



Oct 2016

No.304

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WORKING PAPER SERIES

Centre for Competitive Advantage in the Global Economy

Department of Economics

LOCAL UNION ORGANIZATION AND LAWMAKING IN THE U.S. CONGRESS*

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ABSTRACT

While the political power of labor unions is a contentious issue in the social sciences, it is often conceived mainly as a question of aggregate union membership. Going beyond the common focus on numerical strength, we argue that unions' influence on national lawmaking has significant roots in their local organization. We delineate and test the hypothesis that the horizontal concentration of union members within electoral districts shapes legislators' voting behavior. Drawing on extensive administrative records, we map the membership size and concentration of union locales to districts of the U.S. House of Representatives, 2003-2012. Our new data reveal that concentration clearly cuts across membership size. Consistent with theoretical expectations, both concentration and membership are robustly linked to legislators' ideology and votes on key issues. Lower membership concentration means more legislative support of union positions. Altogether, we suggest a new perspective on the political power of unions in the twenty-first century.

*We are grateful to the Universities of Konstanz and Mannheim for financial support, Thomas Gschwend, Paul Marx, Jake Rosenfeld, and conference participants for helpful comments, and Martina Buchinger for her diligent research assistance

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I. INTRODUCTION

The power of labor unions to influence elections and lawmaking is a central concern to students of democratic institutions. Research in political science, economics, and sociology has commonly conceived of union power in the political arena as a question of aggregate group size, which is linked votes and money. Numerous studies examine the effect of unionization on legislative voting in the United States Congress (Box-Steffensmeier, Arnold, and Zorn 1997; Freeman and Medoff 1984; Kau and Rubin 1978; Seltzer 1995). Related research examines the macro-level relationship between union density and outcomes such as turnout, equality of representation, the minimum wage, inequality, or poverty (Bartels 2008; Brady, Baker, and Finnigan 2013; Flavin 2016; Leighley and Nagler 2007; Radcliff and Davis 2000). A consensus of these works is to view unions mainly through the lens of aggregate membership numbers, while ignoring their other organizational features. In fact, a recent review concludes that existing studies “commonly sum together membership over many different unions with the implicit assumption that organizational characteristics do not matter” (Southworth and Stepan-Norris 2009: 310).¹

It is well known that aggregate union membership in the U.S. and several other countries has receded far below its post-war apex (Rosenfeld 2014). Union members do nonetheless constitute one of the largest organized groups in the political arena, and new research highlights the political significance of unions in contemporary democratic politics. For instance, recent work argues that public sector unions are central to explain political conflicts over the size, scope, and partisan color of governments in American cities and states (Anzia and Moe 2015; Anzia 2011; Flavin and Hartney 2015; Moe 2006). Other studies have linked union leadership to preference formation and industrial action in the interest of other groups (Ahlquist, Clayton, and Levi 2014; Ahlquist and Levy 2013; Kim and Margalit 2016). Going beyond aggregate membership numbers, this emerging line of research has highlighted that the politically mobilized number of union members depends on political and economic institutions, especially electoral rules and labor laws, as well as leadership. In this paper, we pursue a complementary direction of research and contend that the structure of local unions is a neglected but important determinant of organized labor’s political power that cannot be reduced to membership counts.

We argue that solely focusing on membership size provides an incomplete account of the structural basis of union political power and limits our understanding of political representation in Congress. Specifically, we develop and empirically assess the argument that the influence of unions on national lawmakers has significant roots in their

¹Taking a different perspective, comparative political economists have carefully studied the centralization of union organizations for wage bargaining as well as broader corporatist arrangements (e.g., Iversen 1999; Pontusson, Rueda, and Way 2002). As discussed in the next section, our approach is complementary to this important line of research, which does not directly speak to the political effects of district-level union organization.

local organization. Drawing on multiple strands in the literature, we develop a novel hypothesis about the link between district-level union structure and legislative behavior. It highlights that the horizontal distribution of union members across local units within a congressional district—a feature we term concentration—influences roll-call votes. For a given overall union membership, representatives elected in districts where union members are relatively concentrated should be less supportive of union positions than representatives elected in districts where unions are dispersed across several unions. The theoretical intuition motivating this concentration hypothesis is based on the logic of social incentives for political action.

Theoretically, we draw on foundational theories of collective action that point to the importance of selective social incentives in groups for political action (Olson 1965) and extensive behavioral research on the political significance of social interactions in local unions going back to the middle of the twentieth-century (Berelson, Lazarsfeld, and McPhee 1954). Our approach captures the fact that unions have a federal structure with numerous constituent units at the local (i.e., establishment) level. These local unions lie at the heart of organized labor in the U.S. (Freeman and Medoff 1984: 34; also see Olson 1965: 66-76). They form the organizational base of the union pyramid, and this is where workers interact with each other on a regular basis, in the workplace and after work. At the local level, social incentives shape to what degree political resources of union members and their networks – votes as well as time and money – can be effectively mobilized to influence national policymakers. Because social incentives are most effective when groups are relatively small, this logic implies that unions’ political influence in a district is higher when union members are distributed across many local units than when the same number of members is concentrated in few large units. This hypothesis does not follow from other theoretical approaches, as will be discussed in the next section.

To empirically evaluate the concentration hypothesis, we draw on extensive and geographically fine-grained administrative records from the Department of Labor. This unique source allows us to precisely map union membership size and membership concentration to electoral districts of the House of Representatives between 2003 and 2012. Our new measures show that the concentration of union membership is orthogonal to the number of union members in a district. In line with our theoretical discussion, we find that district-level union concentration is robustly linked to legislators’ voting behavior. Controlling for membership levels, legislators from districts with a relatively low union concentration have a substantively more liberal legislative ideology and a higher propensity to support the union position on key votes (e.g., health care) than those from high concentration districts. This concentration effect holds after accounting for state effects, period effects, state-specific time trends, and numerous district-level characteristics. We also find that concentration is linked to campaign contributions and the election of Democratic representatives. Thus, we interpret our results to clearly support the argument that the concentration dimension of local union organization is politically relevant. In addition, our new measure of union membership confirms,

in line with most previous work, that higher membership numbers are associated with more votes for liberal policies.

Our measurement strategy departs from the heavy reliance on survey data in quantitative research on unions. This enables us to overcome two important problems (Southworth and Stepan-Norris 2009). First, a fundamental drawback of mass surveys is that they typically do not provide detailed information on the local union to which a member belongs. This precludes the possibility of examining the concentration of union membership. Second, limitations even concern the seemingly simple but important task of counting union members in a particular locality. For instance, state-level estimates of union density from the Current Population Survey (Hirsch, Macpherson, and Vroman 2001) are used frequently across the social sciences. However, the number of respondents becomes small if one breaks the survey data down by electoral district, so measurement is bound to be quite noisy, and some argue that it is up-ward biased (Southworth and Stepan-Norris 2009). Hence, many studies rely on state-level measures only; while others limit their coverage to metropolitan statistical areas (Box-Steffensmeier, Arnold, and Zorn 1997).

Instead, we use mandatory reports (so-called LM forms) filed by local unions to the Department of Labor. These reports contain detailed information on each local union. Importantly, report submission is a legal requirement for most unions, non-submission and wrong submissions are penalized, and the Department of Labor conducts regular audits. We have retrieved all available raw data for around 30,000 individual unions (from 2000 to 2012) from the Department of Labor, and processed them such that we are able to construct annual measures of union membership and membership concentration by congressional district.² The resulting data set provides a new empirical perspective on the structure of organized labor in the twenty-first century, and it allows us to assess the concentration hypothesis highlighting a neglected dimension of union political power.

II. LOCAL ORGANIZATION AND POLITICAL INFLUENCE

We proceed to lay out the theoretical perspectives that motivate the subsequent empirical work. Going beyond the common conception of membership size as the essential power resource but echoing several strands of research, we advance the argument that organized labor's influence over national legislators is strongly tied to the organization of local unions in an electoral district.

²Scholars have noticed the large potential of the Department of Labor's LM forms for social science research, though "the cost in synthesizing a large sample has thus far deterred systematic analysis" (Southworth and Stepan-Norris 2009: 312). There have been studies using smaller subsets of the records (Martin 2008; Zullo 2008). We provide the first comprehensive analysis for a multi-year period covering the whole country.

Following Olson (1965: 136) and many others, labor unions are groups that have already been organized to serve the economic interests of their members relative to their employers, through collective bargaining over wages and benefits. Unions may turn to political action to pursue shared policy preferences and ideas of their members, though this does not happen by default. Holding everything else equal, it is usually argued that a higher number of union members entails more political influence (Box-Steffensmeier, Arnold, and Zorn 1997; Masters and Delaney 2005: 369; Olson 1965: 68). We content that local organization shapes to what degree political resources of union members and their social networks – votes as well as time and money – can be effectively mobilized to influence lawmaking.

II.A. The Concentration Hypothesis

In a polarized two-party system, one party will be closer to the political leanings of most union members. Since the New Deal and especially early post-war years, that role has been played by the Democratic Party (Dark 1999; Lichtenstein 2013; Schlozman 2015). Democratic representatives in Congress are predictably more supportive of policies favored by unions than their Republican counterparts (Box-Steffensmeier, Arnold, and Zorn 1997; Seltzer 1995).³ A majority of union members regularly report favoring Democratic over Republican candidates (Rosenfeld 2014: 176). And while political economy models highlight that unions' narrow economic interests may diverge due to their specific occupational or sectoral structure, issue bundling inherent in two-party competition nonetheless produces a fairly stable alignment between Democrats and labor unions. Thus, the main problem of organized labor in the political arena is to get Democratic lawmakers elected to protect or expand liberal economic policies in Congress. This requires votes, money, and other resources to win office.

We argue that the structure of local union organization, in particular the previously ignored degree of *concentration*, matters for achieving this goal. By concentration we refer to the degree to which union members in a congressional district are concentrated in few local unions versus being distributed more evenly across several locals.

The significance of local unions has already been discussed in Olson's (1965) seminal analysis of collective action (also see Olson 1982). He points out that the federal structure of organized labor, with thousands of local unions as the basic organizational unit, may be conducive for collective action in a group that is large in the aggregate. Even in the absence of external enforcement, social interactions can sustain individual contributions toward the collective good — as long as local unions are relatively small (Olson 1965: 66-97). Olson (1965: 74) presumed that most local unions had become too large for this mechanism to be effective. However, our new descriptive data shows otherwise, at least for the years between 2003 and 2012. While there are some very large local unions, the

³Excluding Southern Democrats.

typical local union is small: it has slightly more than 100 members (see appendix A.2, Figure A.2.1; also see Freeman and Medoff 1984: 34-35). This setting fosters social interactions between local union members with shared interests and entails selective incentives to engage in costly activity on behalf of the group.

We take this logic to apply to political behavior on behalf of the group (i.e., union) more broadly. This includes voting as well as contributing money or time to a political campaign. It can also include efforts to foster norms of solidarity or to shape policy preferences in line with the group ideology (Ahlquist, Clayton, and Levi 2014; Kim and Margalit 2016). The basic mechanism is that the prospect of approval, respect, or companionship being awarded or withdrawn alters the calculus of political action. Social pressure remains a potent motive for political behaviour in the internet era (Druckman and Green 2013), and it does not require explicit action by group leaders, even though they may try to harness it for their purposes. For example, Abrams, Iversen, and Soskice (2011) present a model that elucidates how networks of family, friends, or co-workers shape participation in large elections (the same logic applies to political contributions). People vote despite a negligible probability of being pivotal if their social network attaches enough importance to voting for a particular party or candidate. Voting consistent with the group norm is rewarded, while deviations are punished, and in equilibrium voting and punishment are self-enforcing.⁴

Of course, empirical research had started to document the relevance of social interactions in unions for politics well before the publication of Olson's (1965) theory. In their study of the 1948 presidential election Berelson, Lazarsfeld, and McPhee conclude that social interactions within the same unionized plant were driving higher support for the Democratic party in a context where mobilization by local union leaders was low (Berelson, Lazarsfeld, and McPhee 1954: 37-53). Since then, a large body of research has confirmed the relevance of social incentives for political behavior more broadly, increasingly drawing on field experiments, though usually not considering unions (e.g., Druckman and Green 2013; Gerber, Green, and Larimer 2008).⁵

Thus, this paper argues (and shows empirically) that both the total number of union members and the horizontal concentration of members across different local unions within the same electoral district matter for democratic representation. It is uncontroversial to claim that a higher *number* of union members in a district should be linked to

⁴Of course, we are not arguing that unions' political influence is exclusively due local interactions. Aspects of leadership, such as centralization, ideology, or competence, are relevant at higher levels of the organizational pyramid, as demonstrated by, e.g., Ahlquist and Levy (2013). Leaders of national unions are also increasingly aiming to coordinate union campaign efforts across districts (Dark 1999). It is clear that such centralized efforts do not necessarily focus their resources on districts where there are numerous local unions, as there are strategic incentives to target competitive districts. Considering this, it is all the more remarkable that we find robust empirical evidence linking *local* union organization and legislative behavior.

⁵Research on the political economy of trade protection also emphasizes the importance of social interactions between workers (Busch and Reinhardt 2000).

more consistent legislative support for pro-union policies. But, less obviously, the *concentration* of members in few unions can actually reduce the political power of organized labor. The theory of group political action based on social incentives suggests that, for a given level of union membership, an increase in the concentration of members reduces legislators' support for pro-worker legislation. This concentration hypothesis follows from the reduced efficacy of social incentives in the larger units where members are concentrated. If the theoretical argument underlying the hypothesis holds water, then we should also observe that union concentration is negatively related to the election of Democratic candidates and political efforts aimed at their selection.

II.B. Alternative Perspectives

An alternative view is that the dispersion of union members across multiple unions in a district reduces the political influence of organized labor. For example, Key (1964: 66) argues that coordination problems between the leaders of different local unions undermine the electoral mobilization of union workers. When there are numerous unions in the same electoral district, union leaders deciding how much effort to put into political action are more likely to face a collective action problem in which leaders have incentives to free-ride on the political efforts of others. Furthermore, differences in governance rules and ideological commitments between different unions can reduce the capacity of unions to collectively work toward their shared political interests. Ahlquist and Levy (2013) argue that union-specific governance institutions shape leaders' capacity to mobilize members for political goals. Governance rules are said to emerge at critical historical junctures and, once adopted, shape the selection of leader types. Following this line of reasoning, one may conjecture that the dispersion of members across many different unions undermines their capacity for political mobilization. Such organizational fragmentation has also been suggested to reduce labor's political clout through inefficient allocation of political resources (Lichtenstein 2013: 143-144). If administrative and service functions performed by local unions exhibit significant fixed costs, then organizational fragmentation reduces resources available for politics compared to a centralized organization.

In sum, these arguments imply a relationship that runs opposite to our prediction based on social incentives: membership centralization increases union political power. While certainly plausible, given the assumptions just outlined, our evidence provides little support for these alternative perspectives.

Comparative political economy theories about union organization for wage bargaining (e.g., Iversen 1999; Pontusson, Rueda, and Way 2002) do not entail a clear prediction about the link between local organization and political influence. They mostly focus on the vertical distribution of bargaining authority within union confederations. Our focus is on the horizontal concentration of union members in the same electoral districts, and how it affects political representation. Theoretically, these approaches are comple-

mentary.⁶ Empirically, our research design holds constant the vertical distribution of bargaining authority, but one obvious avenue for future research is to find a suitable comparative research design.

III. MAPPING ORGANIZED LABOR

We map our two central features of local union organizations—their size and concentration—to electoral districts for the U.S. House of Representatives during the 109-112th Congress. We use administrative data covering almost 30,000 local unions for more than a decade, based on more than 300,000 individual reports. Our data set provides a new empirical perspective on the structure of organized labor in the US, and it allows a re-examination of the political influence of labor unions on lawmaking. In this section, we describe the measurement strategy and data.

III.A. Using LM forms

We analyze and aggregate mandatory reports filed each year by each local union with the U.S. Department of Labor, Office of Labor-Management Standards. As this is not a widely used data source in political science and cognate fields, some exposition of its advantages and drawbacks is helpful.

The legal basis for these reports is the Labor-Management Reporting and Disclosure Act (LMRDA) of 1959, which started as a movement for greater union democracy (initiated by the ACLU) but was transformed by legislators into a push to curtail the economic and organizational power of unions (Aaron 1960).⁷ The act introduced a comprehensive system of reporting: unions have to file an initial report with the Office of Labor-Management Standards (OLMS) followed by a yearly report using a so-called LM form. While the level of reporting detail varies by union income, all yearly forms include information on the number of union members and the address of the union office. For the public sector, the Civil Service Reform Act (CSRA) of 1978 affirmed union rights in the public sector created by previous presidential executive orders (Coleman 1980: 202). It also created a system of reporting similar to the one in place for the private sector (also overseen by OLMS).

⁶Combining the effects of social incentives and centralized leadership, one may conjecture that union political influence over national policy is maximized when there is a centralized and encompassing organization that consist of many local units.

⁷While the ACLU has pushed for greater internal union democracy since 1947, LMRDA legislation occurred in the wake of the ‘Select Committee on Improper Activities in the Labor Management Field’ hearings chaired by Senator McClellan from 1957–59. For a summary of LMRDA’s legislative history, see Aaron 1960.

Their legal basis makes LM forms a reliable source of information on unions and their members. Filing LM forms is mandated by law and failure to report, or reporting falsified information, is made a criminal offense in the LMRDA punishable by a fine of up to \$100,000 and/or imprisonment of up to 1 year.⁸ As a further incentive against misreporting, the validity of union reports is continuously verified. Under its Compliance Audit Program, OLMS selects a number of unions for detailed audit each year.⁹

Using LM forms has important advantages over using measures derived from surveys. Multi-purpose surveys usually only ask about union membership without any reference to the particular union in question. This precludes studying the organizational basis of unions and probably explains the focus on membership size in the literature on the political power of unions. Even with respect to union membership there are well-known measurement problems. For example, the CPS as the most widely-used source for union membership uses a rather broad question wording, querying respondents if the person in question is a “member of a labor union or of an employee association similar to a union”. This invites over-reporting leading to an overestimate of union membership (Southworth and Stepan-Norris 2009: 311). In addition, some systematic misclassification by respondents has been documented (Card 1996). A related issue is unit non-response, which plagues every survey.¹⁰

There are, of course, disadvantages to using administrative data. Perhaps the main potential drawback when using LM forms is that some unions are exempt from filing requirements. While each and every private sector union has an associated LM form, some public sector unions are not covered by the relevant laws and are not required to file regular reports. All unions representing postal or federal employees are covered. But unions that exclusively represent state, county, or municipal government employees are exempt. However, note the strong definition of exclusivity here. Unions almost exclusively representing say municipal government employees nonetheless have to file if only one of their members is employed in the private sector or by the federal government. For instance, a police union that also includes private security employees will have to file a report. The same holds for a union of municipality workers that includes postal staff. More generally, since the latter part of the twentieth century unions have no longer been purely organized along craft and industry lines. Today they enroll workers of different sectors and occupations (Lichtenstein 2013: 249):

Thus, the UAW [United Automobile Workers] has recruited health-insurance clerks and prison guards, and its largest local west of the Mississippi represents teaching assistants, tutors, and readers at the University of Califor-

⁸The corresponding figure for unions covered by CSRA is \$250,000 and 5 years imprisonment

⁹Unions are chosen based on random selection, OLMS’s internal discretionary criteria, or based on complaints of union members.

¹⁰While the CPS has very low non-response rates, they (in line with the general trend) have risen from about 7% in 1995 to 11% in 2014 (Robison and Grievies 2014: 1339), increasing the need to rely on weighting procedures to produce national or state estimates of union membership.

nia's ten campuses. Meanwhile, the United Steelworkers have organized Pittsburgh grocery workers, and the Communication Workers of America negotiate for state and municipal employees.

Similarly, the American Federation of State, Country, and Municipality Employees also organizes private sector workers in education, health and home care. Consequently, we argue that the degree of non-coverage in our data is limited. Below we present empirical evidence from a cross-validation exercise, which indicates that the issue is of limited practical importance.

III.B. Data Processing

From the Department of Labor we obtain a database of digitized LM forms. The process of turning these raw data into measures of union organization for each House district consists of three steps: data cleaning, geo-coding, and district-level aggregation using the relevant quantities of interest. To begin at the beginning, we first conduct checks of the digitization process of the LM forms, and find a high level of accuracy.¹¹

Using cleaned addresses, we produce a geo-location for each union address by processing each address via natural language processing and then matching it geographically.¹² Since not all addresses are necessarily complete, we use exact matching with attribute relaxation. This means that while exact matches are preferred, they can be produced at decreasing levels of precision: (1) The most precise geo-location is produced by an exact match to a segment of a street based on street and house or building numbers; (2) the second level of abstraction matches based on the ZIP portion of an address; (3) if this fails matches are based on the city or on county-regions; (5) If a whole address cannot be resolved, matches are based on the state portion of an address. However, the latter three strategies are rarely needed. More than 99% of the 358,051 unions forms filed between 2000 and 2013 are matched based on either an exact address or a ZIP code. Given a union's unique geo-location, it is placed into the map of districts for the House of Representatives for each Congress using the cartography shapefiles for congressional districts from the Census Bureau.¹³

¹¹For a randomly selected sample of 2,291 LM forms, we verified the coding of their content against the original documents. We found the coding to be of high standard. In 96.8% of all cases, digitized information on address and number of union members exactly match the original form submitted by the union officer. Most issues with the remaining 3.2% of deviating forms were minor and concerned mostly address details, such as small typographical errors. A number of those deviations result from mistaken entries by union officers, for example, by entering street addresses into the field intended for PO boxes (and vice versa). We address these issues first through data-cleaning of all 358,051 LM form address fields, and second through a flexible natural language processing step preceding our geocoding procedure.

¹²We use Texas A&M University's geocoding services; see Goldberg, Wilson, and Knoblock (2007) for details.

¹³Retrieved from <http://www.census.gov/geo/maps-data/data/tiger.html>.

With the geo-located union data in hand, we calculate two measures of local union organization. First, the total number of union members in the district is the sum of members in all local unions. Given census-based apportionment in Congress, population size is roughly constant across districts (and often identical within states), except in the seven at-large districts. Hence, it makes little difference whether we simply look at membership counts or normalize them by population. As discussed above, membership size is the dominant measure of union political power in the social science literature. Compared to surveys, our LM-based measure does not suffer from small sample problems and is geographically more accurate than those used in previous research (see, for instance Box-Steffensmeier, Arnold, and Zorn 1997).

Second, we calculate the degree of concentration vs. dispersion of union members. This is motivated by our theoretical discussion, which suggest that, beyond membership counts, the distribution of members into distinct locals shapes political mobilization. Following a long tradition in the empirical analysis of economic concentration, we calculate the 4-union concentration ratio (CR4), that is, the share of union members that is concentrated in the largest four unions. The measure maps well to our argument and is easy to interpret: concentration is higher if more members are captured by the largest four unions.¹⁴

Before describing the structure of local union organization in the US, we report how we validated our data. While there is no “gold standard” of accurate union membership numbers, we compare our data to the widely used CPS-based measure of state-level union density. The two measures agree to a large extent (their correlation, averaged over all years, is 0.86). On average unionization levels based on estimates from the CPS are 1.9 percentage points higher than counts of members from LM forms. This difference is consistent with some degree of over-reporting, induced by the broad question wording of the CPS (Southworth and Stepan-Norris 2009: 311). It can also interpreted as an upper bound for the non-coverage of some public sector unions in our data, confirming that LM forms provide a rather comprehensive accounting of unions. For a more detailed discussion, see appendix A.1.

III.C. Two Dimensions of Union Organization

A cross-sectional snapshot of union membership numbers (as population share) and membership concentration (CR4) across the map of congressional districts for 109-112th Congress is shown in Figure I. Panel (a) highlights that there is considerable variation in union membership even within states. For instance, states with a relatively high union density on average, such as California or New York, show uneven patterns of union

¹⁴An alternative measure is the effective number of unions (calculated analogously to the effective number of parties). It is highly correlated (>0.9) with our concentration ratio, and all results reported below also obtain when using it.

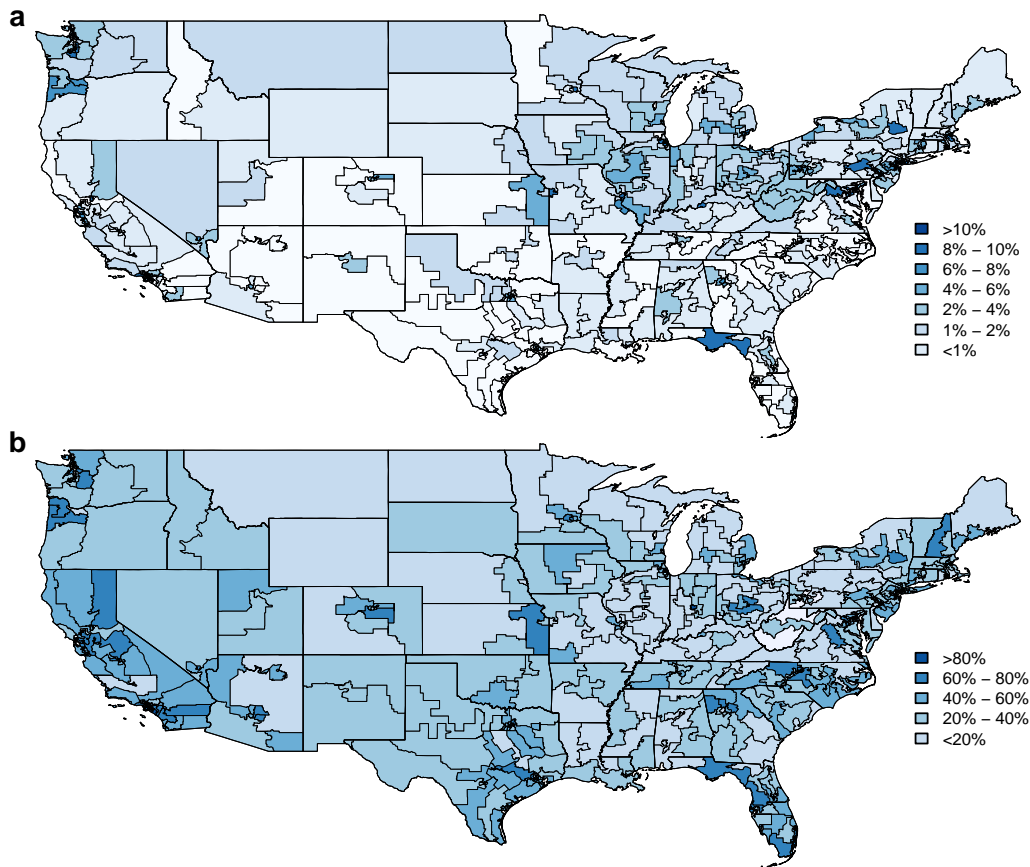


FIGURE I
 Union membership and concentration in the United States.

The map shows average union membership and union concentration for each district of the 109th to 112th Congress. Entries are averages over time. Panel (A) shows union members as percentage of the total population, panel (B) shows union concentration (measured as 4-union concentration ratio).

density, and even states with a low average union density, such as Florida or Texas, show pockets of high union density. Panel (b) shows that there is also considerable variation in union concentration between districts.

Theoretically, we have argued that membership numbers and concentration are separate dimensions of union organization. A district with a large number of union members might see these concentrated in a few unions, or dispersed among many. Empirically, these two characteristics turn out to vary independently as well. In Panel (a) of Figure II, we plot membership concentration against the logged number of union members for each of the 435 districts. The absence of any clear correlation ($r = -0.05$) is apparent from the widely scattered observations. This striking pattern suggest that we

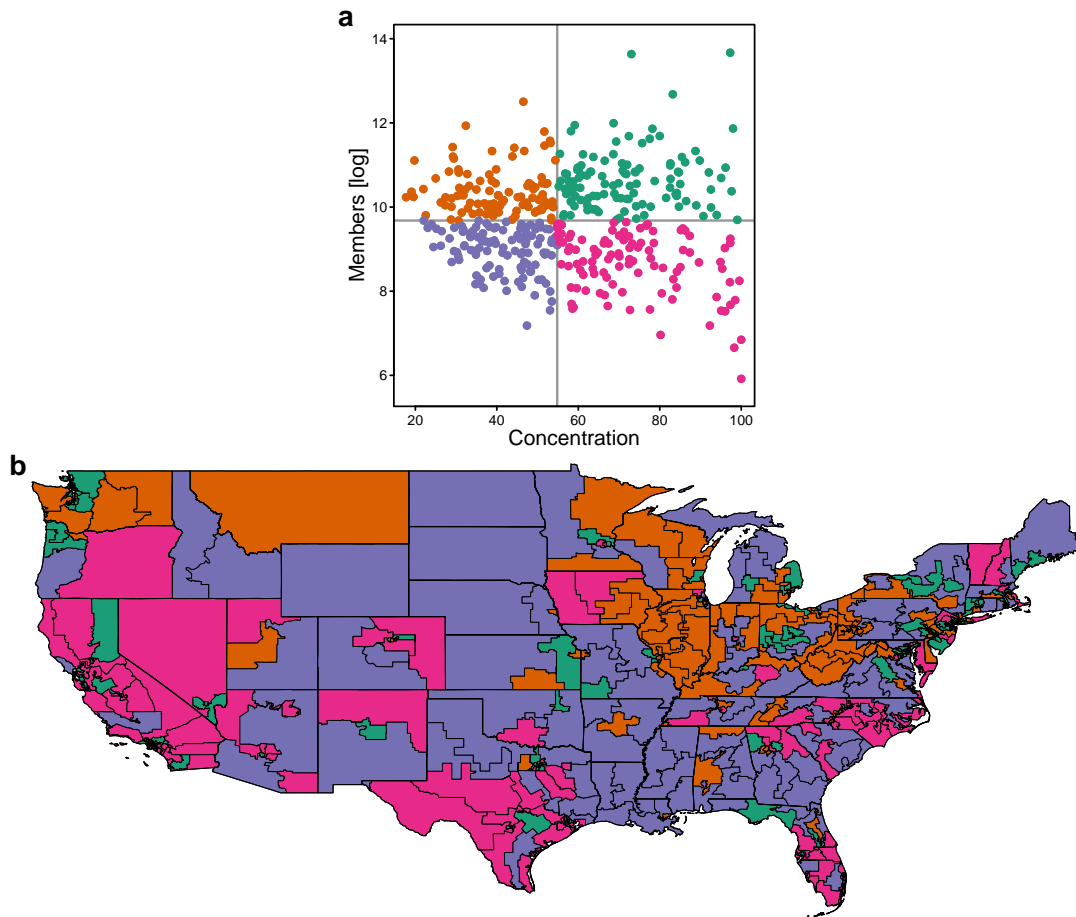


FIGURE II

Relationship between union membership and concentration.

This figure illustrates the independent variation of membership and concentration during the 109th to 112th Congress. Panel (a) plots CR4 concentration against (logged) membership in each district. Different colors mark the four quadrants obtained by splitting both measures at the median. Panel (b) maps the distribution of the four membership–concentration combinations. All entries are averages for 2005–2012.

can, for the sake of exposition, distinguish between four combinations of membership size and concentration (high-high, high-low, low-high, high-high). Panel (b) plots these combinations in the map of House districts. While this simplified classification understates variability, one can see that there is variation within states that is not captured by membership counts. For instance, while California’s 4th and 12th congressional districts both contain an almost identical, above average number of union members (about 40,000 during 110th Congress), they vary dramatically on the concentration dimension.

In the 4th the district, the four largest unions capture 92% of all members. In contrast, in the 12th district only about 50% of the members are captured by the largest unions. In a similar vein, Texas’s 7th and 11th congressional districts feature a roughly equal, low number of union members (about 2,500), but members are dispersed in the former (with a concentration ration of 55%), and concentrated in the latter (97%).

Taken together, Figures I and II illustrate that politicians face districts with greatly varying local union organizations. Beyond starkly different membership numbers, which is what most of the literature has focused on, differences in the distribution of members are equally pronounced.

IV. LOCAL UNIONS AND VOTING IN CONGRESS

Does the organizational structure of unions in a congressional district influence how the district’s representative votes in Congress? Our data allows us to directly assess our hypothesis that the political clout of organized labor is not only shaped by the number of union members (as has been found by many previous studies), but also by the distribution of members across local unions.

IV.A. Empirical Strategy

We estimate a series of models for legislators’ voting behavior as a function of local union characteristics. Our most flexible specification includes time fixed effects to capture shocks common to all units, as well as state fixed effects, which capture time-constant state-level unobservables. Furthermore, we also allow for flexible state-specific time trends, which capture the effect of changing omitted state-level confounders. Our model is:

$$y_{dst} = \mathbf{x}'_{dt} \boldsymbol{\beta} + \mathbf{u}'_{dt} \boldsymbol{\gamma} + \theta_s + \tau_t + \xi_s \psi(t) + \epsilon_{dst}.$$

Our dependent variable is y_{dst} , a summary index of the voting behavior of the representative from district d in state s during congressional term t based on a large number of votes. We rely on the most popular measure, the first dimension of DW-NOMINATE scores calculated by Poole and Rosenthal (1997), but note that alternative measures produce comparable results.¹⁵ DW-NOMINATE scores measure legislators’ revealed ideology on the dominant left-right dimension, where -0.75 is the most liberal and $+1.36$ the most conservative position in our data, and are comparable over time. Later, we also show results for individual key votes.

The vector \mathbf{u}_{dt} captures our two main union variables characterizing local union organization as calculated from LM forms: the logged number of union members and

¹⁵For instance, voting scores assembled by the AFL-CIO yield the same qualitative results.

the 4-union concentration ratio.¹⁶ As we have seen, different theoretical perspectives suggest opposite predictions about the direction of the concentration effect, but our argument based on social incentives in smaller groups implies that higher concentration leads to less responsive policymakers for a given level of unionization.

To capture common time shocks, such as mid-term versus presidential elections or shifts in national mood, our model allows for Congress-specific effects τ_t . All our models also include a set of time-varying district-level controls, \mathbf{x}_{dt} . Following the literature on roll call voting (e.g., see McCarty, Poole, and Rosenthal 2006), relevant constituency level characteristics include median family income, the racial composition (percentage white), and level of education (percentage with BA degree or higher). We also control for the share of service sector employment, as this sector has been more resistant to unionization (Freeman and Medoff 1984: ch. 13). All controls are from the American Community Survey conducted by the Census Bureau. Appendix A.2 provides descriptive statistics for all variables used in our analysis.

The impact of time-invariant state-level characteristics is captured by the state fixed effects θ_s . Most notably, “right-to-work” laws in some states allow workers in unionized companies to opt out of union membership and paying associated dues, and thus shape the mobilization capacity of organized labor.¹⁷ Similarly, collective bargaining rights for public sector workers vary between states (Flavin and Hartney 2015). The inclusion of state fixed effects alone leaves open the possibility that omitted time-varying confounders affect our results. While we are unable to rule out this possibility completely, we include state-specific time trends, ξ_s . To allow them to be a flexible function of time, we specify $\psi(t)$ as restricted cubic splines (Harrell 2001: 24).¹⁸ Finally, ϵ_{dst} are residuals. We employ standard errors robust to within-state heteroscedasticity and correlation (Arellano 1987).

Our analysis focuses on the 109-112th Congress (2005-2012). This reflects research design considerations and data constraints. As we (partially) pool observations from different districts, we focus on a single apportionment period during which district borders remain constant (i.e., 108-112th Congress based on the 2000 census), with the exception of several cases of court-ordered redistricting in Georgia and Texas (we ensure that our results hold when these are removed).¹⁹

¹⁶We take the log as the distribution of members is right-skewed. Using an alternative measure based on the share of union members yields the same substantive results.

¹⁷Their influence is captured by state-specific constants, since right-to-work laws are constant in our estimation sample (it ends before the only two reforms, which occurred 2012 in Indiana and Michigan, had time to materialize).

¹⁸Due to the limited range of our time variable, we specify only three knots. Other choices for the shape of time, such as linear and quadratic trends, produce identical substantive results.

¹⁹We exclude the 108th Congress because our district-level controls from the American Community Survey are not available. But note that including the 108th Congress while backwards interpolating missing control variables via district-specific linear time trends does not change our results.

IV.B. Results

In Table I we present results from six specifications. Our first three specifications are simple pooled linear models without fixed effects. Instead, we include two (time-invariant) state-level variables capturing the prevalence of anti-union politics in a state. We use the share of years between 1950 and 2004 in which a state has had right-to-work laws (Flavin and Hartney 2015) and public sector collective bargaining legislation (Holmes 1998). In column (1) we start with a model including only union membership and district covariates. Using our new measure of union membership, we confirm previous results linking union membership numbers to more liberal congressional voting outcomes (e.g., Box-Steffensmeier, Arnold, and Zorn 1997; Freeman and Medoff 1984; Kau and Rubin 1978; Seltzer 1995). In column (2) we add our measure of concentration (the district 4-union concentration ratio). Our results show that concentration matters for legislative outcomes. A unit increase in local union concentration is related to a 0.39 unit increase in conservative legislative ideology of that districts' representative (all else equal). As expected from the pattern evident in panel (a) of Figure II, we also find the coefficient of union membership virtually unchanged. This fact is confirmed in column (3), where we add the interaction of both dimensions (with both inputs centered for easier interpretation) and do not find model-based evidence for a conditional relationship between membership and concentration.

Our finding of the independent relevance of union membership and concentration holds when including state fixed effects in model (4), and both state and Congress fixed effects in model (5). These specifications focus on within-state variation between districts, and rule out as confounders both time-invariant state characteristics (such as culture) as well as idiosyncrasies of a given Congress. In specification (6) we aim to move closer to ruling out some time-varying state confounders as well, by including a flexible time trend for each state. Any remaining omitted state-level variable would have to exert a highly nonlinear influence on congressional voting to bias our results. In all three models we find that the coefficient of union membership is reduced in size, while the role of concentration is changed little. Substantively, our results imply that a standard deviation increase in (log) union membership is related to a 0.16 (± 0.04) standard deviation increase in liberal legislative ideology, while a standard deviation decrease in concentration is related to a 0.15 (± 0.05) standard deviation increase in liberal ideology. These are substantively relevant magnitudes and we demonstrate below that they are indeed sufficient to affect the outcomes of major votes.

These results lend strong support to our concentration hypothesis, which stresses the relevance of group-based political action based on social incentives. In contrast, our empirical findings run counter to theoretical perspectives focused on collective action problems between local union leaders, which imply the opposite effect. For a given union membership in a district, lower concentration means that there are more constituent local unions where workers interact. In this setting, social pressures and rewards can lead to an equilibrium of political mobilization even without strong leadership, generating

TABLE I
Union membership, concentration, and legislative voting.

	(1)	(2)	(3)	(4)	(5)	(6)
Union members	-0.097 (0.020)	-0.086 (0.019)	-0.088 (0.020)	-0.075 (0.021)	-0.073 (0.021)	-0.073 (0.022)
Concentration		0.388 (0.118)	0.387 (0.122)	0.392 (0.129)	0.382 (0.130)	0.387 (0.134)
Members×concentration			0.016 (0.094)			
Median HH income	0.116 (0.027)	0.110 (0.026)	0.110 (0.026)	0.097 (0.023)	0.097 (0.023)	0.097 (0.024)
Share white	0.763 (0.096)	0.900 (0.103)	0.898 (0.105)	1.213 (0.158)	1.170 (0.161)	1.170 (0.168)
Share BA degrees	-1.709 (0.301)	-1.955 (0.302)	-1.946 (0.320)	-1.508 (0.361)	-1.691 (0.365)	-1.693 (0.375)
Share service occup.	-2.652 (0.720)	-2.680 (0.652)	-2.677 (0.651)	-2.047 (0.764)	-2.870 (0.994)	-2.886 (1.037)
State union policies ^a	✓	✓	✓			
State fixed effects				✓	✓	✓
Congress fixed effects					✓	✓
State time trends						✓
N	1767	1767	1767	1767	1767	1767

Note: 109th to 112th Congress. Standard errors robust to within-state heteroscedasticity and serial correlation.

^a Share of years with right-to-work and public sector collective bargaining legislation between 1950 and 2004, based on Flavin and Hartney (2015) and Holmes (1998).

more political influence by organized labor, as pointed out by Olson 50 years ago (Olson 1965).

Assessing District Confounders

An obvious remaining worry is that unobserved district-level confounders drive our findings. Union membership and/or concentration may be endogenous to factors not captured by state effects, period effects, state-specific time trends, and basic district-level controls. Perhaps pre-existing political preferences explain why there are many union members distributed among multiple units and policymakers are more left-leaning in some districts but not in others? Several scholars argue that union strength is plausibly exogenous to political preferences, conditioning on the macro context and economic conditions, because the motivation to join or even form a union is mainly economic. For

individuals, union membership has important economic consequences related to wages, benefits, job security, as well as occupational preferences (e.g., Freeman and Medoff 1984). For instance, Olson (1965: 153-155) formulates a theory of union political action as a by-product of economic activism (also see Ahlquist and Levy 2013: 16).²⁰ Nonetheless, it is prudent to consider the possibility that prior political preferences are an omitted variable (Kim and Margalit 2016). To address the issue, we employ two proxies. Our first measure is the district-level Democratic vote share in the 2000 presidential election.²¹ Since election outcomes are partly a consequence of union political mobilization and perhaps even “preference activation” (Ahlquist and Levy 2013; Kim and Margalit 2016), we use the last presidential election prior to our period of analysis. Our second proxy is the average district-level political ideology of campaign donors, as inferred from their donation patterns by Bonica (2014). Including these measures means that our analysis partials out unions’ prior impact on district preferences and election outcomes.²²

Our third specification includes the (logged) number of public union members in a district. While the presence of public union members is not a confounder, recent research has stressed the particular characteristics of public unions and their political influence (e.g., Moe 2006; Anzia and Moe 2015; Flavin and Hartney 2015). One possible concern is that our results are mostly driven by public unions, so that our estimated union coefficient would drop in size substantially when accounting for the prevalence of public unions. Another concern is that our analysis pools two disparate groups averaging effects of possibly different size or even sign. Our data does not allow us to identify all public unions and their members (recall our discussion above). Our count of public union members is therefore constructed from a public-private indicator based mostly on the classification scheme of the Department of Labor augmented with a selection of public unions by name.²³ While limited in its coverage, it captures “distinctly” public unions, which allow us to assess possible effect differences.

A further concern we want to address is that the impact union concentration has on legislators’ behavior merely mirrors the prevalence of business influence in a given district. A district being dominated by few large firms may lead mechanically to higher levels of concentration (fewer unions per given number of union members). What we term the ‘effect’ of union concentration then simply reflects the financial resources large

²⁰Historically, many unions in the US were reluctant to enter politics, though this changed during the course of the twentieth century (Lichtenstein 2013).

²¹This excludes districts that were changed due to re-districting after apportionment.

²²The short times series (T=4) and the slow-moving nature of union organization imply that a within-district analysis is not informative, as district fixed effects cannot be distinguished from the variables of interest.

²³We select these by regular expressions capturing public schools, firefighters, county employees, postal & federal employees etc.

TABLE II
Proximate district level confounders.

	(1)	(2)	(3)	(4)	(5)
Union members	-0.049 (0.024)	-0.040 (0.021)	-0.075 (0.018)	-0.075 (0.020)	-0.057 (0.020)
Concentration	0.330 (0.113)	0.309 (0.099)	0.371 (0.121)	0.381 (0.126)	0.306 (0.091)
Presidential vote share ^a	-1.440 (0.279)				-0.835 (0.313)
Donor Ideology ^a		1.189 (0.105)			0.639 (0.070)
Public union members			-0.032 (0.013)		-0.021 (0.011)
Corporate contributions ^b				0.017 (0.022)	-0.002 (0.018)
N	1711	1676	1767	1722	1575

Note: All models include state and congress fixed effects and the same district-level controls as in Table I. Standard errors robust against within-state heteroscedasticity and serial correlation.

a Presidential vote share in 2000 election, donor ideology (Bonica 2014) in 108th congress.

b Logged total of corporate contributions to candidate obtained from the Center of Responsive Politics.

firms are able to employ, in order to shape legislative outcomes. To account for this possibility, we include (logged) corporate contributions to each legislator.²⁴

The results from these additional analyses are summarized in columns (1)-(5) in Table II. Unsurprisingly, both proxies for district preferences considerably help to predict legislative behavior. The influence of corporate contributions on overall legislative outcomes is statistically indistinguishable from zero (its estimated coefficient is larger and statistically significant when focusing on contributions to Republican candidates). However, our results for union concentration remain virtually unchanged. The coefficient on union members is somewhat dampened, but it remains substantively important and significant at conventional levels net of proximate district-level factors. The coefficient on the number of public union members is statistically different from zero and points in the same direction as our union membership measure. However, it does not alter the relationship between membership and concentration and legislator ideology. In sum,

²⁴We calculate corporate contributions similar to Carnes (2013) using the raw campaign finance contribution data from the Center for Responsive Politics. We sum FEC reported contributions to candidates from all “business” sectors (i.e., excluding labor and single-issue donations). Our count includes both individuals and PACs (but using either alone does not change our results).

these additional results rule out pre-existing political preferences or partisan leanings, as well as corporate strength, as an alternative explanation. A number of further specification and robustness tests, reported in Appendix A.3, show that the findings are robust to various modeling assumptions.²⁵

Contributions and Partisan Selection

Now, let us shift the focus of the analysis to shed some initial light on potential channels of influence. If the argument underlying the compensation hypothesis is at work, we should also see that the two dimension of union organization we have been examining are linked to the *selection* of partisan politicians, with unions rallying around Democratic candidates. Less obviously, again, higher concentration should be associated with a lower probability of a Democratic victory. Similarly, it should be associated with lower *financial contributions* by unions and union members to sitting members of Congress, which are important to ensure future re-election. The effect of membership should be positive throughout.²⁶

Table III clearly show the empirical relevance union organization for both contributions and partisan selection, supporting the logic behind our main hypothesis. The first column presents results from a linear probability model where the dependent variable indicates if a legislator is affiliated with the Democratic Party. We find that districts with more union members and lower levels of concentration show a higher propensity of selecting a Democrat, all else equal (our model again accounts for observable district characteristics, as well as state and Congress fixed effects). In the second column we study the influence of local union characteristics on financial contributions. The dependent variable is the (logged) amount of candidate contributions from labor.²⁷ Our results lend credence to the argument that local union structure relates to candidate contributions: a 10 percent increase in the number of union members in a district leads to a 2 percent increase in labor contributions. Even more notably, a 10 percent decrease in concentration of members leads to a 12 percent increase in labor contributions, holding everything else constant.²⁸

²⁵We exclude districts in Georgia and Texas that experiences significant redistricting; we exclude a small number (27) of districts with influential values as “outliers”; we estimate models with logged effective number of unions instead of our CR4 measure. In all cases we find our substantive results unchanged. See appendix A.3 for more details.

²⁶A more extensive analysis of channels of influence is beyond the scope of this paper, but part of ongoing work.

²⁷We calculate this amount in the same way as corporate contributions (see above), but focus on contributions from the labor sector.

²⁸One may ask about the origins of union concentration. While a full analysis of this question is beyond the scope of this paper, Appendix A.4 provides some initial results on the antecedents of local union organization. We find that the legacy of slavery and state-level labor policies are clearly related to district-level unionization—but not to district-level concentration of union members. This striking

TABLE III
Candidate selection and labor contributions.

	Democrat	Labor contributions
Union members	0.065 (0.019)	0.214 (0.064)
Concentration	-0.321 (0.129)	-1.201 (0.408)
N	1765	1618

Note: Models include state and congress fixed effects and district-level controls (see Table I). Standard errors robust against within-state heteroscedasticity and serial correlation.

IV.C. Union influence on key votes in the 111th Congress

We have shown that union characteristics matter for legislators' revealed ideology. So far, we have measured the former as the one-dimensional (unobserved) variable underlying representatives' (observed) voting record. To complement this analysis, we now turn to individual votes on key legislation where unions took explicit positions. In particular, we study all 35 major pieces of legislation in the 111th Congress that are part of the political scorecard of the AFL-CIO and code whether a representative votes in line with the union recommendation. These votes include, among others, the final passage of the Affordable Care Act (H.R. 3590) on March 21, 2010, and the Jobs for Main Street Act (H.R. 2847) on December 16, 2009. Health care reform is widely considered one of the major reforms of the new century and Obama's signature proposal, something that unions had supported for decades but failed to achieve, notably during Bill Clinton's presidency. Both votes were razor-tight and highly partisan (219 vs. 211 and 217 vs. 212 in favor).

We estimate logit models for each key vote accounting for district characteristics and state random effects with standard errors robust to arbitrary within-state correlation.²⁹ Figure III plots first differences in the probability of a representative casting a vote in line with the AFL-CIO supported position together with 95% confidence intervals.³⁰ It

asymmetry suggests that the origins of local membership concentration are less political than those of unionization as such.

²⁹District characteristics are the same as in Table I. The small number of districts per state (and the existence of at-large districts) would make models including state dummies (instead of random effects) subject to incidental parameters bias.

³⁰We calculate this difference in probability by increasing the membership variable and respectively decreasing the concentration variable by one standard deviation from the mean while holding all other

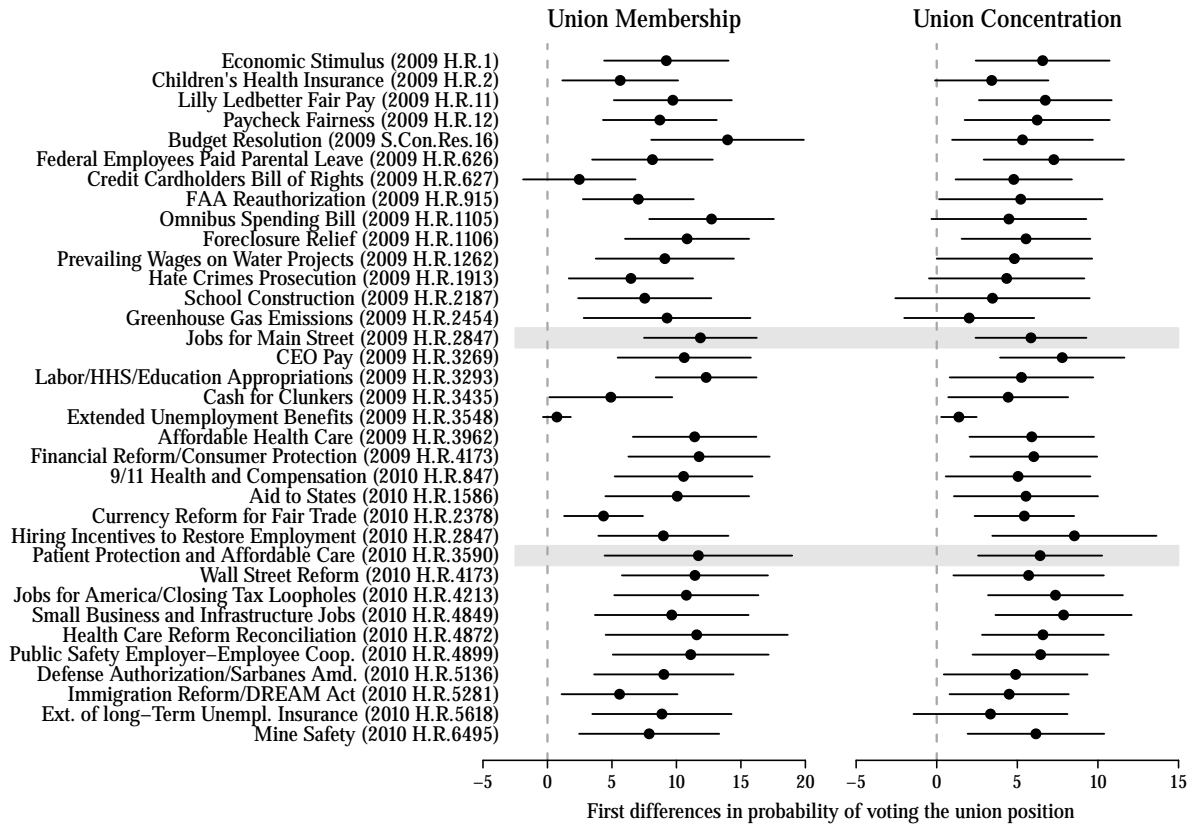


FIGURE III
Unions and key votes in the 111th Congress

This figure shows the influence of union characteristics on key votes (as defined by AFL-CIO) in 2009 and 2010. Each row entry represents first differences in the probability of a representative casting a vote in line with the AFL-CIO supported position as function of a SD increase in membership and a SD decrease in concentration. All models include district controls and state random effects and allow for arbitrary within-state correlation. Line segments are 95% confidence intervals.

underscores, once again, the substantive magnitude of the influence of union organization on legislative behavior. In many of the votes that matter to the AFL-CIO a standard deviation increase in membership numbers increases the probability of a representative voting the pro-union position by almost 10 percentage points. The respective effect size for the influence of union concentration is around 5 percentage points (all else equal). In the case of the final passage of the Affordable Care Act, a standard deviation increase

covariates at their observed value (cf. Hanmer and Kalkan 2012) and integrating out the state random effects.

in union membership increases the probability of a supportive vote by 11.6 (± 3.6) percentage points, while an equally sized decrease in union concentration increases it by 6.6 (± 1.9) percentage points. In contrast, the far less divisive “cash for clunkers” bill (H.R. 3435, passed 316 vs. 109 in favor) is comparatively less shaped by union influence: a standard deviation increase in union membership increases the vote probability of a supportive vote by 5 (± 2.4) percentage points, while an identical decrease in union concentration increases it by 4.4 (± 1.9) percentage points.

V. CONCLUDING REMARKS

While scholars and public commentators have both praised and bemoaned the influence of organized labor on democratic politics, most research has focused solely on the number of union members as a sufficient statistic to characterize labor unions’ political clout. Our research reported in this paper suggests that this view is too limited. In order to account for unions’ political impact on national lawmaking, one needs to take into account the organizational structure of local unions. We argue that concentration of union members in few unions has deleterious effects on unions’ ability to influence lawmaking. We use unique administrative data on thousands of local unions to map union organizational characteristics to congressional districts and demonstrate that the degree of horizontal membership concentration varies independently of the number of union members in a district. This second dimension of union organization is robustly linked to legislative behavior in the House of Representatives. For a given level of union density, representatives from districts where membership is relatively dispersed across multiple unions have more liberal voting records than representatives from districts where members are concentrated. This finding is consistent with the theory of political mobilization based on social incentives.

This line of reasoning has antecedents in the social science literature going back many decades. But more recent research has mostly ignored the local nature of unions when studying the political influence of organized labor. Rather, unions are often studied as a large formal organization where local units are (implicitly) assumed to play only a minor role. The predominance of this approach may partly be due to the limitations of deriving measures of union characteristics from national survey data. Thus, we hope that our data is able to enrich other studies of organized labor and politics beyond congressional lawmaking.

A. APPENDIX

A.1. Comparison of LM form and CPS measures of union density

How does our union data compare to existing popular measures of union density? In Figure A.1.1 we aggregate our measure of unionization based on LM forms to yearly state averages (on the x-axis) and plot it against unionization estimates based on the Current Population Survey calculated by Hirsch and Macpherson (2003). Their data are available at unionstats.com and widely used in political science, economics, and sociology. Note that they also offer sub-state data, but these are confined to metropolitan statistical areas. See Hirsch, Macpherson, and Vroman (2001) for more details.

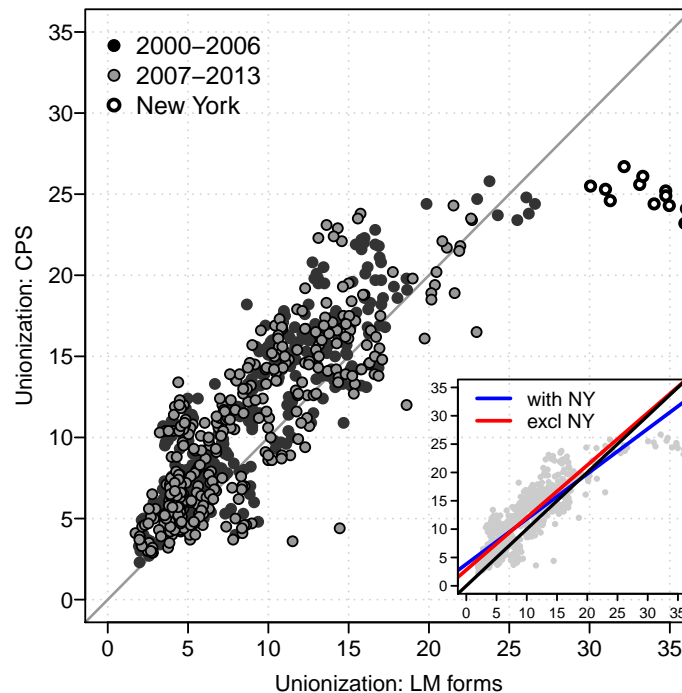


FIGURE A.1.1

Comparison of LM-form and CPS estimates of state unionization levels

This figure shows the close correspondence between state-level unionization calculated based on LM forms and CPS-based estimates. We split our data into two periods (pre- and post-2006) to illustrate the lack of time patterns. Open circles mark the state of New York. Red and blue lines in the bottom right plot are least-square fits excluding and including New York.

First, note the high correspondence between the two measures. On average unionization levels based on estimates from the CPS are about 1.9 percentage points higher than counts of members from LM forms, and the correlation is 0.86. As has been noted

before, the wording of the CPS question is likely to induce over-reporting of union membership as it asks about the membership in a union or “similar” employee associations (Southworth and Stepan-Norris 2009: 311). Thus the difference is an upper bound of the non-coverage of some public sector unions in our data. The systematic similarity between our aggregated LM forms data and the CPS measure is confirmed by the linear fit between both measures being close to 1, plotted by the blue line in the bottom right corner of Figure A.1.1. Second, note that a comparison of LM-CPS pairs in Figure A.1.1 for the years prior and post 2006 yields no apparent pattern, indicating that the the gap between both measures does not increase over time. This can be quantified by an F-test of different trends between both periods. The null hypothesis of different trends is clearly rejected at $F = 1.60$.

In some cases greater differences are apparent. The most obvious case is that of New York (marked by circles), where in all years the share of unionized workers based on counts of LM form reports is higher than that based on CPS survey responses. Note that if we exclude New York, the correspondence between our measure and the CPS-based one is even higher, as shown by the second linear fit line (in red). A plausible explanation is that differences in this case are due to differences between the location of the union office and workplace (New York city) and workers’ residences (in nearby New Jersey).

A.2. Descriptive statistics

Table A.2.1 shows descriptive statistics and sources for the variables included in our models. Figure A.2.1 shows the distribution of the median size of unions in house districts in the 109th to 112th Congress.

TABLE A.2.1
Descriptive statistics

	Mean	SD	Min	Max
W-Nominate Dim 1 scores ^a	0.14	0.53	-0.75	1.36
Union members [log] ^b	9.66	1.11	2.67	13.73
CR4 Union concentration [0-1] ^b	0.57	0.20	0.14	1.00
Median HH income [10,000\$] ^c	5.19	1.38	2.11	10.74
Share white [0-1] ^c	0.48	0.34	0.00	0.97
Share BA or higher [0-1] ^c	0.28	0.10	0.07	0.66
Share service sector empl. [0-1] ^c	0.18	0.03	0.09	0.41
Presidential vote share 2000 [0-1] ^d	0.52	0.15	0.20	0.94
Donor scores ^d	0.29	0.33	-0.71	0.95
Representative's party affiliation [0,1] ^d	0.49	0.50	0.00	1.00
Corporate contributions [log] ^e	13.35	0.85	7.56	16.59
Labor contributions [log] ^e	10.76	1.66	4.61	13.97

- a* Data from Poole and Rosenthal (1997); <http://www.voteview.com/>
b Our calculation based on Department of Labor LM forms.
c Data from American Community Survey.
d Data from Bonica (2014).
e Calculated from raw data provided by the Center for Responsive Politics.

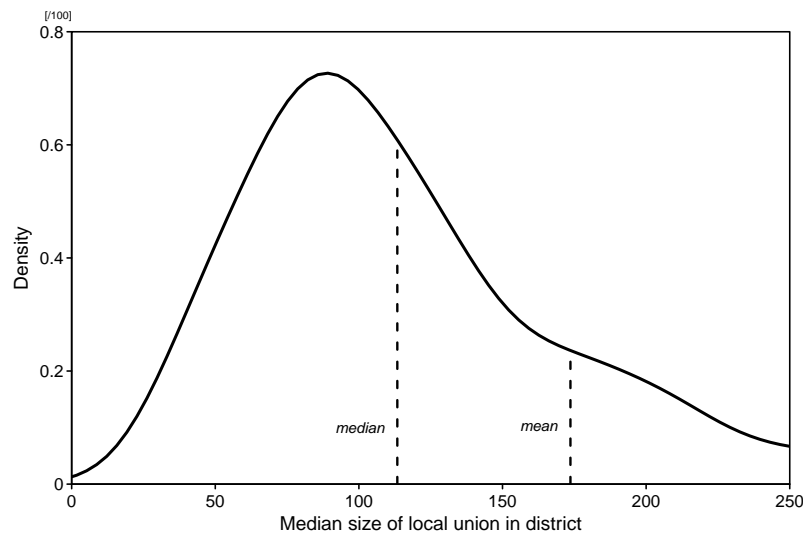


FIGURE A.2.1
Distribution of Median Size of Local Unions in House Districts.

This figure shows a kernel density plot of the median size of local unions in each house district in the 109th to 112th Congress. Mean and median of this distribution are indicated by dashed lines.

A.3. *Additional robustness tests*

We present a number of robustness tests in Table A.3.1. In specification (1) we exclude districts in Georgia and Texas affected by court-ordered redistricting. We find that the removal of these 53 district-years has no substantively influence on our results. In specification (2) we substitute an alternative concentration measure using the (log) effective number of unions in a district. Again we find statistically significant support for the concentration hypothesis. We examine if our results are sensitive to influential cases (“outliers”) in specification (3). We calculate the *dfbeta* influence statistic for each district-year and variable. We find rather small influence statistics for all cases. Nonetheless, we exclude 27 cases, whose influence statistic was larger than a threshold of 0.05. We find that this changes does little to alter our core conclusion; rather, they provide clear support for our concentration hypothesis. Finally, specification (4) replaces our analytical robust standard errors with a cluster bootstrap revealing that our results do not depend on this technical detail.

TABLE A.3.1
Additional robustness tests

	Members	Concentration
(0) Original specification	−0.073 (0.021)	0.382 (0.130)
(1) Redistricting	−0.075 (0.022)	0.361 (0.138)
(2) Alternative concentration measure	−0.077 (0.022)	−0.102 (0.026)
(3) Influential cases	−0.081 (0.017)	0.506 (0.120)
(4) Bootstrap standard errors	−0.073 (0.022)	0.382 (0.142)

Note: OLS with standard errors robust to within state heteroscedasticity and serial correlation (except for specification (4) which uses a cluster bootstrap with 200 replicates).

A.4. *Correlates of Union Organization*

As history and recent reforms in Indiana, Michigan or Wisconsin have shown, labor laws that shape unions’ ability to organize are highly political. While disentangling cause and effect is difficult and beyond the scope of this paper, it is not surprising that states with a history of right-to-work legislation establishing open union shops have less union members than states without these laws, and the reverse holds for states

with laws establishing collective bargaining for public employees. Deeper causes of this previously observed link between policy and union strength may be found in history. For instance, some scholars argue that Southern elites in states with a high share of slaves before abolition subsequently had the incentives and the capacity to limit the extension of economic rights to former slaves or poor whites (Schlozman et al. 2015; Lichtenstein 2013).

Table A.4.1 shows results of auxiliary regression models for the effect of the historical legacy of slavery (and related differences in labor productivity) and state labor policies on union organization characteristics. Columns (1) and (2) show that both history and state RTW and collective bargaining laws shape current (district-level) union membership. These political factors do little to change levels of union concentration, as shows in columns (3) and (4). These results suggests that the origins of local membership concentration are less political than those of unionization as such. This result underlines that union concentration is substantively distinct from membership size. Indirectly, it also bolsters the case that, given state effects and district characteristics, our main finding for the effect of union concentration on voting is unlikely to be biased by unobserved factors.

TABLE A.4.1
Historical legacy, state labor policies, and union organization.

	Members		Concentration	
	(1)	(2)	(3)	(4)
Share of slaves 1860	-2.340 (0.383)	-0.839 (0.503)	-0.027 (0.074)	-0.047 (0.111)
Right-to-work law		-0.339 (0.225)		0.029 (0.033)
Collective bargaining law		0.995 (0.408)		0.023 (0.054)
F-test labor policy		p<0.000		p=0.578

Note: N=1742. OLS with standard errors robust to within state heteroscedasticity and serial correlation. Columns (1) to (4) are regressions of union membership and concentration on district-level controls and historical legacy and policy variables. Policy variables measure share of years with legislation between 1950 and 2004, based on Flavin and Hartney (2015) and Holmes (1998). The share of slaves in 1860 is from Mitchener and McLean (2003).

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