substitutes of A, between current producers and potential entrants in the market for A, and between workers and society at large), the prospect of wage bargaining centralization triggers multiple distributive conflicts among workers (Przeworski & Wallerstein 1982) and among employers (Mares 2003), as well as between them.[3]

[3]In grappling with these relationships, previous scholarship shows two features. First, most authors, for the sake of analytical tractability, endogenize one of these factors while choosing to exogenize the rest. Second, the general context is one of bias in focus toward labor even though, given the relational nature of the institution, the three dimensions involved—namely coordination within labor and capital, and coordination between each of these and left-wing governments—are bound to covary (Iversen 1999, Hernandez & Rueda 2008).

Wallerstein (1990) focuses on the tension between high- and low-wage workers, its implications for the dynamics of bargaining centralization, and its ability to internalize the cost of externalities. Swenson (1991) and Iversen (1999), among others, focus on the importance of international openness to explain the cleavages within labor and the cross-class alliances between those workers and employers exposed to international competition. Iversen (1999) also points to technology and the macroeconomic policy regime as important factors shaping the cost-benefit calculus of both employers and employees. In his model, high-wage earners consent to moderation to gain competitiveness, reduce the risk of unemployment, and secure higher long-term wages. Similarly, competitive companies will endorse centralized agreements if they bring about enough wage moderation to offset the loss of flexibility and the costs associated with higher nontraded prices. More recently, Lee & Roemer (2005) place the distribution of skills at center stage by linking the level of inequality among workers to the incentives of the "pivotal" worker to coalesce with either the low-skill, low-earning workers or the high-skill earners and capital owners. The model predicts that when inequality is either very high or very low, the former occurs, thus giving birth to a highly unionized labor market. Intermediate levels of inequality are the breeding ground for majorities in favor of more deregulated, competitive labor markets. Finally, Ahlquist (2010) creatively uses recent analytical models of federalism and decentralization to revisit the question of confederation within labor, a prerequisite for bargaining with employers. His analysis, the closest to our interests, emphasizes the trade-off between the scope and the size of union confederations.[4] Distributional concerns are at the core of this trade-off. Large confederations are likely to be more heterogeneous in terms of the endowments of their members. Along with such heterogeneity comes an exacerbation of distributive trade-offs. If the poorer members of the union use the binding rules of the confederation to make demands from the wealthier members that go beyond what the latter find beneficial, there is no incentive for the wealthier sector of labor to join or remain in the confederation.

This general logic applies broadly to problems of coordination in other settings. In the context of a study of the determinants of endogenous fiscal policy in federations, Beramendi (2007) uses a similar framework to understand the conditions under which different members of an economic union decide to oppose/endorse the adoption of a centralized redistributive system. In pure income terms, and in the absence of cross-regional economic externalities, wealthier members of any given union have no incentive to delegate fiscal policy decision making to bodies whose decision is affected by the preferences of the poorer members of the union. Our analysis below shows that, much like the issues of fiscal policy integration in complex unions or the problem of confederation within labor, distributional concerns are central to understanding the incentives of different types of workers and firms to coordinate their wage bargaining strategies with one another.

Different Approaches to Coordination

Existing approaches to coordination can be separated into four logics: structuralist, functionalist, partisan, and institutional.

Structuralist approach. The structuralist logic (Gerschenkron 1962, Kurth 1979) posits that the nature of economic institutions is a function of the level and timing of industrialization (Wilensky 2002). In addition, arguments identifying trade dependence as the key explanatory variable of wage

[4]A related point about the degree of labor coordination being inversely related to the size of the labor force is made by Wallerstein (1989).

bargaining coordination also show a structuralist flavor in that actors' preferences depend on their position in the international economy. Ultimately, outcomes reflect differences within nations in the relative distribution of beneficiaries (and cost bearers) of exposure to trade (Cameron 1978, Katzenstein 1985). Structuralist accounts do not fully flesh out the specific mechanisms behind the association between late industrialization/international openness and economic coordination. As a result, subsequent authors developed a number of alternatives.

Functionalist approach. The notion of coordination as an efficient institutional device to internalize externalities and prioritize society's interests over those of specific interest groups (Olson 1965, Lange 1984) provides a second framework to understand economic coordination. Within this family of arguments, actors' motivations appear primarily driven by a concern for the overall functional efficiency of the economy. In a well-known contribution, Calmfors & Driffill (1988) consider the macroeconomic effects of three levels of wage bargaining. They argue that good economic performance will result if wage bargaining takes place either at the individual company or at the national level. In the first case, the actions of unions are not powerful enough to distort efficient market outcomes, and in the second, unions are encompassing enough to act in favor of the interests of society as a whole. Worse macroeconomic performance is associated with wage bargaining at the industry level, where wage bargaining is powerful enough to affect the market equilibrium outcome but not encompassing enough to take society's interests into consideration.[5]

The pay-off awaiting social partners who engage in collective action is not only the possibility of good macroeconomic outcomes (as shown by, among others, Alvarez et al. 1991) but also a more equal society free of industrial unrest. Note as well that the pursuit of society's interest may also work in favor of employers as a class. Employers' coordination offers a risk-sharing mechanism. Mares (2003) and Swenson (1991, 2002) show how coordination with labor, and support for the welfare state, is in the interest of employers commanding firms of small size in particularly exposed sectors. Moreover, external conditions may provide employers with additional reasons to embrace coordination. When they face a highly mobilized labor force, presenting a united front increases their bargaining power (Martin & Swank 2008). Finally, there may be efficiency gains for employers themselves, not only for society, as they can benefit from coordination also in terms of training and high-skilled production. In coordinated labor markets, employers are more likely to invest in general training for workers because poaching and free riding are then institutionally limited (see Acemoglu & Pischke 1998, Hall & Soskice 2001, Thelen 2004).

In sum, the efficiency gains associated with improved macroeconomic conditions should spur coordination not only among workers' organizations but also among employers.[6] Indeed, both are prerequisites for centralized wage bargaining, since fragmented factor representation renders institutionalized economic coordination very unlikely.

Partisan approach. A third logic shifts the focus from efficiency to politics as the key to understanding the origins of wage bargaining centralization agreements. According to this partisan logic, coordination emerges as a political exchange among actors concerned first and foremost with their own welfare. In "ideal type" terms, unions commit to wage moderation and social peace in return for the provision of a generous welfare state by social democratic governments. Employers

[5]In analyzing the effects of labor market organization over macroeconomic outcomes, other authors have suggested that the level of wage bargaining centralization is not as important as "the degree to which bargaining is coordinated across the economy" (Hall 1994, p. 4). See also Soskice (1990) and Golden (1993).

[6]The idea that businesses may promote coordination is relatively recent (see Swenson 1991, 2002; Mares 2003).

accept the development of a large public insurance system in exchange for the unions' moderation and the availability of a well-qualified labor force. Employers also commit to stable investment and long-term growth in return for the social democratic government's promise not to tax their benefits to finance the welfare state (Cameron 1984, Przeworski & Wallerstein 1988, Wilensky 2002, Cusack & Beramendi 2006). Given the potential benefits, left government plays a critical role in the formation and sustainability of this agreement over time. As a result, the exchange described above builds on strong ties not only between left government and labor (Wallerstein 1989, Western 1997) but also, as importantly, between left government and capital (Hall & Soskice 2001, Hernandez & Rueda 2008). Left governments value the potential for consensus building of peak business associations, and this provides further incentives for business to coordinate (Windmuller & Gladstone 1984). Moreover, when there is more than a single interest group, the government must weigh the credibility of the various groups and decide what advice to consider and what to dismiss. Left governments therefore may promote business coordination so that they can use competing information sources to their advantage when lobbies have conflicting policy aims (Krishna & Morgan 2001). Regardless of the specific motivations at work, employer coordination is, according to this logic, the reflection of the incumbent's partisan concerns.

Institutional approach. Whereas the efficiency and partisan logics are built primarily around the nature of specific actors' preferences, a fourth stream of scholarship examines the political institutions through which contending preferences are aggregated. Wilensky (2002, p. 119) discusses electoral systems as a cause of corporatism, pointing to the fact that "historically the PR compromise in 11 out of our rich democracies preceded the corporatist compromise." According to this institutional logic (Lijphart 1984), proportional representation (PR) systems foster consensual bargaining among interest groups, thereby facilitating the formation of democratic corporatist arrangements and economic coordination more generally. More recently, Martin & Swank (2008) have revisited this claim to argue that the corporatist organization of employers is a positive function of the level of proportionality in voting, as well as an inverse function of fragmentation of political power (federalism/decentralization). They offer a mechanism beyond the consensual nature of PR systems. To the extent that each party has a dedicated business base, the fact that a large number of parties is necessary to change policy in PR systems facilitates the emergence of policy commitments between parties first, and subsequently among employer associations. Federal institutions, in contrast, work to undermine the feasibility of these commitments, as national employer organizations lack political clout.

Our Argument

Every one of these arguments illuminates some aspect of the processes behind the origins and workings of economic coordination. We contend, however, that to understand the observable associations between institutions and inequality today, it is critical to see the adoption of labor market institutions, and in particular wage bargaining centralization agreements, as the outcome of a distributive conflict in which inequality itself plays a prominent role. Thus, as mentioned above, we propose a fifth approach: a distributional logic that situates income inequality at the time of negotiation of the very first wage bargaining centralization agreements as a key explanatory factor of economic coordination.

When thinking about the institutional design of their economy, employers and workers face three options: full coordination, no coordination, and a mixed system in which salary and contribution decisions remain decentralized at the company level but there exist intercompany transfers and coordination at the sectoral level. Substantiating the notion that economic coordination is

essentially a distributive issue requires analyzing how pre-existing distributive configurations shape the political feasibility of such arrangements.

In developing the argument, we consider an economy with just two firms, in which economic coordination is an institutional arrangement that generates costs and benefits at the levels of both individual workers and firms. Regarding the decision-making process, we assume that firms' choice to enter coordination agreements rests with both employers and workers. Employers will factor into their calculation the expected effects of institutional change on their workers' net benefits. Workers will assess the prospect of economic coordination as a cost-benefit problem relative to the status quo. The analysis builds on the assumption that workers and their representative organizations cannot be forced into comprehensive coordination agreements that are against the interest of a majority of the workforce.[7]

At the individual level, coordination means wage compression, which poses a direct cost (and benefit) to workers. For the upper half of the distribution, wage compression is the share of earnings that workers forego by being part of agreements that rest on wage restraint. For the lower half of the distribution, wage compression means a benefit that tops up their wages to a level they could not have reached without coordination. In this respect, wage compression under coordination is akin to progressive taxation. It represents a tax for those whose individual abilities would have produced an uncoordinated higher wage, and a benefit for those whose individual abilities would have produced an uncoordinated lower wage. Our argument also assumes that individuals contribute to the cost of coordination when they are doing well (the good state of the world) and benefit from it when they are below the mean of the individual income distribution (the bad state of the world). All workers, even if at present in the good state of the world (above the mean), are vulnerable to the bad state of the world; whatever their personal characteristics, they face unemployment spells, salary reductions, transitions between sectors, and other risks.

At the firm level, coordination poses a redistributive conflict between companies with varying degrees of output per worker. The intuition is as follows: coordination implies unequal firm-level contributions to a larger pool of firms with access to a number of "club goods." The forms these contributions take include investments in technology and information, subsidies, financing interest representation, delegating sovereignty over bargaining with other sectors, price regulations, etc. Each of these instruments is costly, with wealthier, more productive firms bearing a share of the burden of relatively less successful producers. Critically, our argument explores how these company characteristics, and their distributive implications, feed back into the preferences of workers. Low-wage earners in rich and poor firms are bound to evaluate these transfers differently (as are high-wage earners in both kinds of firms). In other words, the implicit transfer between firms factors in the calculations of workers considering coordination agreements.

Consider first the incentives of low-wage earners in relatively less successful companies. They would clearly benefit from encompassing wage compression agreements at the expense of high-income earners. Moreover, they would also benefit from their companies receiving transfers from other sectors in the economy. Their preferences depend on the combination of the size of the pool of resources and the expected level of redistribution implicit in different coordination agreements. The latter, in turn, depends on the structure of salary differences within and between firms. For these workers, full economic coordination is the first preference. Their second-best option would be a mixed system, in which intercompany transfers out of the base of the wealthier companies take place, thereby increasing resources to allow wage compression. These workers would be worst off under fully decentralized economic institutions.

[7]A more formalized version of the argument is available from the authors.

The preferences of high-wage earners in successful, wealthy firms are very different. Indeed, their preference ranking is the reverse of that of low-wage earners in poorer firms. As one moves up in the income scale, the tolerance toward wage compression declines.[8] In addition, high-wage earners have no incentive to accept any transfer toward an intercompany common pool of resources that poorer firms are bound to dip into. Thus, they are better off under a fully decentralized system in which coordination transfers are kept as low as possible. Under these circumstances, their second-best option is a system that minimizes wage compression, even at the expense of side payments to other firms. Obviously, the smaller these side payments the better, as they would optimally like to see no coordination at all. Full coordination would be their last choice. In addition to opposing the tax implicit in the wage compression ensuing from coordination agreements, these workers have little incentive to support costly institutional investments in arrangements geared toward general benefits such as more egalitarian skill acquisition. Intercompany transfers like vocational training are not in the interest of these (mostly) high-skilled workers. They would rather use these funds to invest in, for example, company-specific technology from which they are likely to reap larger returns.[9]

We turn now to high-income earners in relatively poorer companies. Their approach is driven by the fact that their individual and firm ascriptions do not overlap. They want to minimize the costs of wage compression, but at the same time, they want to extract as much rent from wealthier companies as possible. This combination triggers a dilemma for this group of employees. A fully centralized system provides them with intrafirm redistribution. This benefit, however, may be offset by the need to cope with a larger pool of heavily mobilized low-income workers, which may result in a scenario in which the cost associated with wage compression actually becomes higher. The optimal fiscal structure for high-income earners in poor firms is a hybrid system that limits the degree of wage compression while maximizing redistribution of resources between firms. The worst-case scenario for members of this subgroup is a fully coordinated system in which they are exposed to the redistributive demands of a coalition of low-income workers across all firms.[10]

Finally, low-income workers in relatively rich companies need to balance the additional resources they could extract by coalescing with other low-income workers across society against the loss they would incur because of a change in their relative position within a potential economy-wide wage agreement. Such a loss would take the form of an implicit transfer of resources from the low-income earners in the rich company to the low-income earners in other companies. In determining the size of this loss, the key factor is the skew of the wage distributions within companies. If wages in the rich company are relatively equal, full coordination would imply a large transfer from low-income earners in top companies to other less successful ones. As a result, given a relatively equal wage scale, low-income workers put firm before class: decentralized economic institutions would be preferred to any system implying any kind of transfer to other firms. Their second choice would be to continue their alliance with high-wage earners in support of a system that provides some transfers but respects wage-setting autonomy at the company level. In contrast, if the rich company has a very unequal distribution of earnings, then a large share of the low-wage

[8]For an analysis of how tax pressures feed back into political conflict over wage bargaining institutions in more recent periods, see Mares (2006).

[9]However, other scenarios emerge depending on the structure of inequality within and between companies. If a company is more unequal and only moderately wealthier than the rest, and if the low-income workers are mobilized, the marginal cost of sharing economy-wide the burden of wage compression falls below the marginal cost of coping with a larger number of low-income workers in an uncoordinated regime.

[10]Again, this ranking may change under specific conditions.

earners would remain net beneficiaries under full coordination. Only under these circumstances would class allegiances be more attractive than company ones.[11]

This map of preferences offers insights into two important mechanisms driving the relationship between inequality and economic coordination. These mechanisms link directly two dimensions of inequality: inequality between firms in terms of resources, and inequalities within firms in terms of salary levels. First, resource differences among firms have direct implications for each firm's contribution to the common pool. In political terms, this implies that both employers and workers within wealthier firms (regardless of their salary) are concerned about sharing their resources with other members and wary of any system of interests representation that limits their ability to veto excessive transfers within the organization.

The second mechanism concerns differences across firms in terms of the distribution of income within the firm. Our analysis yields a number of counterintuitive insights. A standard model of redistributive preferences (Meltzer & Richards 1981) would indicate that higher inequalities within the firm lead to stronger support for coordination and its associated redistributive effects. In fact, the analysis above implies exactly the opposite insight: low-wage earners in poor companies certainly are the ones to benefit the most from coordination, but, as outlined above, they are unlikely to mobilize the support of their comrades in wealthier firms. This contrast illustrates a broader insight: to the extent that companies differ in the skew of their distribution of income, the nature of the conflict between employers and workers also differs, and so does their disposition to enter institutional agreements that bind their political autonomy.

In summary, higher levels of inequality constrain the political feasibility of coordination in two ways: they exacerbate the conflict over resources between firms and nurture opposing redistributive and institutional preferences within firms. Through either of these two channels, higher levels of inequality should lead to lower levels of economic coordination. In the next section, we evaluate the empirical plausibility of this claim.

EMPIRICAL ANALYSIS: EXPLORING THE RELATIONSHIP BETWEEN INEQUALITY AND COORDINATION

Before we provide a more systematic test of our hypotheses in the next section, we begin with a preliminary exploration of the plausibility of our theoretical claims. We do this by looking at the relationship between inequality and coordination in the first half of the twentieth century. We use a measure of coordination between employers and unions provided by Martin & Swank (2008), which captures the centralization of collective bargaining between unions and employers. The variable receives scores between 1 (when collective bargaining centralization is low) and 3 (when it is high), and the coding is done in 0.5 increments.[12]

The first thing to note about our collective bargaining data is the limited number of countries that they capture. Although Martin & Swank's data are available for 16 nations, the availability of our inequality variable (to be described in detail below) limits our analysis to 11 countries: Australia, Canada, France, Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States. With some exceptions, we have coordination data for four decades: the 1910s, 1920s, 1930s, and 1950s. The observations are understood to capture

[11] More formally, insofar as the income of the median worker in the poor firm is equal to or less than the income of the median voter of the workforce, a majority among low-income earners would support full fiscal centralization.

[12] Martin & Swank rely on a number of sources for the coding of these two variables; see Martin & Swank (2008, Appendix) for details.

coordination in these decades but, as Martin & Swank make clear, they reflect scores circa 1914, 1925, 1938, and 1955.

Our measure for inequality comes from three main sources: Atkinson & Piketty (2007), Aaberge & Atkinson (2008), and Leigh (2007).[13] It captures the share of income held by the richest 1% of the population, derived from tax-return data. Although there are some complications inherent in these data (e.g., do individuals underreport income to tax authorities?), we are convinced of the data's success at capturing inequality (Atkinson & Piketty 2007, Leigh 2007). In the words of Leigh, panel data on top income shares are "a useful substitute for other measures of inequality over periods when alternative income distribution measures are of low quality, or unavailable" (Leigh 2007, p. F619). Several characteristics of the data, however, should be kept in mind: (*a*) the data are based on individual tax returns, and the units vary (the tax unit is the individual, married couple, or household); (*b*) the income total used to derive the top income shares in each country is the sum that would have been reported were all adults to have paid tax (Leigh 2007); and (*c*) the measure for income excludes capital gains (for Australia and New Zealand, a measure excluding capital gains is not available, so for these countries it includes realized capital gains to the extent that such gains were taxable).

A critical issue concerns the quality of these data as a proxy for inequality between firms (the second dimension affecting individual preferences for redistribution in our article). This emerges from the fact that a direct comparable measure of inequality between firms during the first half of the twentieth century (be it in terms of assets, number of employees, or share of the market) is yet to be compiled. Our analysis takes as its starting point that total inequality can be decomposed into inequality between and within firms. We then assume that these components are in fact correlated and that an increase in the dimension of inequality we have measures for (income inequality) reflects increases in both between- and within-firm inequality.[14]

We have explained in previous sections why we think that greater levels of inequality should be associated with a higher likelihood of coordination in the labor market. Our theoretical claims have clear empirical implications: we expect low shares of income held by the richest 1% of the population to be associated with high levels of coordination. **Figure 1** illustrates the relationship between coordination and inequality in the 1910s, 1920s, 1930s, and 1950s.

The figure provides some support for our hypothesis. It is clear that high levels of inequality are associated with low levels of coordination, whereas low levels of inequality correspond with high levels of coordination. Let's focus on some cases in the figure. France from the 1910s to the 1930s is characterized by very high levels of inequality; the share of income held by the richest 1% of the population is between 15% and 20%. The figure also shows that, consequently, the levels of coordination were very low during this period (they equaled 1 from 1910 to 1920 and 1.5 in 1930). France is not unusual in having this combination of high inequality and low coordination; Australia, the United States, and New Zealand from the 1910s to the 1930s, as well as Canada in the 1920s and 1930s, are very similar. On the other side of the spectrum, we have Norway and Sweden in the 1930s and 1950s, and the Netherlands and Australia in the 1950s. These country-decades are characterized by low levels of inequality (the share of income held by the richest 1%

[13] See Appendix for country-specific sources.

[14] To alleviate concerns about the validity, we explore the connection between our measure of inequality, namely the top 1% share of income, and a direct measure of inequality between firms, namely the level of interindustry (average) wage inequality during the period 1975–2002. The latter is defined as the share of overall inequality that is to be attributed to differences among firms in the average level of pay. The companies analyzed belong to the manufacturing sector. We do find that, during this period, the levels of interindustry wage differences and the top income shares display a strong correlation. Results are available from the authors.

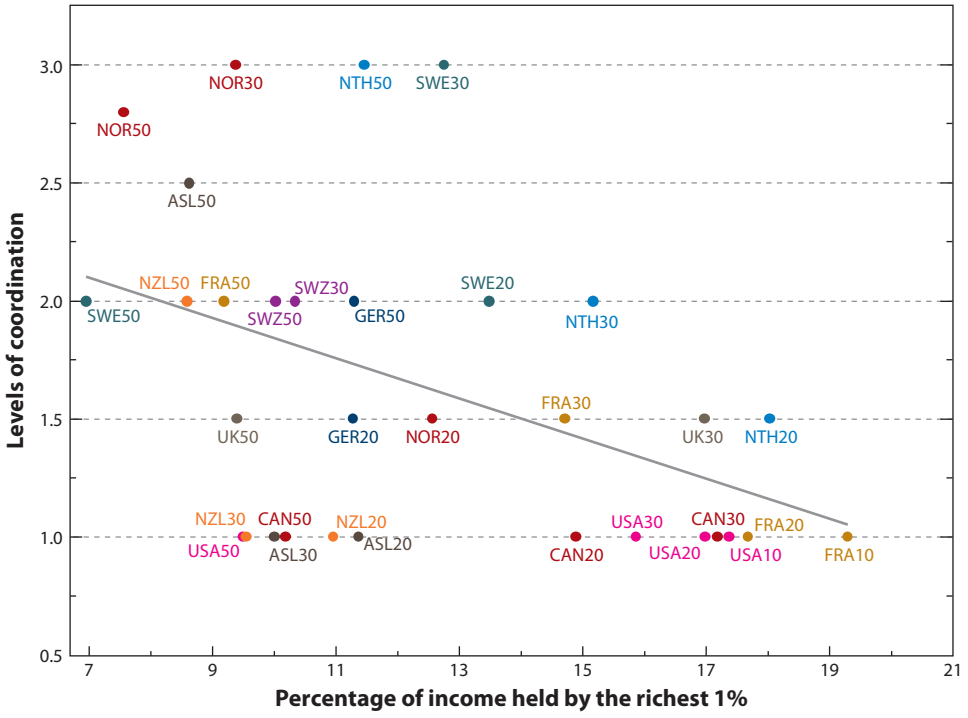

Figure 1

Levels of coordination are plotted against decade averages for the share of income held by the richest 1% of the population for all the countries and decades in our sample. The line represents a simple bivariate regression linking the two variables. The countries are Australia (ASL), Canada (CAN), France (FRA), Germany (GER), the Netherlands (NTH), New Zealand (NZL), Norway (NOR), Sweden (SWE), Switzerland (SWZ), the United Kingdom (UK), and the United States (USA); the decades are the 1910s, 1920s, 1930s, and 1950s. Note that we have transformed the original yearly inequality data into decade averages. Some decades have years with missing data; the exact years used for the decade average calculations are available from the authors.

of the population is between 7% and 13%) and high levels of coordination (scores higher than 2.5). The negatively sloped line is consistent with the thrust of our argument, with decreasing levels of inequality promoting higher levels of coordination and most observations concentrated around the line.

A MULTIVARIATE ANALYSIS OF THE RELATIONSHIP BETWEEN INEQUALITY AND COORDINATION

Model Specification

Although the previous section's preliminary analysis supports our theoretical argument, earlier contributions to the literature have highlighted the importance of several other determinants of economic coordination. As we argued above, these alternative approaches to coordination emphasize four different logics, and we need to introduce control variables in our multivariate analysis to account for their potential effects.

To address the structuralist logic, we include controls for country size [area surface in thousands of square miles (as natural log)], gross domestic product per capita[15] (meant to capture the level of industrialization during the period of interest), and international openness.[16] The functional efficiency approach is partially captured by these controls, but we also include a measure of union density, namely union membership as a percentage of the labor force. This variable should help us distinguish the distributional motives implied in our variable of interest from exogenous factors putting pressure on employers to organize simply as a defensive response to labor coordination. The partisan logic is addressed straightforwardly by including a measure of the ideological profile of government incumbents, namely the country average of the interwar parliamentary vote for Left parties. Finally, we explore the institutional logic by including in the analysis measures of federalism and proportionality.[17]

To identify the effect of inequality on the level of economic coordination in the presence of this set of controls, we adopt the following strategy. Given the dynamic nature of the data, we introduce all our explanatory variables as averages for the five years previous to the measure of coordination. As we mentioned above, although the observations are understood to reflect coordination in the entire decade, they reflect scores circa 1914, 1925, 1938, and 1955. Our measures for the explanatory variables look at the averages of the five years before these dates. For example, the 1950s measures of coordination are the scores for 1955, so our explanatory variables measure the averages from 1950 through 1954.

As indicated above, our dataset combines time-series and cross-sectional variation. To analyze our data, we begin by running the following model:

$$Y_{it} = \beta_0 + \beta_1 X_{1it-1} + K + \beta_n X_{nit-1} + \varepsilon_{it},$$

where β_0 represents a general intercept, X_1 to X_n are the explanatory variables, β_1 to β_n are the slopes of the explanatory variables, and ε_{it} denotes the errors. Our explanatory variables are subscripted as $t - 1$ to signify that they are the average of the previous five years.

A modified Wald test for panel-specific heteroscedasticity revealed significant heteroscedasticity in our data. We therefore estimate ordinary least squares (OLS) models with panel-corrected standard errors (PCSEs).[18] Beck & Katz (1995) show that, in the absence of autocorrelation, PCSEs are consistent in the presence of panel-specific heteroscedasticity. Our model also assumes that the errors are contemporaneously cross-nationally correlated.

Second, we estimate

$$Y_{it} = \beta_0 + \beta_1 X_{1it-1} + K + \beta_n X_{nit-1} + N_i + \varepsilon_{it},$$

where β_0 represents a general intercept, X_1 to X_n are the explanatory variables, β_1 to β_n are the slopes of the explanatory variables, N_i are country fixed effects, and ε_{it} denotes the errors.

[15] GDP in 1990 in Geary Khamis dollars (thousands), divided by the population of each country expressed in thousands of inhabitants (as natural log).

[16] Level of merchandise exports expressed in 1990 Geary Khamis dollars (thousands), divided by GDP in 1990 Geary Khamis dollars (thousands).

[17] Countries (in each decade in our sample) are classified by Martin & Swank (2008) as federal (0), semifederal (1), or unitary (2). Electoral system proportionality is measured in two ways. First, the disproportionality of the electoral system is measured using the vote and seat shares of parties. Second, all countries (in each decade in our sample) are classified by Martin & Swank (2008) as majoritarian (0), semiproportional (1), or proportional (2).

[18] Alternative results without PCSEs and estimating Huber/White robust standard errors instead produce similar results to those reported.

Conventionally, we introduce fixed effects to deal with country-specific omitted variables. This makes sense in comparative political economy analyses because there are bound to be country-specific factors that matter to the outcomes of interest but cannot be introduced into the model (specific historical circumstances, difficult-to-capture institutional developments, etc.). In dealing with these country-specific factors, however, fixed-effects specifications focus on the within-unit share of the variance in the data—in our case, over-time patterns of association among our variables. This, added to the fact that our country series are very short (we have a maximum of four observations per country), severely limits our fixed-effects analysis.

Any empirical study linking institutions and distributive outcomes is open to concerns about identification. In our case, the risk of endogeneity (i.e., the suggestion that coordination in fact determines inequality) looms large. The dynamic nature of our analysis helps us; given the temporal variance of inequality, it seems unlikely that coordination at time *t* would affect inequality in the previous five years. We also address this potential problem more directly by reporting results for an additional analysis in which we instrument the effect of inequality. The use of instrumental variables is a common way to address identification problems. We are very much limited by the availability of the data (we have only 28 observations in the analyses below). Nevertheless, we also run a two-stage least squares regression. In the first stage, we endogenize inequality and use population (as a natural log) and the proportion of people employed in commerce and finance (as a percentage of the total number of the employed) as predictors.[19] In the second stage, we use the predicted values of inequality from the first stage as the predictor of coordination.

Findings

Table 1 presents our first set of results. The dependent variable is the level of collective bargaining coordination, and we estimate seven different models. In each of these models, we add an increasing number of the explanatory variables described above, and we use two alternative measures of electoral disproportionality. In model 1, we introduce only our measure of inequality as an explanatory variable. In model 2, we add the variables measuring the proportionality of the electoral system (as the actual difference between votes and seats), federalism, international openness, and union density. Model 3 is the same as model 2, but it uses the alternative measure of proportionality (as categorical electoral system). In model 4, we reproduce model 2 and add variables capturing the size of a country and its economic development (measured as log of GDP per capita). Model 5 is the same as model 4, but it uses the alternative measure of proportionality. Models 6 and 7 add one more variable, our country-specific measure of Left party support.

The most important point to make about **Table 1** is that, as hypothesized in previous sections, inequality emerges as a very significant determinant of employer coordination. The share of income held by the richest 1% of the population is associated with lower levels of coordination in a highly significant way (at higher than the 1% level of confidence, no matter what model we look at). In fact, the number of control variables that we throw into the analysis does not fundamentally change the estimate of the effect of inequality on employer coordination, since the coefficient ranges from −0.05 to −0.08. If we take the coefficient of model 1 as our guide, our results suggest

[19]These variables are good predictors of inequality and, we would argue, reasonably unrelated to coordination (except through their effect on inequality). We do accept, however, that due to the very limited availability of our data, this is only a preliminary way to address this potential problem.

Table 1 The determinants of collective bargaining coordination, no fixed effects[a]

	1	2	3	4	5	6	7
Inequality (income held by rich 1%)	−0.080 (0.030)**	−0.065 (0.015)**	−0.072 (0.017)**	−0.065 (0.015)**	−0.069 (0.016)**	−0.054 (0.020)**	−0.067 (0.022)**
Disproportionality		−0.042 (0.015)**		−0.01 (0.018)		−0.01 (0.016)	
Electoral system			0.405 (0.061)**		0.333 (0.172)		0.325 (0.137)*
Federalism		0.346 (0.100)**	0.282 (0.037)**	−0.144 (0.075)	0.175 (0.179)	−0.126 (0.078)	0.168 (0.143)
Openness		−2.376 (0.798)**	−1.551 (0.811)	−2.963 (0.846)**	−1.804 (0.669)**	−2.562 (0.864)**	−1.768 (0.794)*
Union density		0.000 (0.021)	0.006 (0.022)	0.017 (0.014)	0.011 (0.023)	0.006 (0.024)	0.009 (0.030)
Log of area				−0.178 (0.034)**	−0.034 (0.085)	−0.149 (0.012)**	−0.034 (0.086)
Log of GDP per capita				−1.091 (0.531)*	−0.403 (0.255)	−0.782 (0.171)**	−0.378 (0.374)
Left party support						0.01 (0.012)	0.002 (0.010)
Constant	2.615 (0.389)**	2.941 (0.481)**	2.162 (0.463)**	6.573 (1.214)**	3.221 (1.406)*	5.491 (0.506)**	3.151 (1.756)
Observations	28	28	28	28	28	28	28
Countries	11	11	11	11	11	11	11

[a]Ordinary least squares results. Numbers are estimated coefficients; numbers in parentheses are panel-corrected standard errors. *Significant at 5% level. **Significant at 1% level.

that changing the level of inequality from 9.38 (the level in Norway in the 1930s) to 15.865 (the level in the United States in the 1930s) would promote an increase in collective bargaining coordination of 0.5 units. (As a reminder, our measure of collective bargaining coordination ranges from 1 to 3.)

The estimates for the control variables in the models are not as important to the main argument in this article, but **Table 1** presents some interesting findings. Our results provide some confirmation of Martin & Swank's (2008) argument about proportionality, but only when we use the electoral system categorical variable (and not completely; see model 5). When we use the arguably more accurate measure of the actual difference between votes and seats, the effects of proportionality become more ambiguous. They are negative and significant in model 2, as Martin & Swank hypothesize, but insignificant in models 4 and 6. Moreover, the effects of federalism do not seem to support Martin & Swank (2008). They are insignificant (or positive and significant, the opposite of what Martin & Swank hypothesize) in all the models.

Our results also show international openness to be mostly significant and consistently negative. This seems to contradict the generally accepted views on the effects of trade. Economic openness and international dependence, argues Katzenstein (1985, p. 34), establish a "compelling need for consensus." Our results seem to suggest this is not the case.[20] **Table 1** also shows union

[20]This finding also questions the implications emerging from arguments by Swenson (1991) and others on the importance of

Table 2 The determinants of collective bargaining coordination, country fixed effects[a]

	8	9	10
Inequality (income held by richest 1%)	−0.057 (0.022)**	−0.055 (0.016)**	−0.050 (0.009)**
Disproportionality		−0.01 (0.038)	−0.016 (0.036)
Openness		−3.373 (8.824)	0.002 (10.762)
Union density		−0.032 (0.044)	−0.093 (0.043)*
Log of area			−2.552 (11.554)
Log of GDP per capita			2.636 (1.345)
Constant	−0.057 (0.022)**	−0.055 (0.016)**	−0.050 (0.009)**
Observations	28	28	28
Countries	11	11	11

[a]Ordinary least squares results. Numbers are estimated coefficients; numbers in parentheses are panel-corrected standard errors. *Significant at 5% level. **Significant at 1% level. Country dummy estimates not reported, available from the authors.

densities to be statistically insignificant predictors of employer coordination and shows that a country's area and GDP per capita are negatively associated with the levels of collective bargaining coordination (although the significance of these findings goes away when we use the categorical control for proportionality, which has little within-country variability). Finally, our results show that Left party support is not a significant determinant of collective bargaining coordination.

Table 2 presents the results from our country fixed-effects analysis. In these regressions we have eliminated those variables that exhibit no (or very little) within-country variation. They include the electoral system measure of proportionality, federalism, and Left party support. This leaves three models to be estimated in **Table 2**. As in **Table 1**, the most important point is that inequality emerges as a very significant determinant of coordination. In **Table 2**, the share of income held by the richest 1% of the population is associated with lower levels of coordination in a highly significant way (at higher than the 1% level of confidence, no matter what model we look at). In fact, when we look at within-country variation—admittedly, in a limited way, given the short length of our time series—inequality is one of the very few significant predictors of coordination (the only additional one is union density in model 10). The control variables do not fundamentally change the estimate of the effect of inequality on employer coordination, since the coefficient ranges from −0.050 to −0.057.

We report the results of our instrumental variable analysis in **Table 3**. Using population and the proportion of people employed in commerce and finance as first-stage instruments for inequality, and therefore addressing the potential identification problem (even if in an admittedly preliminary way), still gives us second-stage estimates that confirm our main hypothesis. The instrumented version of inequality is a significant determinant of coordination (at better than the 95% confidence level) and has substantive effects comparable to those in **Tables 1** and **2**.

international openness to explain the cleavages within labor and the cross-class alliances between those workers and employers exposed to international competition. According to these arguments, international exposure creates incentives for the exposed sector to coordinate with the nonexposed one. In Swenson's view, employers and labor exposed to international competition have no choice but to engage in wage moderation. The main engine behind coordination, in this view, is the cross-class alliance of labor and employers in internationally exposed companies.

Table 3 The determinants of collective bargaining coordination, instrumental variable model[a]

	11
Inequality (income held by richest 1%)	−0.166 (0.077)*
Constant	3.691 (0.976)**
Observations	28
Countries	11

[a]Two-stage least squares results. Inequality is the endogenous regressor. Population (as natural log) and proportion of people employed in commerce and finance (as a percentage of the total number of the employed) are the instruments. Numbers are estimated coefficients; numbers in parentheses are standard errors. *Significant at 5% level. **Significant at 1% level.

CONCLUSION

When discussing the nature of capitalism as an evolutionary process, Schumpeter warned researchers long ago that "the problem that is usually being visualized is how capitalism administers existing structures, whereas the relevant problem is how it creates and destroys them" (Schumpeter 1975 [1942], p. 84). In the relationship between institutions and inequality—between political structures and economic outcomes—the tension highlighted by Schumpeter becomes particularly apparent. Following a similar line of reasoning, this article shifts the attention from the exogenous effects of institutions to their endogenous nature: our argument identifies inequality and the distributive conflicts associated with it as the key factors to understand patterns of variation in levels of coordination, both cross-nationally and over time. Our empirical results suggest that our measure of inequality is the one predictor of coordination whose effects remain substantively and statistically significant regardless of the specification or econometric strategy adopted. Higher levels of inequality limit the possibility of coordination agreements because they exacerbate the distributive trade-offs among individuals. What is normally considered the result of coordination, therefore, happens to be its primary determinant a few decades earlier.

This finding poses a conundrum for comparative politics. As cogently argued by Przeworski (2007), if institutions are endogenous, it becomes really challenging to think of them as causal factors behind observable variation in social and political outcomes. How can scholars distinguish the effects of institutions from the conditions that facilitated their selection in the first place? This is a major theoretical and methodological challenge to which the field has offered a mixed set of responses.

The first is to exploit structural breaks where surrounding conditions can be taken as exogenous, that is, to identify crucial transformations in social and economic conditions that trigger institutional changes, which in turn may affect distributive outcomes (Rogowski & MacRae 2008). Two charges are typically made against this approach. First, exogenous structural breaks are hard to come by. Much like good instrumental variables, purely exogenous shocks serve more as an "ideal type" of research design than as a feasible identification strategy. Neither deindustrialization and the transition to a service economy, for example, nor the different waves of globalization are actually exogenous with respect to political economy choices. The former depends on endogenous technological change whereas the latter results from countries' sovereign choices to open their economies to external competition. Second, even if valid, the focus on exogenous shocks downplays other potential sources of institutional change, namely endogenous, slow-moving transformations within systems that become a major force for change.

Historical institutionalists offer a second, alternative, approach to the fundamental challenge of identifying the relationship between institutions and outcomes. They address some of the

limitations of the previous approach while opening new weak flanks of their own. They focus on endogenous sources of change over long periods of time by treating institutions and outcomes as part of the same path-dependent process where both elements feed back on each other. In their efforts to analyze institutional evolution as well as stability, historical institutionalist scholars have developed rich categorizations of institutional change (Streeck & Thelen 2005, Mahoney & Thelen 2010). They include, among others, exhaustion, layering, drift, conversion, and displacement, concepts all carefully documented in detailed accounts of historical processes over long periods of time. Although the descriptive and classificatory value of these categories is unquestionable, their generalization poses significant theoretical and methodological challenges. Theoretically, these categories rarely emerge from clearly defined mechanisms of an explicit analytical model. As such, they often lack predictive power and are unfalsifiable. In many ways, they constitute post hoc characterizations of an observed reality: we observe institutional change, note its characteristics, and create an analytical category for it. In effect, then, historical institutionalism risks substituting history for theory. The observation of history is transformed from the empirical testing of a set of theoretical claims into the theorizing exercise itself. Accordingly, it is often unfeasible to articulate counterfactual scenarios, as new observations simply become new theoretical categories.

Our findings point to a third but less developed approach, which combines the breadth of the historical turn in comparative politics with the analytical benefits of a focus on identifying, theoretically and empirically, key causal mechanisms. Our argument pits the distributive tensions triggered by inequality against the economies of scale inherent to coordination. To analyze this trade-off, it would be illuminating to expose actors, given a status quo of coordination, to exogenous changes in the levels of inequality and evaluate how long they take to deviate from the status quo. This would not only provide a direct, albeit partial, evaluation of the soundness of the micro-level assumptions of our model, but also open up new theoretical insights.

Regarding the need for systematic accumulation of relevant information across units, one need not be an identification zealot to recognize that the empirical approximation in this article only scratches the surface of the relationship between institutions and inequality. To properly identify the relationships posited by our theoretical model, three data improvements are essential. We need (*a*) historical data at the firm level on assets, wealth, and number of employees (*b*) for a sufficient number of years so that (*c*) scholars can identify changes in interfirm inequality that actually respond to exogenous transformations. These conditions are tough to meet in a field still lacking good comparative historical data on key fiscal policies or state capacity.[21] As we aspire to a well-grounded understanding of the engines behind democratic capitalism, there is no other way forward than to meet these challenges head on through theoretically motivated collaborative efforts.

APPENDIX

Employer coordination: We use an index of employer organization created by Martin & Swank (2008). Their index covers three dimensions of employer coordination: the scope of employer organization, the centralization of power in employer organizations, and the integration of these organizations into national policy-making forums (for details, see Martin & Swank 2008, p. 186).

[21] Scholars often exploit subnational or even local variation as a second-best approach, but to the extent that key theoretical factors of the process derive from national political institutions, the scope conditions of these approximations are severely constrained.

Each of these dimensions receives a score between 1 and 3, and the three-dimensional scores are added into an aggregate index.

Collective bargaining coordination: We use a measure of coordination between employers and unions provided by Martin & Swank (2008). It captures the centralization of collective bargaining between unions and employers, and it ranges between 1 (when collective bargaining centralization is low) and 3 (when it is high). The coding is done in 0.5 increments.

Inequality: Share of income held by the richest 1% of the population, derived from tax return data. Data for Norway are from Aaberge & Atkinson (2008). Data for Sweden are from Leigh (2007) and, originally, Roine & Waldenström (2006). Data for the rest of countries are found in Atkinson & Piketty (2007) and originally in Atkinson & Leigh (2007) for Australia, Saez & Veall (2005) for Canada, Piketty (2007) for France, Dell (2007) for Germany, Salverda & Atkinson (2007) for the Netherlands, Atkinson & Leigh (2005) for New Zealand, Dell et al. (2007) for Switzerland, Atkinson (2007) for the United Kingdom, and Piketty & Saez (2007) for the United States.

Federalism: All countries (in each decade in our sample) are classified as federal (0), semifederal (1), or unitary (2). Source: Martin & Swank (2008), who use data from Jaggers & Gurr (1996).

Electoral system proportionality: We use two measures. First, the disproportionality of the electoral system is measured using the vote and seat shares of parties. Source: Martin & Swank (2008), who use data on elections from Mackie & Rose (1974) and the formula developed in Gallagher (1991). Second, all countries (in each decade in our sample) are classified as majoritarian (0), semiproportional (1), or proportional (2). Source: Martin & Swank (2008), who use data on elections from Mackie & Rose (1974).

Employment in commerce and finance: The proportion of people employed in commerce and finance expressed as a percentage of the total number of the employed. Source: Martin & Swank (2008), who use data from several sources.

International openness: Level of merchandise exports expressed in 1990 Geary Khamis dollars (thousands), divided by gross domestic product in 1990 Geary Khamis dollars (thousands). Source: Martin & Swank (2008).

Union density: Union membership as percentage of labor force. Source: Martin & Swank (2008), who use data from Stephens (1980).

Log of area: The area surface in thousands of square miles (natural log). Source: Martin & Swank (2008).

Log of GDP per capita: gross domestic product in 1990 Geary Khamis dollars (thousands), divided by the population of each country expressed in thousands of inhabitants (natural log). Source: Martin & Swank (2008).

Log of population: Population of each country expressed in thousands of inhabitants. Source: Martin & Swank (2008), who use data from Maddison (1992).

Left party support: Country average of interwar parliamentary vote for Left parties. Source: Martin & Swank (2008), who use data from Boix (1999).

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Errata

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