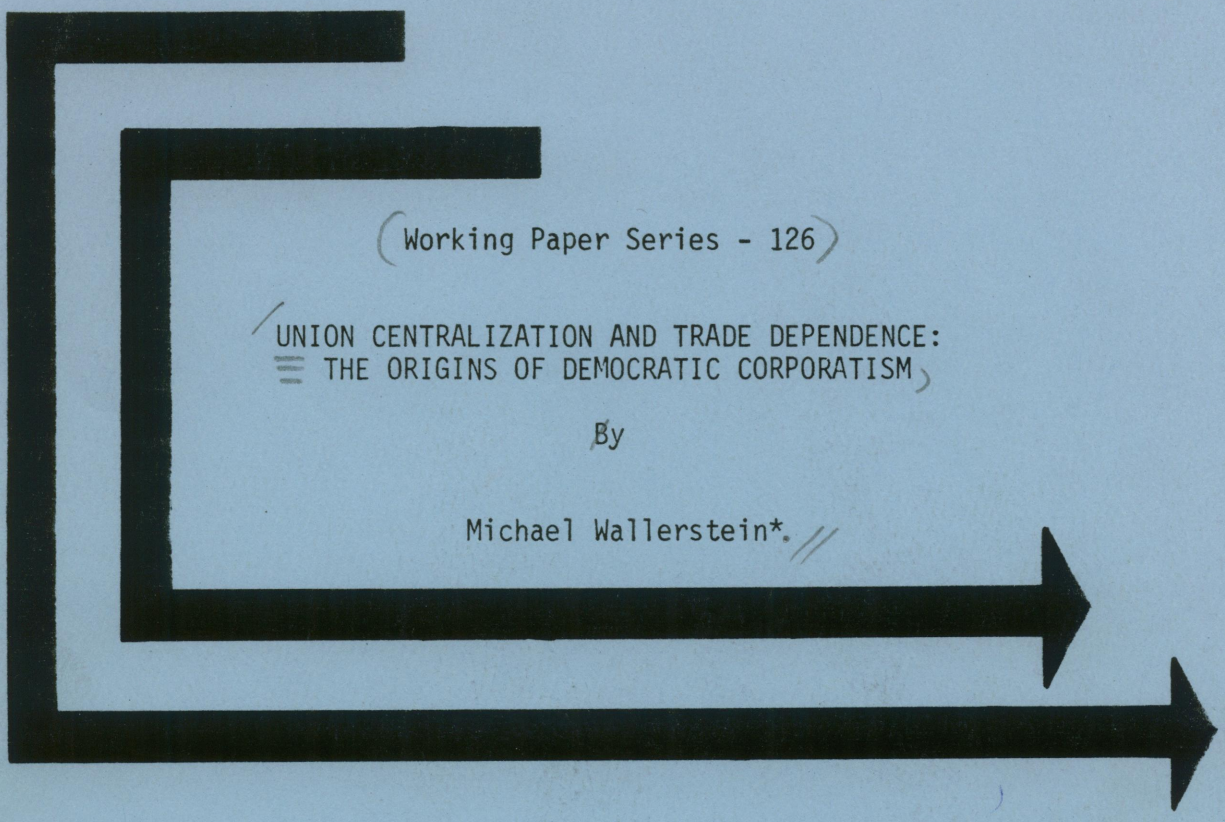

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UNION CENTRALIZATION AND TRADE DEPENDENCE: THE ORIGINS OF DEMOCRATIC CORPORATISM

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Abstract

This paper presents a model and a test of the impact of trade dependence on the centralization of the union movement. A bargaining model of labor negotiations is used to derive the political coalitions that different types of public policies generate. In particular, protectionist policies which produce industrial alliances are contrasted with welfare policies which divide interests along class and income lines. Centralized confederal structures were more likely to be adopted countries in which dependence on export markets reduced the possible gains that could be achieved through protection and other industry-specific policies. This hypothesis is tested for the set of advanced industrial societies in the early postwar period.

Introduction

This work concerns the institutionalization of solidarity among trade unions. Cooperation among workers in the same craft or industry is essential for the survival of trade unions, but cooperation among organized workers in different occupations or industries is neither indispensable nor universal. Although unions may stand to benefit greatly from the support that other unions can provide, the promise to act in solidarity entails costs, most importantly, a loss of autonomy. A union cannot, for example, honor its own labor contracts and, at the same time, freely strike in sympathy with other unions fighting different employers. Nor can a union expect its employers to honor collective agreements that it refuses to uphold. Thus unions who value labor contracts either refrain from sympathy strikes except in extraordinary circumstances or demand some controls over the industrial actions of unions they will help. Similarly, union federations which maintain strike funds cannot and do not allow affiliated unions to draw upon the funds whenever they wish [Heady 1970: 426-7].

This is the rationale for union centralization. Unions which seek the benefits of cooperation with other unions must pay the price of allowing other unions, through the peak association, to participate in their internal affairs. Centralization entails the delegation of authority by (in most cases) legally independent unions to the national confederation with which they are affiliated. Concretely, centralization has meant the dominance of the national confederation in the decisive areas of collective bargaining and industrial conflict [Heady 1970, Windmuller 1975]. In centralized confederations, it is the peak association which largely determines the

overall terms of labor contracts, often through direct negotiations with peak associations representing employers. Nor can affiliates of centralized confederations generally start or settle strikes without the confederation's approval.

Why the unions of some advanced industrial societies have joined in centralized confederations while unions elsewhere have rejected such infringements on their autonomy is the question of this paper. After a discussion of the prominence of union centralization in the study of corporatism and comparative public policy (section 2) and a brief historical sketch (section 3), a formal model of collective bargaining is used to illustrate a new hypothesis concerning the impact of trade dependence on the decision of autonomous unions to accept the dominance of a national union confederation (sections 4 - 7). The hypothesis is then tested with cross-national data for the set of advanced industrial societies in the early postwar period (section 8). The paper concludes with a summary and a brief consideration of change in union centralization over time.

Union Centralization and Corporatism

The subject of union centralization has grown since 1970 from being a rather narrow concern of specialists in industrial relations to a central topic in comparative politics. There seem to be two reasons. The first is the salience of union centralization in the concept of corporatism. The second, not unrelated to the first, is the discovery in cross-national studies that union centralization has important consequences for a variety of political and economic outcomes.

Corporatism is a concept with multiple definitions. Philippe Schmitter [1974, 1977] originally characterized corporatism as a system of interest

representation dominated by a few encompassing and centralized organizations, in explicit contrast to the pluralist model of political competition among numerous, narrow interest groups divided along continuously shifting lines of cleavage. While, in Schmitter's definition, corporatism is an adjective that qualifies the system of interest representation as a whole, the emphasis throughout the literature has been on the organizational structure of trade unions and employers' associations. Moreover, since the organization of employers generally mirrors the organization of workers and since collecting data on unions is substantially easier than gathering data on employers' associations, the operationalization of corporatism has generally had an even narrower focus on unions alone. Indices of corporatism are almost always constructed by combining an index of union centralization with some other index which varies from author to author [Compare, for example, the work of Schmitter 1981, Wilensky 1976, 1981 and Cameron 1984].

The second major usage of the term "corporatism" is to describe a mode of policy making whereby governments regularly negotiate formal or informal agreements with private interest groups covering both public and private behavior [Lehmbruch 1979, 1982].[1] Thus the "comprehensive tripartite bargained incomes policy" adopted in Norway in the late 1970's in which the government concluded an agreement with the national labor federation, the national employers' association and the national organizations representing farmers and fishermen covering "not only industrial wages but also taxes, salaries, pensions, food prices, child support payments, farm support payments, and so on" represents a "highly developed example" of corporatist policy formation [Schwerin 1980: 73, 102]. Such an approach to policy making relies on the capacity of national associations representing labor

and capital to bargain on behalf of their members and to commit them to binding agreements. In other words, corporatism as a mode of policy making is difficult without a concomitant centralization of unions and employers' associations.

Given that most economic theory implies that "One Big Union" is essential for workers to strike effectively and win wage gains, one might expect corporatism or union centralization to be associated high levels of union militancy. Yet the empirically observed patterns are just the opposite.[2] Centralized union movements strike far less frequently than decentralized unions [Ross and Hartman 1960, Ingham 1974, Hibbs 1976]. Associated with the lower incidence of industrial conflict is wage restraint. Gerhard Lehmbruch [1977, 1979, 1982] and Leo Panitch [1977] find union support of incomes policies to be at the center of corporatist policy making. Indeed, Bruce Heady [1970] and Peter Lange [1981] conclude that union centralization is a necessary condition for the successful implementation of incomes policies.[3] Armingeon [1982], Blyth [1979], Blaas [1982], Cameron [1984], Crouch [1985] and Bruno and Sachs [1985] all offer evidence associating centralized bargaining with relatively low growth rates of both nominal and real wages. Further, the "labor quiescence" associated with centralized bargaining, to use David Cameron's [1984] term, is widely seen to have beneficial consequences for employment and growth [Crouch 1985, Cameron 1984, Bruno and Sachs 1985, Lange and Garrett 1985, Garrett and Lange 1986, Hicks 1987]. At the same time, corporatism or union centralization is highly correlated with high rates of growth of welfare spending, although the empirical work is confounded by the simultaneity of corporatism and the electoral strength of Left parties [van Arnhem and Schotsman 1982, Katzenstein 1983, 1985, Wilensky 1976, 1981, Cameron 1984,

Hicks and Swank 1984a, 1984b].

There is evidence, in sum, that union centralization, either alone or as a core component of corporatism, has a significant impact on strike frequency, the growth of real and nominal wages, unemployment, economic growth and welfare spending. For these reasons, the question of why unions have adopted centralized confederal structures in some countries and not in others has become increasingly central in comparative political economy.

Centralization in the Postwar Period and Before

Since the Second World War cross-national differences in union centralization have been far greater than changes over time.[4] Yet striking cross-national differences in centralization were not evident in the early years of the union movement. The union confederations of today were all largely decentralized prior to the 1930's.

The belief that the only successful union would be "One Big Union" covering workers in all branches of the economy was commonplace among union organizers in the 19th century. Attempts to build union movements in which workers of all trades and industries would be organized together were made repeatedly: in England by the Owenite Grand National Consolidated Trades Union in 1834 and again by the New Union movement of 1889-1892 [Pelling 1963, Hobsbawm 1964], in Germany by the Lassalleans in 1868 [Landauer 1959], in the United States by the Knights of Labor in the late 1880's and again by the Industrial Workers of the World in the late 1900's [Perlman 1922, Ulman 1955]. But all of these movements either failed to survive or, like the "New Unions" of Great Britain, quickly abandoned their aspirations of uniting workers everywhere [Hobsbawm 1964].

The unions which achieved durability were those that forsook class

solidarity and concentrated on organizing workers of particular occupations or industries. The first to organize successfully were highly skilled workers for whom "One Big Union" meant an alliance with workers in weaker bargaining positions, an alliance in which the skilled workers felt they gained little except the burden of supporting the unskilled. Thus the AFL, champion of craft autonomy, displaced the Knights of Labor as representative of skilled workers in the United States [Ulman 1955: 371]. Similarly, the debate over the power of the confederation at the founding congress of the Swedish Landsorganisation (LO) in 1898 ended in a decisive victory for those in favor of decentralization: the stronger unions rejected any restrictions of their autonomy [Blake 1960]. With the partial exception of Norway (and, much later, of Israel), national union federations began in all countries as weak organizations with limited functions and no authority [Windmuller 1975].[5] Moreover, the most prominent exceptions to the segmentation of industrial conflict along occupational and industrial lines, the general strikes of 1902 in Belgium, 1909 in Sweden, 1920 in France, 1921 in Norway, 1926 in Great Britain, and even of 1919 in Seattle demonstrated in their failures the weakness of class solidarity as a source of strength in battles with employers.[6]

The adoption of centralized confederal structures occurred in the period from the mid 1930's through the aftermath of World War II. In Norway and Sweden the new prominence of the labor federation was embodied in formal agreements with employers following the accession to power of social democratic parties. In Belgium and the Netherlands the increase in centralization began during the German occupation. The Austrian unions adopted the most highly centralized confederal structure in Europe during reconstruction [Windmuller 1975, OECD 1979]. By the early 1950's, the

postwar pattern was in place. While in most countries labor confederations continued without authority over the actions of affiliates, in others the most critical decisions unions face--what to demand in wage bargaining, when to call a strike--were either being directly decided or closely supervised by their confederations in the name of the labor movement as a whole.

Attempts to explain why unions adopted centralized confederal structures in some countries and not in others often consist of lists of causes only slightly shorter than the number of cases to be explained. [See Windmuller 1975 and von Beyme 1980]. Geoffrey Ingham [1974], however, did suggest a general and parsimonious explanation which has gained wide acceptance in a comparative study of strike frequency in Sweden and Great Britain. Ingham argued that the centralization of the union movement can be explained by size and the timing of industrialization. Small, late industrializers like Sweden, Ingham claimed, are characterized by greater industrial concentration, less product differentiation and greater homogeneity of productive technology than large, early industrializers like Britain. As a result, Swedish firms and unions are relatively concentrated and homogeneous. The argument continues that concentration and homogeneity encourage centralization for both labor and capital.

Why concentration and homogeneity should encourage centralization is not clear. Similarity is not necessarily conducive to collective action as the work of Mancur Olson [1965] and Russell Hardin [1982] has made clear. Moreover, the effect of concentration on centralization appears to be negative, not positive. It is precisely the small unions and firms who most seek the protection of a strong confederation. Large actors have the strength to act alone. Among unions, as Ingham recognizes [1974: 49], the strongest and largest were generally the least enthusiastic about increasing

the power of the national confederation. In fact Walter Galenson [1952] suggested much earlier that the more concentrated the union movement, i.e. the greater the proportion of union members belonging to the largest unions, the less centralized the confederation. A recent study of collective bargaining in the United States by Wallace Hendricks and Lawrence Kahn [1982] directly challenges most of Ingham's hypotheses. The less concentrated the industry, the smaller the plant size and the greater the product differentiation, the more centralized the bargaining structure.

Recently Peter Katzenstein [1983, 1985] has offered an alternative explanation. Centralization, according to Katzenstein, was part of a social compromise designed to assure stability in small, trade dependent countries. Katzenstein portrays centralization was the creation of leaders on both sides of the labor market who perceived their nation to be extremely vulnerable to world markets and sought to promote consensual modes of conflict resolution.[7]

The approach taken in this paper is similar to Katzenstein's in many ways. A different account is given of the relationship between trade dependence and union centralization which leads, among other things, to a different specification of the critical independent variable. But the model and the empirical evidence which follow support Katzenstein's fundamental insight that trade dependence (of a particular type) increases the likelihood that unions will accept restrictions of their autonomy for the institutionalized cooperation of a centralized confederation.

A Model of Collective Bargaining

The question of centralization is considered here as a matter of coalition formation. The bonds of centralized authority strengthen the

coalition of all trade unions (and all employers) and inhibit the formation of alternative coalitions in which a subset of unions and firms would combine in opposition to both unions and firms outside the coalition.

In studying the coalitional structure of societies, there are two roads one can travel. One can ascribe the choice of allies to tradition or ideology, as party and union militants are wont to do [Pizzorno 1978]. Swedish union leaders, when asked to explain the centralization of the LO, are likely to respond with reference to a tradition of solidarity with deep roots in Swedish history and social democratic ideology. The alternative is to assume that unions and firms choose allies according to pragmatic, instrumental calculations of which coalition is likely to bring the greatest material benefits. This latter approach is the one followed here.[8]

The purpose of trade unions is to improve the working conditions and income of their members. Their central activity is to engage in collective bargaining. Thus, the starting point for an analysis of the costs and benefits of alternative coalitions must be the unions' position in collective bargaining. This does not imply that political strategies are secondary. The outcome of collective bargaining depends on political as well as economic conditions. Indeed, the argument to be developed is that the impact of public policies on the outcome of collective bargaining largely determines the unions' political strategies including which coalition to join.

The argument is best illustrated using a simple cooperative game model of collective bargaining along the lines developed by George de Menil [1971] and Ian McDonald and Robert Solow [1981]. I assume that unions serve their members, more specifically, that each union seeks to maximize the aggregate income of its membership, $\underline{u}$, given by:

$$u = wL + r(N - L) = (w - r)L + rN, \qquad (1)$$

where w is the union wage, L is the number of union members working under the union contract, r is the reservation wage and N is total union membership.[9] The reservation wage is the income that union members will receive if they are unable to find work at the union wage. This can include earnings from other jobs, unemployment compensation, or the monetary value of leisure. The term r, in other words, is the income forgone or the opportunity cost of working in a union job. It is assumed that r is always positive.

The aggregate income of union members is thus equal to the wage bill of the employers of union members, wL, plus the income receive by those additional union members who cannot find work through the union, $r(N - L)$. Alternatively, the income of union members is equal to the union wage differential enjoyed by employed union members, $(w - r)L$, plus the income available to all, rN. Note that the objective of the union described in equation (1) is equivalent to maximizing the expected income of union members if union members are homogeneous in the sense of each having an equal chance of being laid off when layoffs occur.[10]

Firms are also assumed to be perfect agents of their constituents. That is, firms, or their bargaining agents, are assumed to maximize profits. Before writing an expression for profits, however, it is useful to introduce a revenue function:

$$R = R(p,L,q_1,\ldots q_n) = \max_{x_i} pF(L,x_1,\ldots x_n) - \Sigma q_i x_i, \qquad (2)$$

where p is the price the firm receives for its output (which may or may not be dependent on the quantity the firm sells), L is the labor employed by the firm, $q_1 \ldots q_n$ are the prices of non-labor inputs in production and

$x_i \ldots x_n$ are the quantities used. The function $F(\cdot)$ is a standard production function with diminishing marginal returns to labor ($F_L > 0$ and $F_{LL} < 0$). The revenue function is the maximum difference between cash inflows and outlays for non-labor costs at any given level of employment. The firm's profit, π, is the difference between its revenues as defined in equation (2) and its wage bill, or

$$\pi = R - wL. \tag{3}$$

If it is not the individual firm but an employers' association which bargains with the union, then the profits in equation (3) are those earned by all firms who are bound by the labor contract.

The first axiom of cooperative bargaining theory is that the agreement will be Pareto optimal or efficient in the sense that neither the union nor its employers can gain without the other side losing.[11] Where enforceable agreements are feasible and both sides have full information, efficiency (from the point of view of the bargainers) is implied by the postulate of individual rationality. In the case of labor negotiations, both the union and employers can gain if the contract covers the level of employment as well as the wage rate [Leontief 1946]. This does not mean that the contract must specify the number of employees. It suffices that the contract specify the allocation of workers to tasks or that the labor agreement or the government establish procedures which firms must follow when they wish to reduce the size of their labor force [Hall and Lilien 1979].

In the case when the membership of the union exceeds or equals the demand for union labor, i.e. when $L \leq N$, the requirement that the contract be efficient leads to a simple rule for determining the level of employment:

$$(\partial R/\partial L) = r. \qquad (4)$$

The contract specifies the same level of employment as the firm would choose unilaterally in the absence of a union.[12] For an intuitive understanding of this result, consider the net benefits to the union and the firm in the event of an agreement. The gain of the union membership is the aggregate wage differential, $(w - r)L$. In economic terminology, $(w - r)L$ represents the rents received by the union due to its ability to disrupt production. Assuming that in the event of a strike profit is zero (production is completely halted and there are no fixed costs), the payoff to the firm for reaching an agreement with the union is simply $\pi = R - wL$. Since

$$(R - wL) + (w - r)L = R - rL,$$

the sum of the payoffs or the joint profit is equal to the difference between the firms' revenue and what labor costs would be if workers received the reservation wage. Thus efficient contracts are those which maximize the joint profit, or which satisfy the first order condition: $(\partial R/\partial L) = r$. Regardless of how the pot is to be divided, both sides want the pot as large as possible.

To determine how the joint profit is to be shared, additional axioms must be invoked. Ehud Kalai [1977] suggested that the following list: (1) It should not matter whether the bargainers negotiate in U.S. dollars or German marks. (2) Nor should the agreement change if a constant is added or subtracted from the payoffs to one or both parties. (3) Finally, neither party should be made worse off by an improvement of the feasible bargaining outcomes which leaves the disagreement point unchanged. These axioms are sufficient to characterize what Kalai called the proportional solution in which the union receives a fixed proportion α of the joint

payoff, or

$$(w - r)L = \alpha(R - rL)$$

which can be conveniently rewritten as

$$w = \alpha(R/L) + (1 - \alpha)r. \tag{5}$$

This wage equation, however, does not depend exclusively on Kalai's set of axioms. Most of the major bargaining solutions, including the Nash [1950] solution, the Kalai-Smorodinsky [1975] solution and the Maschler-Perles solution, yield the same result in this case.[13] Thus the union wage, in this model, is tied to both the productivity of labor and to wages elsewhere, but not to the marginal revenue product. If $\alpha = 1$ the firm is a cooperative in which workers receive the entire revenue net of non-labor costs while if $\alpha = 0$ workers are unorganized. Collective agreements will be characterized by some α between zero and one.

Using equations (1), (3) and (5) the income of received by the members of the union and the owners of the firm can be written as

$$u = \alpha(R - rL) + rN \quad \text{and}$$
$$\pi = (1 - \alpha)(R - rL). \tag{6}$$

Union members obtain the sum of their reservation wages $\underline{rN}$ and their share of the joint profit $\alpha(R - rL)$. The firm receives what remains of the joint profit.

Protectionist Policies

From the vantage point of bilateral bargaining between a union and a firm, the demand for the firms' output, the cost of its inputs and the reservation wage are exogenous parameters. In decentralized labor negotiations involving a union and a group of firms, prices other than the union wage are taken as given. But there are myriad public policies which

can and do alter the demand for the firms' product and labor's reservation wage. Since both unions and firms are clearly affected and since both, in democratic regimes, have the capacity to influence public policy, both have powerful incentives to do so.

Consider first policies which restrict foreign trade, whether through the imposition of tariff or non-tariff barriers. The purpose of trade restrictions is to increase demand for domestic producers. In this respect trade restrictions are but particular examples of a more general category of policies that, in terms of the bargaining model, raise $\underline{p}$ by increasing industry-specific demand or by reducing competition. Other examples are many, though not all, government regulations. The core argument of the Chicago school's theory of regulation is that the primary function of regulatory agencies is to restrict entry or fix prices for the benefit of the regulated industry [Stigler 1975, Peltzman 1976]. Industry-specific demand can be enhanced by tax policy. Some industries, such as the merchant marine in the United States or Swedish shipbuilders in the 1970's, receive direct subsidies. Others, such as defense, are favored by government procurement policies.

The impact of an increase of the price for the firms' output (or, in the case of an oligopoly, a shift outward of the firms' demand curve) can be read from the partial derivatives:

$$\frac{\partial u}{\partial p} = \alpha\left[\frac{\partial R}{\partial p} + \left(\frac{\partial R}{\partial L} - r\right)\frac{dL}{dp}\right] = \alpha F > 0 \quad \text{and}$$

$$\frac{\partial \pi}{\partial p} = (1-\alpha)\left[\frac{\partial R}{\partial p} + \left(\frac{\partial R}{\partial L} - r\right)\frac{dL}{dp}\right] = (1-\alpha)F > 0 \qquad (7)$$

since, by equation (4), $(\partial R/\partial L = r)$. The effect of an increase in $\underline{p}$ is to increase the joint profit by the amount $(\partial R/\partial p) = F$ which the union members and firms share according to their respective shares. Thus both employers

and employees in the protected industry benefit.[14]

An industry may seek policies which raise the demand for its output directly or it may seek policies which increase the demand for the downstream producers whom it supplies. The steel lobby in the United States has been one of the strongest backers of continued import quotas for Japanese automobiles [Washington Post National Weekly Edition, June 18, 1984: 22]. The producers of synthetic fibers have provided critical support within the European community for protection for textiles and clothing [Verreydt and Waelbroeck 1982].

It is obvious that trade barriers, regulation, and all other policies which raise $\underline{p}$ will impose costs elsewhere. Consumers, of course, face a higher price, but consumers of final goods have not generally proven to be an effective lobby. The per household expenditure on any item is usually small enough to make the costs of organizing in opposition prohibitive [Olson 1965, Stigler 1975]. A more important source of opposition are firms and unions in industries which consume the protected commodity in production. If a policy raises, not $\underline{p}$, the price of the industry's output, but q_i, the price of one of its inputs, then

$$\begin{aligned} \partial u/\partial q_i &= -\alpha x_i < 0 \text{ and} \\ \partial \pi/\partial q_i &= -(1-\alpha)x_i < 0. \end{aligned} \tag{8}$$

The industry loses $(\partial R/\partial q_i) = -x_i$ with the loss divided among the union members and the firms according to their shares of the joint profit. In the European Community, the greatest opposition to protection for the steel industry came from areas with the greatest dependence on industries which consume steel [Verreydt and Waelbroeck 1982]. One of the consistent findings of econometric studies of tariff rates in different industries is

that they are generally higher for producers of final goods who face no downstream opposition than for producers of intermediate goods who do [Michaely 1980].

A second politically important source of opposition to protectionist policies are industries which are dependent on exports and fear retaliation. A study by Stephen Magee [1980] of the lobbying activity of unions and business associations in the United States in hearings on the Trade Reform Act of 1973 found the industry's trade balance to be a good predictor of their position on trade policy. The unions and firms of industries which compete with imports were almost all in favor of greater protection. Industries in which the trade balance was positive but small were split, but more likely to be protectionist than not. Industries in which the trade balance was large and positive all supported free trade.

Welfare Policies

A second basic category of public policy which strongly affects the outcome of collective bargaining consists of welfare policies. The general expansion of government expenditures is one of the most salient features of public policy among advanced industrial societies in the postwar period [Cameron 1978]. By 1980 non-defense expenditures had grown to 63% of GNP in Sweden, 57% in the Netherlands and 56% in Denmark. Even in the United States, an austere spender by international standards, non-defense spending rose 50% faster than GNP between 1960 and 1980. [All figures are from Swank 1984]. The largest part of this increase in government spending went to fund an unprecedented expansion of welfare programs.

Welfare programs generally provide wide coverage. Although it is easy to think of exceptions--medical benefits for victims of particular

occupational diseases, for instance--the vast majority of welfare expenditures are disbursed through programs available to workers in all sectors: pensions and social security, health insurance or health care, family allowances and public housing [Wilensky 1975]. All are programs which increase workers' lifetime income independently of current employment. Less costly in terms of government outlays, although not necessarily less important, are policies which increase the reservation wage such as unemployment insurance.

Unlike protectionist policies, welfare policies must be financed. Governments, of course, can finance expenditures by borrowing or printing money, but an increase of the size that has occurred in welfare spending must be met largely by increased taxes. To include taxes in the analysis requires some assumption about the distribution of the tax burden. Here I shall assume a uniform tax rate on all taxable income, which is not far from the actual distribution of the tax burden as a whole in advanced industrial societies [Pechman 1973]. Not all income is taxed, however. Income received as transfer payments from the government is almost always tax free. Similarly, much of the reservation wage is made up of transfer payments, the value of leisure and jobs in the underground economy which escape taxation.

Let the transfer payments and the provision of services that all workers receive from the government independently of employment be called the social wage, denoted $\underline{s}$.[15] Assume, for simplicity, that the reservation wage is entirely untaxed, although it would not alter the analysis if part of the reservation wage was taxed as long as not all of it was. Then the post-tax income of union members and firms can be written as:

$$u = (1 - t)wL + (r + s)(N - L) \text{ and}$$
$$\pi = (1 - t)(R - wL), \tag{9}$$

where t is the uniform tax on taxable income. In the presence of taxes and a social wage, the bargaining solution yields

$$u = \alpha[(1 - t)R - rL] + (r + s)N \text{ and}$$
$$\pi = (1 - \alpha)[(1 - t)R - rL] \tag{10}$$

as the income of the union and its employers. There is also a budget constraint that, at the aggregate level, tax collections must equal welfare expenditures:

$$t\Sigma R(i) = s\Sigma N(i) \tag{11}$$

where revenue, membership and employment are summed over all sectors of the economy.

The effect of an increase in welfare expenditures on the union and firms in industry i is shown by the partial derivatives:

$$\partial u(i)/\partial s = N(i) - \alpha R(i)(dt/ds) \text{ and}$$
$$\partial \pi(i)/\partial s = -(1 - \alpha)R(i)(dt/ds) < 0. \tag{12}$$

Union members in industry i receive a direct benefit from an increase in the social wage equal to N(i). At the same time, since welfare expenditures must equal tax revenues, an increase in s implies an increase in the tax rate equal to (dt/ds) which reduces the joint profit by R(i)(dt/ds). Given that the firms pay taxes and do not receive the benefits of welfare spending, they are unambiguously worse off. Whether union members are better or worse off depends on their share of the joint profit α and the size of the tax increase required (dt/ds).

Starting from an initial position of no taxes, an increase in the social wage constitutes a simple transfer of income from profits to workers. When t = 0, dt/ds = $\Sigma N(i)/\Sigma R(i)$. (See appendix 1 for proof.)

Summing over all sectors:

$$\Sigma \frac{\partial u(i)}{\partial s}\Big|_{t=0} = (1-\alpha)\Sigma N(i), \text{ and}$$
$$\Sigma \frac{\partial \pi(i)}{\partial s}\Big|_{t=0} = -(1-\alpha)\Sigma N(i). \qquad (13)$$

But as the tax rate increases, employment falls, $dL(i)/dt < 0$, which reduces aggregate output. Thus, for $t > 0$, there is a deadweight loss as the reduction in income, $\Sigma R(i)(dt/ds)$, exceed workers' gains, $\Sigma N(i)$. The change in tax rate required to finance a marginal increase in the social wage, (dt/ds), increases as s increases and goes to infinity at some level of taxation $t^* < 1$. Therefore, the deadweight loss rises with welfare expenditures. More importantly from the unions' point of view, the gain in income received by their members declines and eventually becomes negative when taxes cross some threshold below t^*.

At $\alpha = 0$ workers' after-tax wages are determined by the untaxed reservation wage. Any increase in taxes must be matched by an equal increase in pre-tax wages or the firm could not keep its workforce. Such workers would favor an expansion of welfare expenditures up to the maximum sustainable level given by $t = t^*$. Workers who receive a share of the joint profit, that is for whom $\alpha > 0$, pay a share of the tax burden and would oppose increases in welfare expenditures that necessitate taxes higher than some threshold less than t^*. The location of the threshold depends on their per member share of the joint profit, $\alpha R(i)/N(i)$. Because unions share in the profit of their industry, their interests in welfare spending occupy a middle ground between firms, which always favor reductions in taxation and welfare expenditures, and unorganized workers

who always benefit from increases in welfare expenditures.

Trade Dependence and the Costs of Union Centralization

Unions and firms seeking political means to increase the income of their constituents have recourse to (at least) two broad categories of policies: protectionist policies understood broadly to include all policies which increase the demand (or reduce the competition) for a particular industry and welfare policies which raise the lifetime income received by union members outside of employment. Typically, one can predict the support or opposition to protectionist measures by knowing the sector of the economy to which a union or firm belongs. In contrast, the benefits of most welfare programs are available to all wage-earners.[16] Protectionist policies divide interests along industrial lines. Welfare policies at divide interests along class and income lines.

Centralized unions can act collectively. In bargaining with employers, centralization enables unions to take account of the impact of their wage demands on national economic performance [Schwerin 1980, 1982; Lange 1983, 1984; Przeworski and Wallerstein 1987]. In politics, centralization makes possible a "political exchange" whereby unions offer wage restraint for favorable public policies, in particular for promises of full employment and an expansion of welfare programs [Pizzorno 1978, Hibbs 1978, Korpi and Shalev 1980]. As noted earlier, the centralization of the union movement is one of the most important distinguishing characteristics of countries with exceptionally high growth rates of welfare expenditures in the postwar period. With decentralized bargaining, every union has an incentive and can find some justification for seeking to exempt itself from national agreements to exchange wage restraint for an increase in private

investment or public spending on welfare programs. National agreements are extremely fragile in the absence of centralized authority.

But there is a price which must be paid for the benefits of centralization. A decentralized confederal structure allows the affiliated unions to shift back and forth between alliances with their employers and alliances with other unions depending on the policy. In contrast, a centralized confederal structure binds unions in a class coalition and makes more difficult the pursuit of sectoral policies in which the interests of workers different industries do not coincide. National federations do, at times, support policies in which some unions gain and others lose, although the more common response is to remain neutral. Nevertheless, if divisive policies are prominent in the political agenda, the voluntary abdication of authority by independent unions to a national federation is unlikely. Class-based organizations are not reliable instruments for the pursuit of sectoral advantage.

The cost of centralization, therefore, depends on the attractiveness of alliances along industrial lines to obtain industry-specific policies. For this reason, unions which support free trade policies have less cause to guard their capacity for autonomous political action than unions which regard trade protection as vital. Adherence to the principles of free trade inhibits a range of sector-specific policies far wider than tariffs or non-tariff barriers [Olson 1982, Ch. 5]. Policies to increase the demand for an industry's output mean little if the increase in orders goes to foreign producers. Industries not protected from international competition can less afford policies which raise the price of non-traded inputs in production.

But why would labor's support for free trade differ from country to

country. One answer might be the strength of a socialist tradition. From their origins in the 19th century to the 1930's, socialist parties throughout Western Europe strongly favored free trade [Schumpeter 1942]. A different answer is provided by Magee's [1980] finding that the industrial alliance behind free trade is composed of industries highly dependent on exports while protection is supported by industries competing with imports in domestic markets. Industries which export a large share of output have less to gain from charging a higher price on the domestic market and more to lose if foreign markets are closed in retaliation. Moreover, export subsidies are more tightly controlled under GATT than import restrictions [Baldwin 1984]. Governments' ability to enhance industry-specific demand is restricted when demand is largely foreign. Unions who, because of the nature of the market for their output, are forced to regard $\underline{p}$ as exogenous are more likely to adopt centralized confederal structures than unions who have hopes of increasing demand for their output through political action.[17]

Empirical Tests

The hypothesis to be tested is that union centralization is more likely in countries where unions are more dependent on export markets. Before discussing the results, however, some description of the dependent variable is necessary.

The standard method for measuring union centralization, developed by Bruce Heady [1970] and followed by Windmuller [1975], Wilensky [1976], Visser [1983] and Cameron [1984] is to use the unweighted sum of scores on four dimensions: (1) the confederation's role in collective bargaining, (2) the confederation's control over strikes, (3) the financial resources

of the confederation relative to its affiliated unions, and (4) the personnel employed directly by the confederation per union member. Although intermediate levels of centralization are possible, empirically the choice seems nearly dichotomous. All studies report a group of seven countries in which the confederations score high on all dimensions of centralization: Austria, Belgium, Finland, Israel, Netherlands, Norway and Sweden. All confederations in almost all other countries have remained largely decentralized. Given the strongly bimodal distribution and the unreliability of small differences, centralization is treated here as a strictly dichotomous variable. The Danish LO alone seems to occupy a position nearly equidistant between the centralized and decentralized modes. If the dominance of the confederation in collective bargaining is singled out as the most important dimension of union centralization, the Danish LO belongs in the decentralized camp.

Although studies of centralization give separate scores for each confederation in countries with multiple federations, it is noteworthy that in every country all confederations have similar scores with the exception of confederations of purely white collar or professional unions. The centralization of the union movement varies by country, not by federation.[18]

A cross-national analysis of union centralization in the early postwar period is presented in Table 1. Consider the first three equations. Katzenstein's explanation of centralization rests on perceptions of vulnerability stemming from overall trade dependence. As can be seen in equation (1), total merchandise exports as a percentage of GDP, ExpDep in the table, is positively related to the likelihood of centralization. Yet, according to the argument of this paper, total trade dependence ought to

matter less than the dependence of union members and their employers on export markets. Since unions have little presence in agricultural production, non-agricultural exports as a percentage of GDP, or NAgDep in the table, is a superior proxy for the export dependence of unionized industry. Comparing equations (1) and (2), NAgDep does indeed do better in explaining union centralization than ExpDep. When both non-agricultural export dependence and total export dependence are put in the same equation (equation 3), total export dependence loses all statistical significance and even changes sign. Thus the emphasis on unions and their employers has empirical support.

Table 1 About Here

The robustness of the impact of non-agricultural export dependence in the presence of other possibly significant independent variables is shown in the remaining equations. Both Ingham [1974] and Katzenstein [1985] think that smallness encourages centralization, albeit for different reasons. Two measures of size, the log of population (lnPop) and the log of GDP (lnGDP), were tried (equations 4 and 5).[19] Both are negatively related to union centralization. The effect of including either measure of size, however, is to increase the estimated value of the coefficient for non-agricultural export dependence by roughly 25 per cent.

Schmitter [1981] suggested that social democratic governments played a prominent role in the development of centralized union confederations. As he wrote:

> Where . . . [corporatism] evolved gradually and voluntarily within a liberal democratic regime, it depended on concordant and supportive changes in a second realm of formal intermediation between civil

> society and the state--partisan mobilization. The most obvious supportive change in the party system was the emergence and eventual participation in power of reformist Social Democratic or Labour Parties [1981: 313].

The issue is confounded by simultaneity, however, since it is also widely believed, not least by party activists, that union centralization helps Left parties win elections [Korpi 1978, Stephens 1980, Shalev 1983, Hicks and Swank 1984b, Przeworski and Sprague 1986, Swenson 1987]. Treating Left party governance as an exogenous variable, therefore, biases the results against export dependence. This problem can be reduced by using data from early in the postwar period as centralized structures were not fully in place anywhere until after the war. For this reason, data from 1960 was used for variables. (Data for 1955 produced nearly identical results.) The Left variable, then, is an index of the cumulative participation of left parties in government from 1919 to 1960. The index used, developed by Wilensky [1976], gives each country up to three points per year depending on the share of seats held by the left party in the governing coalition, the party of the prime minister and whether the government controls a majority in parliament. Since the difference between none and a little might matter more than the difference between a lot and a little more, the log of one plus Wilensky's index was also used (lnLeft).[20]

Both measures of left participation in government indicate that social democratic participation in government increased the likelihood of centralization. The impact of non-agricultural export dependence remains undiminished however as shown in equations (6) and (7). Note that to the extent to which union centralization increased government participation by left parties prior to 1960, the estimated coefficient for NAgDep is too low. Adding both a measure of size and of left party participation

simultaneously only increases the coefficient for non-agricultural exports. The basic finding that non-agricultural export dependence increases the likelihood of union centralization holds whether one controls for size, partisan control or both. Nor do the results change significantly when any of the outliers which confirm the theory are excluded from the analysis.

Table 2 About Here

The likelihood of union centralization predicted by non-agricultural export dependence alone is shown in Table 2. With logit analysis, the effect of change in industrial export dependence on the probability that unions will adopt a centralized confederal structure is found by calculating $\partial P/\partial(\text{NAgDep}) = P(1 - P)b$ where $\underline{P}$ is the estimated probability of centralization and $\underline{b}$ is the coefficient for NAgDep. Thus, the marginal impact of non-agricultural export dependence is greatest in countries with estimated probabilities around .50 such as Germany or Austria where an increase of one percentage point in NAgDep increases the likelihood of centralization almost six percentage points. On the other hand, the same marginal increase in NAgDep changes the extremely low estimated probabilities in countries such as the United States, Australia, New Zealand and Iceland very little. If left party governance (lnLeft) is considered to be a factor promoting union centralization independently of export dependence, the fit of the model improves notably. The estimated likelihood of centralization rises in the Nordic countries to .97 in Sweden, .89 in Norway, .85 in Finland and .67 in Denmark and declines in both Switzerland and Germany to .27 and .13 respectively.

Evidence of a different nature linking non-agricultural exports,

liberal trade policies and centralization in the early postwar period is provided by case studies of the two Scandinavian countries in which the union movement has remained decentralized in spite of their small size and economic vulnerability, Iceland and Denmark. Both Iceland and Denmark depended on exports of agricultural products: fish in the case of Iceland, dairy products and meat in the case of Denmark. Neither country was highly dependent on industrial exports in the early postwar period (Table 2). And trade policy in both countries in the early postwar period deviated significantly from the free trade stance that Katzenstein [1983, 1985] attributes to small countries generally. Iceland, where virtually all industry is import-competing, had very restrictive trade policies from the 1930's through the 1960's with high levels of tariffs and extensive import controls [Pahre 1987]. Denmark as well imposed a package of foreign exchange controls and import restrictions in the 1930's which were not removed until the early 1960's [Pahre 1987]. During the critical years for union centralization in Scandinavia and elsewhere, Icelandic and Danish industry remained protected and Icelandic and Danish labor remained decentralized.

Table 3 About Here

There remains the possible objection that non-agricultural export dependence is itself caused in part by union centralization. I have argued that adherence to the principles of free trade reflects the export dependence of industry, but it is possible that export dependence of industry is the result of a prior commitment to free trade by centralized union federations. This possibility is tested in Table 3.[21] After

controlling for non-agricultural export dependence in 1928, a decade before unions were centralized anywhere, partisan control by the left has little effect on non-agricultural export dependence in 1960. There is no evidence that union centralization encourages the growth of non-agricultural exports by enhancing the electoral success of social democratic parties with free trade programs. In contrast, the direct influence of union centralization on industrial export dependence in 1960 appears to be significant. Yet this result is very sensitive to a single outlier. If the Netherlands is removed, the coefficient for union centralization declines in value by 60% and loses statistical significance. Whatever the importance of free trade policies for the extraordinary increase in Dutch industrial exports between 1928 and 1960--far larger than any other advanced industrial society--there is little reason to credit union centralization. The Dutch adopted free trade policies long before the centralization of the union movement in the 1940's [Liepman 1938]. In sum, the evidence of reverse causality from union centralization to the growth of non-agricultural exports is fragile.

Conclusion

The centralization of union and employer federations represents the institutionalization of a particular coalitional structure in which class alliances and class cleavages prevail. The likelihood of unions and firms accepting centralized confederal structures depends in part on the extent to which the political strategies adopted by unions and firms produce political alliances along class lines. I have argued that political strategies can best be understood by conceiving of unions, as well as firms, as organizations seeking to maximize the expected income of their constituents regardless of ideological or political affiliation. To

understand the political alliances which unions and firms will form, therefore, requires an analysis of the distribution of losses and gains that different policies entail. Two broad categories of public policy were considered: protectionist and other industry-specific policies which increase demand or reduce competition and welfare policies which provide income or services below cost to wage-earners outside of employment. While protectionist policies divide industries, welfare policies produce cleavages along income lines. The freedom to form alliances with employers that centralization curtails is less valuable to unions in export-dependent industries for whom protectionist and most other industry-specific demand enhancing policies are foreclosed. The more such unions predominated in the union movement in the early postwar period, the more likely the national federations of unions and employers were to centralize.

Marxists and neoclassical economists alike have considered union centralization as the Pareto superior but unstable cooperative solution of a prisoners' dilemma game among unions [Schwerin 1980, Olson 1982, Ch. 4]. The prisoners' dilemma model is fruitful in understanding the impact of centralization on aspects of union behavior such as wage militancy [Przeworski and Wallerstein 1987], but it is misleading when applied to trade policy. Unions would be in a prisoners' dilemma on trade and welfare policy if (1) each union would gain if it alone received protection and (2) all organized workers would be better off if all unions agreed to forsake industrial alliances in pursuit of protection and cooperate in a class alliance for welfare policies and other common political interests. However, the superiority for all unions of mutual cooperation (alliance with other unions) over mutual defection (alliance with employers in the industry) cannot be deduced from the assumptions of the formal analysis nor

is it supported by any empirical evidence. The unions which chose to institutionalize mutual cooperation were those for whom cooperation was individually as well as collectively preferable.

The evidence that has been presented is purely cross-sectional. There was no upsurge of export dependence prior to the period of centralization in the late 1930's and 1940's. Rather, specialization in non-agricultural exports produced an environment conducive to centralization while social democratic electoral successes and the upheavals of the Second World War provided the opportunity to centralize. Nor have centralized structures been adopted in additional union federations since the early postwar period, although dependence on non-agricultural exports has increased in most countries. Indeed, perhaps the most dramatic change in the past decade in this area has been the decline in the centralization of the Swedish LO, formerly among the most centralized in Western Europe, culminating in the temporary collapse of centralized bargaining in 1983/1984 [Lash 1985, Swenson 1987].

By itself, the stability and even decline of centralization during a period of growth of export dependence does not imply the hypothesis of this paper is false. There are multiple determinants of the likelihood of centralization, many of which may have changed over time in ways which make centralization less likely. In the case of Sweden, for example, Scott Lash [1985] emphasizes changes in the labor force which have reduced the relative weight of unions representing blue-collar workers in the private sector while Peter Swenson [1987] points to the increasing opposition of employers to centralized bargaining. There are, in addition, two implications of the model of this paper which provide alternative, not necessarily incompatible, explanations of increased pressures toward

decentralization.

The first is the rise of unemployment. Using the same bargaining model, I have shown elsewhere [Wallerstein 1987a] that the demand for protection by unions increases as unemployment among union members expands. When the foreign demand for Swedish products collapsed in the mid 1970's, government subsidies to industry and agriculture increased threefold while labor market policy shifted from encouraging labor mobility to preserving existing employment [Anton 1984: 3, Pontusson 1984a: 86]. Jonas Pontusson notes that while the policy emphasis on the labor market of Swedish governments in the 1950's and 1960's entailed a two-fold shift in power within the labor movement from the party to the unions and from the local and national unions to the national federation, the policies of industrial subsidies have meant the reverse:

> The terms of state aid to industry have been worked out through negotiations between policy makers and corporate management. . . To the extent the labor has at all participated in such negotiations, it has been represented by local unions, which typically assumed the role of lobbyists for their firms [1984b: 14].

Faced with permanent threats to their jobs, Swedish locals fought for measures that would save their factory. With the emergence of serious unemployment came the emergence of protectionist coalitions and an erosion of the dominance of the national confederation.

Moreover, as the benefits from industry-specific policies has increased, the gains from further expansion of the welfare programs have diminished. This follows from the analysis of the effects of increases in welfare spending. As welfare programs expand, the net benefits for union members of an additional increase decline and, at some point before welfare spending reaches its largest feasible level, become negative. Exactly at what point net benefits go to zero depends on the share of joint profits

received by union members and, importantly, the tax system, a topic to large to explore in this paper. [See Przeworski and Wallerstein 1988.] The results of three decades of rapid growth of welfare expenditures has ended the appeal to unions of new increases in public benefits. The report of the 1986 LO Congress stated that further increases in the social welfare spending were unnecessary [Asard 1987]. Instead, Swedish unions have increasingly turned to private profit-sharing agreements as the preferred means of enhancing the income of their members without raising hourly labor costs [Swenson 1987]. But as unions' share of their employers' profits increases, the range of common interests between unions and their employers expands while the scope of common ground with other unions declines.

Appendix 1

With taxes and transfer payments, an efficient contract will set employment in each industry such that:

$$(1 - t)R_L(i) = r. \tag{A.1}$$

(Note that the subscript L is used to denote partial differentiation with respect to L.) Differentiating both sides of (A.1) with respect to t, one obtains:

$$\frac{dL(i)}{dt} = \frac{R(i)_L}{(1 - t)R(i)_{LL}} < 0 \tag{A.2}$$

since $R_{LL} < 0$. From the budget constraint $t\Sigma R(i) = s\Sigma N(i)$, it follows that:

$$(dt/ds)\Sigma R(i) + t(dt/ds)\Sigma[R(i)_L(dL(i)/dt)] = \Sigma N(i) \tag{A.3}$$

Substituting equation (A.2) into (A.3) and rearranging terms, one gets:

$$\frac{dt}{ds} = \frac{(1 - t)\Sigma N}{(1 - t)\Sigma R + t\Sigma[(R_L)^2/R_{LL}]}. \tag{A.4}$$

At $t = 0$, equation (A.4) reduces to $dt/ds = \Sigma N/\Sigma R$. It is easily verified that $d^2t/ds^2 > 0$ at $t = 0$. As t approaches t^*, given by

$$t^* = \frac{\Sigma R}{\Sigma R - \Sigma[(R_L)^2/R_{LL}]}, \tag{A.5}$$

the denominator of dt/ds goes to zero and dt/ds goes to positive infinity. The product $t^*R(t^*)$ represents the maximum feasible tax collection.

Appendix 2: Data Sources

Union Centralization: Studies consulted on the centralization of union confederations included Heady [1970], Windmuller [1975], Wilensky [1976], Visser [1983] and Cameron [1984]. Information on the Icelandic labor federation in the early postwar period was obtained from U.S. Department of Labor [1956].

Population: Total population in millions in 1960. Source for Israel was Israel, Central Bureau of Statistics [1980]. Source for all other countries was OECD [1984].

GDP: GDP at market prices in billions of U.S. dollars in 1960. Belgium includes Luxembourg. Source for Luxembourg was Banks [1971]. Source for Israel was Israel, Central Bureau of Statistics [1980]. Source for all other countries was World Bank [1976].

Total Exports: Total merchandise exports as a percentage of GDP at market prices in 1960. Belgium includes Luxembourg. Source for all countries was United Nations [1962].

Non-agricultural Exports in 1960: Total merchandise exports minus exports of food and feed and other agricultural products as a percentage of GDP at market prices. (Forest products are included in non-agricultural exports.) Belgium includes Luxembourg. Source for all countries was United Nations [1962].

Non-agricultural Exports in 1928: Non-agricultural merchandise exports as a percentage of GNP in 1928. Agricultural goods were defined to include live animals, food, beverages, animal feed, fur, hides and skin, tallow, raw washed and waste wool, raw and waste cotton, unmanufactured flax and flax seed, unmanufactured hemp and jute, raw

and waste silk, gum, vegetable oils and fats, raw tobacco, flowers and bulbs, seeds and other vegetable products. Belgium includes Luxembourg. Source for export figures was League of Nations [1930]. Sources for GNP in 1928 included Mitchell [1978], Clark [1957], Butlin [1962], Urquhart [1965] and U. S. Bureau of the Census [1975]. When only net national product (NNP) or national income was available, estimates of GNP were calculated by assuming that depreciation equaled ten per cent of GNP, or GNP = NNP/(.9).

Left: Index of cumulative left party participation in government 1919-1960. Left parties are defined as all Labour, Socialist and Social Democratic Parties and all parties further left with the exception of Italy where only the PCI is counted as a left party after WWII. For definition of the index, see Wilensky [1981]. Sources consulted included Swaan [1973], Colliard [1978], Beyme [1970], McHale [1983], Graca [1985], Pridham [1986] and Mackie and Rose [1974].

[1] Schmitter [1982] attempted unsuccessfully to get the field to call this type of policy making "concertation" while reserving the term "corporatism" for the structure of interest representation.

[2] In general, statistical results are the same whether one uses some measure of corporatism or union centralization alone. Little explanatory power seems to be gained by adding measures of the presence or absence of multiple confederations, "associational monopoly" in Schmitter's [1981] terminology, or any of the other things that scholars sometimes include in their definition of corporatism.

[3] The recent apparently successful incomes policy adopted in Australia which lacks a centralized union movement demonstrates that this conclusion is too strong. But the empirical association of successful incomes policies with union centralization remains impressive.

[4] The relative stability of confederal structures since WWII is reflected in studies which provide measures of union centralization: all give each federation one score for the entire postwar period [Heady 1970, Windmuller 1975, Wilensky 1976, Schmitter 1981, Visser 1983, Cameron 1984].

[5] At its founding in 1899, the Norwegian LO was given limited power to intervene in strikes involving more than one of its affiliated unions. The willingness of the Norwegian unions to accept such a role for the federation reflected their extreme weakness at the time [Windmuller 1975].

[6] On the other hand, the general strikes conducted against the government in demand of extensions of the franchise in Belgium in 1892 and Sweden in 1902 were successful [Landauer 1959]. Solidarity appears to be a more potent weapon in politics than in the market.

[7] There is another approach which deserves mention. Clegg [1976], in a comparison of six countries, argued that the organization of the union movement largely reflected the organization of employers' associations. There is no doubt that the organization of employers has had a large impact on the unions. See Swenson [1987] for an interesting study of Sweden along these lines. It is also clear that the organization of unions has had a large impact on the organization of employers. With no theory for why employers organize differently in different countries, Clegg's study does not really provide a third explanation.

[8] This need not imply that ideology or solidaristic traditions don't matter, only that such traditions must have material foundations if they are to survive.

[9] This view of the unions' objectives is far from universal. Many, in accordance with Michel's "iron law of oligarchy", view union leaders as primarily interested in self-enrichment, self-preservation, or in building and defending the union as an organization [Ross 1948, Pizzorno 1978, Sabel 1981]. The critical question is not whether union leaders are selfless saints or selfish villains, but whether they must serve the interests of the rank and file if they are to achieve their personal and organizational goals. Union leaders who diverge too far from their members' interests face the threats of internal electoral opposition, wildcat strikes, defections to

other unions in some countries and defections to non-union status in most. (The closed shop is illegal everywhere in Europe outside of Great Britain and Ireland.) See Peter Lange [1984] for a study of union accountability in six European countries. The question of the objectives of union leaders is discussed at length in Wallerstein [1985, Ch. 3].

[10] The objective function in equation (1) is also equivalent to maximizing the expected lifetime earnings of union members who are laid off in strict accordance with seniority [Lazear 1983].

[11] Bargaining theory divides into two categories: cooperative and non-cooperative. In the cooperative game approach, solutions are characterized by sets of axioms that the outcome "ought" to respect. (See Kalai [1985] for a survey.) The weakness of cooperative bargaining theory is that different sets of plausible axioms yield different outcomes and none of the axioms other than Pareto optimality are rigorously derived from any behavioral theory. The advantages of cooperative bargaining theory are (1) it is relatively simple, (2) non-cooperative bargaining models converge to the frequently used Nash cooperative solution as the time period between offer and counter-offer shrinks to zero [Rubinstein 1987], and (3) empirical evidence seems to support the basic implication of cooperative theory that collective agreements are efficient, at least in the United States [Clark 1984].

[12] See Wallerstein [1987a] for a rigorous derivation of this result as well as a comparison with the case in which $L > N$. Note that this is an instance in which what is efficient for the union and its employers is also efficient for the economy as a whole. This happy coincidence depends on

the assumption that union maximizes the expected income of its members. The efficient contract for a union which maximized the expected utility of risk-adverse members would entail higher employment than is socially optimal [McDonald and Solow 1981].

[13] This is not true in general, nor is it true in the case in which $L > N$. See Wallerstein [1987a]. It is common to set $\alpha = 1/2$ by adding an axiom of symmetry: that the payoffs should not depend on which side is called the union and which is called the firm. But there is no reason here not to let α be any number between zero and one.

[14] This result may seem trivial but it is at odds with the conclusion of the Stopler-Samuelson [1941] theorem that trade protection always divides classes, raising the return to the scarce factor and lowering the return to the abundant factor. The difference lies in the assumption made by Stopler and Samuelson that all factors of production move from sector to sector until wage and profit rates are uniform throughout the economy. The present model implicitly assumes that there is some immobile asset--it could be specialized capital goods or industry-specific managerial and technical knowledge--which blocks the equalization of profit rates. Models of perfect factor mobility are usually interpreted as long term models since the movement of capital and labor takes time, while models which assume some factor stays fixed are considered to be models of the short term. Magee [1980] presents persuasive evidence that it is the short term which drives the political efforts of unions and firms.

[15] The impact of policies which increase the reservation wage is very similar. The general analytic results apply to both, although only policies which do not increase the reservation wage are explicitly considered.

[16] The universality of coverage is an important benefit. One reason union members prefer to have health care and pensions provided by the government is that coverage no longer depends on continual membership in the union or continual employment or on their employers' continual solvency.

[17] Katzenstein [1983, 1985] documents the association of corporatist institutions with liberal trade policies and extensive welfare policies. This argument can explain the finding of Cameron [1978], reproduced by Castles [1982], that trade dependence appears in cross-sectional analyses to be a major determinant of the relative expansion of welfare expenditures.

[18] There is virtually no correlation between the unity of the labor movement, or the absence of multiple confederations of blue collar workers, and centralization. There are multiple blue-collar confederations in two of the seven countries with centralized confederations (Belgium and the Netherlands) and in four of the twelve countries without centralized confederations (France, Italy, Japan and Switzerland). There is, however, a strong association between union centralization and the percentage of the labor force which belong to unions: centralized unions tend to be more encompassing unions. The mean union density (union members as a percentage

of wage and salary workers plus the unemployed) in the late 1970's in countries with centralized federations was 68% as compared with 43% in countries without centralized federations [Wallerstein 1987b].

[19] Logarithms were used rather than the raw figures for two reasons: (1) Relative differences in size ought to matter more than absolute differences. (2) Taking logs substantially improved the explanatory power of both population and GDP.

[20] Adding one to the index before taking the log maintained the score of zero for countries with no left participation in government.

[21] Although NAgDep can only vary between zero and 100%, examination of the residuals did not reveal noticeable deviations from the assumptions of OLS.

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Table 1
Logit Analysis of Union Centralization
(Asymptotic t statistics are in parentheses)

Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	−2.42	−3.72	−3.49	4.57	4.94	−5.52	−11.0	−1.55	1.99
	(2.51)	(2.93)	(1.15)	(1.21)	(1.84)	(2.67)	(2.70)	(0.24)	(0.35)
ExpDep	.095		−.031						
	(1.95)		(0.18)						
NAgDep		.236	.258	.299	.308	.245	.264	.365	.439
		(2.41)	(2.63)	(2.00)	(2.16)	(2.33)	(2.36)	(2.40)	(2.28)
lnPop				−1.02				−1.30	
				(1.65)				(1.36)	
lnGDP					−1.05				−1.93
					(2.30)				(1.68)
Left						.062			
						(1.87)			
lnLeft							2.22	2.38	2.73
							(2.37)	(2.17)	(2.15)
−2xLLR	2.30	8.44	8.50	12.33	12.59	12.74	14.98	17.09	18.16

Notes: N = 20. Countries are listed in Table 2. All data pertains to 1960. Data sources are described in Appendix 2. The bottom row is minus twice the log-likelihood ratio.

Variable names

NAgDep: Non-agricultural exports as a percentage of GDP
ExpDep: Total merchandise exports as a percentage of GDP
Left: Cumulative index of governmental participation of left parties 1919-1960
lnLeft: Logged index of left participation in government [lnLeft = ln(Left + 1)]
lnPop: Log of population in millions
lnGDP: Log of GDP at market prices in billions of U.S. dollars

Table 2
Estimated Probability of Union Centralization
Based on Non-agricultural Export Dependence

Country	Non-agricultural Exports as Percent of GDP in 1960 (NAgDep)	Unions Centralized	Estimated Probability of Centralization	Change in Probability as NAgDep Increases by One Per Cent
Belgium	29.6	yes	.96	.009
Netherlands	24.6	yes	.89	.024
Switzerland	20.7	no	.76	.043
Finland	18.9	yes	.67	.052
Sweden	17.8	yes	.62	.056
Austria	16.9	yes	.57	.058
Germany	15.3	no	.47	.059
Norway	14.8	yes	.44	.058
United Kingdom	13.1	no	.35	.053
Canada	11.0	no	.24	.043
Denmark	9.4	no	.18	.035
France	9.4	no	.18	.035
Italy	8.7	no	.16	.031
Japan	8.5	no	.15	.031
Ireland	7.7	no	.13	.026
Israel	5.5	yes	.08	.018
United States	3.0	no	.05	.011
Australia	2.9	no	.05	.010
New Zealand	1.1	no	.03	.007
Iceland	0.2	no	.03	.006

Notes: Estimated values are taken from equation (2) of Table 1 where NAgDep and a constant were the independent variables. Figures for Belgium include Luxembourg. See appendix 2 for data sources.

Table 3
OLS Analysis of Non-agricultural Trade Dependence in 1960 (NAgDep)
(t statistics are in parentheses)

Independent Variables	(1)	(2)	Netherlands Deleted (3)
Constant	4.14 (2.39)	4.70 (3.33)	4.13 (3.60)
NAgDep in 1928	.713 (6.86)	.580 (4.75)	.654 (6.49)
Left 1919-1960	.015 (0.39)		
Union Centralization		4.14 (1.77)	1.58 (0.78)
R^2	.764	.803	.862
N	18	18	17

Notes: Israel and Iceland were deleted for lack of data. See appendix 2 for data sources.