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This paper addresses long-standing debates over the role of demographic structure, class power, class-based political parties, and democratic political participation in the growth of the welfare state in advanced industrial democracies from 1950 to 1980. It distinguishes four theories—industrialism, monopoly capitalism, social democratic, and interest-group politics—and tests them using pooled, cross-sectional, time-series data for 18 nations and seven time points. Total social welfare spending, composed primarily of social insurance benefits, is dominated by the size of the aged population, smaller but important effects of nonclass political variables such as voting participation and electoral competition, and interaction of age with political and other variables. Public assistance, means-tested programs, however, are dominated by class variables. Although evaluation of the theories must consider the domain of programs to which each best applies, the results generally favor an interest-group-politics theory, which posits the dominant influence of demographic and political factors.

Theories of the welfare state in advanced industrial democracies differ on a number of dimensions, but two of the most important are (1) the independent influence attributed to democratic politics and political parties relative to economic and productive structures as sources of welfare-state growth and (2) the emphasis given to class cleavages relative to other demographic and status groups as the relevant organizational units of

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welfare-state mobilization. Industrialism theory (Wilensky 1975) sees economic structures rather than political institutions as the driving force behind welfare spending. It also views welfare spending as a response to the financial needs of a variety of age, family, and status groups harmed by industrial change. Neo-Marxist theories of monopoly capitalism and the welfare state (see, e.g., O'Connor 1973) similarly view political institutions as constrained by economic ones but take class structure and the accumulation needs of monopoly capital as the fundamental societal characteristics behind the growth of the welfare state. Social democratic or working-class-strength theories (Korpi 1983; Myles 1984; Shalev 1983; Stephens 1979) argue that the political parties in office and their class bases of support are crucial for the growth of the welfare state. Unlike in other theories, class-based politics receive primary attention, as reflected in Castles and McKinlay's (1979) claim of the "sheer futility of the sociological approach to politics."

We can also define a fourth theory, one less developed than the others, by completing the categorized cross-classification of the two dimensions listed above. It focuses on the combination of democratic political institutions and demographic structure. The theory argues that changes in the economy and population alter the structure, interests, and resources of groups competing for public benefits and that political, interest-group activity and voting in modern democracies drive up welfare spending. Unlike the functionalist views of the industrialism theory, it recognizes the importance of political conflict and mobilization of recipient groups. Unlike class theories, it recognizes the importance of a variety of ascriptive, demographic groups that transcend distinctions between labor and capital. This theory, which we denote, for lack of a better name, the interest-group-politics theory, claims a larger, more political role for the aged in the welfare state than the other theories (Pampel and Williamson 1985). Class theories tend to dismiss the aged as passive beneficiaries or victims (depending on the theory) of conflict between labor and capital, while industrialism theory focuses on entitlements automatically driven by growth in the sheer numbers of old people and the desire of governments to maintain industrial growth. Perhaps an interest-group theory that posits an active political role for the aged and other ascriptive groups in the process of welfare spending can add to our understanding of the growth of the welfare state.

These theories need not be treated as exclusive or all-encompassing views of the welfare state. By considering the individual programs that make up the welfare state and the groups they may benefit, the theories may prove complementary. For example, social insurance programs for public pensions and health care may favor the aged and middle-income groups and support the nonclass theories; means-tested public assistance
and unemployment spending may favor the poor and support class theories. In this article, we evaluate these theories empirically by examining the influence on general and program-specific welfare spending in advanced industrial democracies of (1) class-based political parties and democratic political participation relative to economic and productive structures and (2) class cleavages and power relative to other economic and demographic groups, such as the aged. By cross-classifying in a two-by-two table the categorized dimensions on which the theories of the welfare state differ, Table 1 presents a guide to the theories to be discussed and tested in the next sections.

THEORETICAL AND EMPIRICAL BACKGROUND

Industrialism Theories

Advocates of the industrialism theory argue that the technological imperatives of industrial development shape the economic, social, and political institutions of industrialized societies (Kerr et al. 1964; Form 1979). In response to the exogenous logic of technological development, the state performs certain regulatory functions: it provides the stable environment needed to implement complex production procedures and facilitate industrial growth (Goldthorpe 1969). As part of these functions, the state responds with social welfare spending to the needs of groups adversely affected by industrialization (Wilensky 1975). Industrial growth requires young, recently educated, efficient, and geographically mobile workers and creates an urban labor force subject to unemployment, forced retirement, and loss of family support. The state provides for the financial needs of such groups. A particularly important group is the aged, whose growth in absolute and relative numbers makes it crucial in the growth of welfare spending. Social welfare spending is thus an automatic or at least
highly likely and necessary consequence of long-term economic growth and its social and demographic concomitants. Further, since all political parties desire economic growth and the well-being of the population, it makes little difference which is in power—all respond to the imperatives of industrialization.

The predictions of the theory are straightforward. The higher the levels of technological development and the greater the size of the aged population are, the higher the level of welfare spending. These predictions are implicitly additive: the industrialism theory posits a more or less automatic process in which need of support translates directly into spending. Support for the predictions has come from a variety of quantitative studies in which economic development, percentage aged, and social insurance program experience are major determinants of welfare spending (Aaron 1967; Cutright 1967; Jackman 1975; Wilensky 1975). These studies, however, often base their analyses on samples of high- and low-income nations combined. What is needed in addition to support the theory is evidence that the predicted effects occur within a more homogeneous group of developed nations.

Monopoly Capitalism Theory

A neo-Marxist alternative to industrialism theory comes from O'Connor (1973). Rather than viewing welfare spending as beneficial to a variety of groups in need and to society in general, O'Connor argues it contributes to the dominance of monopoly capital. Governments socialize the costs of capital accumulation in the monopoly sector of the economy, which in the long run results in recurrent crises of overproduction, high unemployment in the competitive sector of the economy, and discontent among adversely affected groups (Offe 1984). Social expenses, or state spending for the surplus population, counter this discontent, maintain the social legitimacy of the system, and allow further monopoly capital accumulation (Piven and Cloward 1971). Social consumption, or state spending for social insurance, aims at maintaining harmonious labor relations, creating a sense of security among workers, and increasing production (O'Connor 1973). Hence, spending of either type is highest where the process of capital accumulation and centralization (i.e., monopolization) is most advanced.

The arguments of O'Connor and other neo-Marxists move beyond a simple view in which the state is an instrument of the ruling class. Instead, the state is both a cause and a consequence of the growth of monopoly capital (O'Connor 1973). Others extend the argument to treat the state as relatively autonomous—it must act independently in order to unify and transcend the short-term interests of capitalists (Poulantzas
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1973). Nonetheless, the state, according to the theory, cannot be emancipated completely from the constraints of the capitalist logic of accumulation and need for economic growth (Gold, Lo, and Wright 1975; Przeworski 1985, p. 201), and political parties of all philosophies must respond similarly to these constraints.

Despite divergent views of the role of class in the neo-Marxist, monopoly capitalism and the industrialism theories, there are also similarities (Stinchcombe 1968). Both see the welfare state as responding to functional imperatives—only, in one case the imperatives are technological, demographic, and bureaucratic, and in the other case they relate to the needs of monopoly capitalism (Myles 1984). The theories differ on the relative influence of capital concentration and economic-demographic variables, but both predict little influence of political parties in the long run.

Although illustrative evidence exists for the monopoly capitalism theory, there is little systematic empirical support, especially with cross-national data. Griffin, Devine, and Wallace (1983) show that measures of economic downturn, such as industrial utilization and unemployment in competitive-sector industries, affect transfer payments, but they rely on time-series data for the United States. Cross-national studies using a measure of monopolization (in part, estimated from gross domestic product) find it has no effect on social welfare or pension spending (Myles 1984; Stephens 1979). Hicks and Swank (1984) use a measure of the assets of the world's largest industrial corporations located in a given nation (divided by GNP) and find it has positive effects on cash transfer payments. While their measure is promising, its influence needs to be replicated before it provides firm support for the theory.

Social Democratic Theory

According to the social democratic, or working-class-strength, theory, the welfare state's primary beneficiary is the working class (Shalev 1983). When its numbers are large and organization centralized, the working class becomes politically powerful through democratic elections and implements welfare programs in its interest—even when it lacks economic power (Korpi 1983). Welfare spending thus depends on the size and power of reformist unions and their ability to implement programs through the election of social democratic parties. When employers and business organizations are powerful and rightist parties control the government, social welfare spending is low. This implies that through democratic politics, labor can potentially wrest control of the state from capital, use state policies to create economic and social change, and move along a democratic road to socialism (Stephens 1979). Hence, democratic
Welfare Spending

political parties are crucial to the growth of the welfare state, as illustrated by the high welfare spending of nations dominated by social democratic parties, such as Sweden, compared with nations without social democratic parties, such as the United States.

The social democratic theory explicitly applies to advanced industrial democracies. Political democracy and economic development are necessary but not sufficient conditions for the growth of the welfare state. Economic development creates a large working class; political democracy allows a large and organized working class to gain political power. Historical and organizational differences in the strength of the working class and popular support for social democratic parties in industrial democracies then explain why some nations spend more than others for social welfare. All industrial nations may face common functional demands, but differences in working-class strength and the political parties in power determine how the demands are met and what role welfare spending plays in the process.

The monopoly capitalism and social democratic theories both predict the dominant influence of class structure, but the social democratic theory goes on to argue for the additional importance of class-based political parties. Many studies show an association between welfare spending and leftist or rightist control of government, union membership and centralization, and strike activity (Castles and McKinlay 1979; Castles 1982; Cameron 1978; Hewitt 1977; Hibbs 1978; Hicks and Swank 1984; Korpi 1983; Myles 1984; Stephens 1979). However, these studies are based on cross-sections of a small number of developed nations. In addition to truncating variation in development, this design limits the ability to use multivariate methods that control for all relevant variables.

Interest-Group-Politics Theory

Just as the social democratic theory may be seen as a political version of Marxist theories, the interest-group-politics theory may be seen as a political version of industrialism theory. Janowitz (1976, p. 75) comes closest to an explicit statement of its arguments: "The growth of the welfare state since 1945 represents less and less the influence of conceptualized goals—including class goals—and more and more the influence of the power of pressure-group politics reflecting the ordered segments of society." Although it is difficult to develop a full statement of the theory in these pages, we can present the essential propositions and empirical predictions that differ from the other theories we have considered. They are that economic and demographic change affects the structure of group resources and demands for welfare spending and that the existence of democratic political institutions facilitates the realization of group interests.
First, nonclass, ascriptive groups are central to the growth of the welfare state. In advanced industrial democracies, a general diversification of interests occurs as the economy becomes more specialized and universalistic. This reduces the organizational potential of classes but provides a resource for collective action among groups defined by ascriptive characteristics (Nielsen 1985). The retired and aged are a prime example of such a group; they have changed from a relatively small group identifying with families and local communities (Davis and van den Oever 1981) to a larger, high-voting, politically active group with common age-based interests (Fox 1981). The expansion of political rights and incorporation of formerly excluded groups into the political systems of advanced democracies further contribute to the growth of groups competing for public resources (Grönbjerg 1977; Janowitz 1976). All this creates growing demands on the state from a variety of interest groups for higher welfare spending. It also implies the existence of a stratification system segmented by nonclass elements, such as age, race, language, occupation, and region, that transcend and fragment class boundaries (Parkin 1979).

Second, democratic political procedures are important for the translation of group demands into higher spending. Schumpeter ([1942] 1975, p. 269) defines democracy as institutional arrangements for arriving at decisions by means of a political struggle for people's votes. Others emphasize that political parties and government representatives seek to maximize electoral support (Downs 1957; Schlesinger 1984). Under such arrangements, latent interest groups may be mobilized by political leaders, or existing groups may pressure representatives for support of desired programs. Government spending is thus an inherently political process (Tufte 1978) in which the collective political action of groups in stable democracies furthers their interests (Olson 1982).

While the interest-group-politics theory is couched in general terms and may apply to a variety of groups, the aged deserve special attention. Besides being the prime beneficiaries of the largest welfare programs,

2 Unlike in traditional pluralism, no assumptions are made that the state regulates and controls interest-group activity, that all groups find representation in the political process, or that cooperation among groups contributes to equilibrium and the societal good. Instead, theorists focus on lack of social control, political divisiveness, and the economic inefficiency of interest-group activity. McFarland (1987) distinguishes traditional pluralism from what he terms the plural elitism of Olson (1982). The interest-group-politics theory lies closer to the theories of collective action, public choice (Muller 1979), and rent-seeking (Buchanan and Tullock 1980) than to those of functionalist pluralism.

3 For instance, from 1960 to 1978 in the United States, federal budget expenditures for the aged rose from 13% to 24% (Clark and Menefee 1981). As a percentage of GNP, such expenditures rose from 2.5% to 5.3%, an increase of 112%. Moreover, if the substantial tax subsidies that go primarily to the wealthy and middle-class aged are
two key changes—growing numbers and homogenization of interests—expand their political influence and illustrate how the interest-group processes work. The growth of the aged population raises their potential as a voting bloc. For instance, the percentage of aged voters rose to 22.2 in Sweden in 1982 (Statistics Sweden 1986) and to 32.5 in West Germany in 1984 (Statistisches Bundesamt 1986). Even if the aged have not voted as a single bloc, the threat of opposition by groups this large may sway the views and actions of legislators and candidates.\(^4\) The size of the aged population may also be used advantageously by more formal lobbying organizations for the aged. In the United States, aged organizations have been able to overcome the free-rider problems by offering selective incentives of insurance, travel, and pharmaceutical discounts with membership (Hudson 1978). The large membership can be mobilized against cuts in benefits or in favor of increased benefits or new programs. Through both voting turnout and effective lobbying, then, increasing numbers can translate into policy favorable to the aged.\(^5\)

The second characteristic—homogenization of interests—results from changes in the labor-force status of the aged. Retirement makes the aged dependent on the state, and low fertility rates make families less reliable

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\(^4\) The way the aged influence public policy may differ from the way classes or ethnic, religious, and linguistic groups do. Many assume implicitly that the necessary conditions for the political influence of an interest group include (1) group characteristics as the primary source of identification, (2) a generalized, ideologically coherent collective orientation toward a variety of issues, (3) identification of interests with a single party, and (4) active participation of formal group organizations in the implementation of legislation. None of these conditions may in fact be necessary for the political efficacy of the aged. A preexisting, dominating age consciousness may be unnecessary when group consciousness can be activated by financial interests in public policies. A single, generalized ideology among the aged may be unnecessary when mobilization occurs over specific issues. Identification with a single party may be unnecessary when the aged influence politicians in each of several parties and promote a nonpartisan consensus. Finally, the aged need not initiate, draft, or physically represent themselves in the implementation of legislation when external political pressure is present to shape the final outcome indirectly. Thus, the means the aged may use to influence policy may be quite different—yet still effective—from the means used by class, racial, religious, or ethnic groups.

\(^5\) Size initially hinders collective action (Olson 1965) but may over time prove to be a resource for groups like the aged in modern political democracies. In Nielsen's (1985) model of ethnic group mobilization, economic modernization reduces the inhibiting effects of size on group organizational potential through improved communication and transportation technology, and political modernization increases the facilitating effects of group size on potential control over events through the increased importance of electoral strength. Nielsen's arguments for ethnic groups may apply to other ascriptive groups like the aged.
sources of support. Despite diverse statuses, locations, and beliefs, nearly all aged benefit from increased public pension benefits. In fact, their diverse backgrounds, with heavy representation of the middle class, offer a resource for collective action that can effectively be used when a group is united by common interests in government policy (Nielsen 1985). A coherent, generalized ideology relevant to all issues or a dominant, encompassing age identification may be unnecessary when older persons are united with respect to their financial stake in specific government welfare policies.

Given these arguments, we can present predictions that distinguish the interest-group-politics theory from the others. It predicts the influence on welfare spending of the aged population (like the industrialism theory) but also predicts the influence of political variables. The greater the political activity of the population and its representation in the political process are, as shown, for instance, by the level of voting participation, the higher the welfare spending. The degree of competition among political parties may also be important because a large number of similarly strong parties increases the influence of interest groups when two encompassing parties merge diverse interests (Olson 1982, p. 51). The class support of ruling parties, in contrast, makes little difference. In addition, the size of the aged population should interact with political characteristics, according to the theory. A large aged population should have more influence on welfare spending where political participation and competition are high and special interest groups are most influential. This may also show in the effects of percentage aged that increase over time as the political resources of the aged grow and they are better able to translate growing numbers into high spending.

With the theories and their predictions presented, we can return to table 1 to review them. Each theory differs in its view of the relevant organizational unit for mobilization of interests (classes or strata) and the primary source of structural change (economic or political institutions). For any single dimension, the theories overlap, but when both dimensions are considered, each theory can be individually distinguished and tested. This classification and our discussion no doubt simplify some of the complexities of the relevant theories—a necessity in a single journal article. Yet the table illustrates the similarities and differences among the theories and helps bring some organization and clarity to a diverse and fragmented literature.

A weakness of these theories is that their focus on the demands made by external groups on the government neglects the influence of state organization on spending (Orloff and Skocpol 1984). State characteristics may independently influence the level of spending and must also be studied. Much of the work of the state-centered approach, particularly
that of Skocpol and colleagues (e.g., Skocpol 1985; Skocpol and Amenta 1986), advocates a qualitative historical approach that avoids the quantitative measures, statistical analyses, and abstract generalizations that are used in this study for a large number of nations. Nonetheless, other, quantitative studies likewise suggest the need to control for a variety of state characteristics, such as the degree of centralization (DeViney 1983), federalism, coalition cabinets (Castles 1982), corporate organization (Wilensky 1976), bureaucratic power (DeViney 1983), taxation policy (Cameron 1978), electoral cycle, and budget constraints (Griffin et al. 1983). These variables need to be examined along with those deriving from the four demand-based theories.

METHODS
The appropriate sample for this study consists of advanced industrial democracies. We select the 18 nations used in nearly all similar studies of the welfare state: the major Western European democracies, Canada, the United States, Japan, Australia, and New Zealand.\(^6\) In addition, since cross-sectional studies truncate the variation and degrees of freedom needed for multivariate analyses, and longitudinal data introduce a dynamic component to the study of welfare spending that is as important as the synchronic component, we pool cross-sectional data for every fifth year from 1950 to 1980. This provides a sample size of 126 (18 nations by seven time points), which is sufficiently large for multivariate analysis and contains adequate variation in the variables. Pooling the data requires that relationships be constant over time, an assumption we test and relax subsequently, but otherwise provides a more severe and complete test of the theories by requiring that variables explain both types of variation rather than one or the other.

Dependent Variable
We define social welfare spending as government expenditures for programs designed to guarantee or protect minimum standards of living against loss of income or earnings (Wilensky 1975). This definition includes benefit expenditures (cash and in kind) for pensions, sickness/maternity, employment injuries, unemployment, family allowances, public assistance, war victims, public health, and special social insurance

\(^6\) Sweden, Norway, Denmark, Finland, West Germany, United Kingdom, Ireland, Belgium, the Netherlands, France, Switzerland, Italy, and Austria.
programs for military and civilian employees (International Labour Office [ILO] 1985). As is customary in all other research, these expenditures are measured as a percentage of gross national product (GNP), and later some are also standardized by the size of the aged population.

It is also useful to disaggregate social welfare spending into more internally homogeneous programs (although the data do not allow breakdowns before 1960). A particularly important distinction is between social insurance and means-tested (i.e., public assistance) programs since the former are more likely to benefit the middle class, which contributes most to funding, while the latter are aimed at the poor. Further disaggregation of social insurance programs into pension, health care, family allowance, unemployment, and occupational injury would also be instructive. However, there are reasons why the study of general social welfare expenditures is also necessary. First, the general measure provides a useful summary in which each program is weighted by its proportion of the total. Separate analyses treat small programs the same as the much larger programs. A measure that reflects the relative contribution of each program to the total avoids exaggerating the importance of small programs. Second, analysis of separate programs may be misleading to the extent that nations use different program strategies to meet the same goals of social protection. Some nations, for instance, may provide less for pensions because they offer free medical care. Nation-specific programmatic emphases may distort models for individual programs but balance out in the total model. Therefore, we begin with the analysis of

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7 Because of data availability and ILO collection procedures, expenditures for housing are not included. However, this is not likely to bias the results greatly since nations spending much on housing also spend much on other programs. Educational expenditures are intentionally excluded. Such expenditures do not fit the income-security definition we use, are regressive rather than progressive, and contribute to productive capacity. Social welfare and educational expenditures are simply different responses to inequality and warrant separate study (Hewitt 1977; Wilensky 1975). Our definition also excludes private sources of income security. Where private sources, such as pensions or medical insurance, can replace public programs, they differ conceptually from public transfers. Private transfers are part of the economic process of wage bargaining between employees and employers, whereas our focus is on competition in the political arena for public resources. By measuring public spending, we consider conditions under which governments control the transfer process and social protection shifts from the province of market forces to nonmarket forces (Esping-Andersen 1985). Interestingly, Rein and Rainwater (1986) report figures for 10 nations in 1977 that suggest inclusion of private benefits would not change the cross-national pattern shown by public expenditures. They show that there is an inverse relationship between private and public expenditures but that private expenditures are a small part of the total package of social protection in most nations. As a result, the ranking of nations on public expenditures as a percentage of GNP is identical to the ranking for total (public plus private) expenditures as a percentage of GNP (see Rein and Rainwater 1986, p. 17, table 1.4).
the general measure of social welfare spending for the complete time span and move on to analysis of the separate programs from 1960 to 1980.\textsuperscript{8}

Independent Variables

The first industrialism variable, economic development, is measured by GNP per capita in thousands of 1975 U.S. dollars. The second, percentage aged, is measured by the number of persons age 65 and over divided by the total population (times 100).\textsuperscript{9}

The measures of monopoly capitalism should reflect structural pressures for concentration of capital—a difficult task with cross-national data. One measure from Hicks and Swank (1984) divides the assets of the world’s 250 largest industrial corporations with central headquarters in each of the nations by the nation’s GNP. Hicks and Swank interpret the positive effect of this measure on growth in welfare spending as the result of the strong political capacities of capital. A more direct measure of monopolization from Stephens (1979) is based primarily on business-establishment size but is estimated by gross domestic product for seven of the nations and is available only for 1970. Taking another approach, Griffin et al. (1983) argue that the effects of capital concentration occur indirectly through the creation of surplus capital and resulting labor-force dislocations. This suggests that the unemployment rate mediates the effect of monopolization and should be used as a direct determinant of spending. However, since the effect of the unemployment rate may also be seen as the response of leaders to societal needs or of leftist parties to the political demands of their constituents, it cannot offer unambiguous support for the monopoly capitalism theory.

\textsuperscript{8} The analysis of program-specific spending for 1980 requires adjustment of the reported ILO figures. Beginning in 1977, the ILO reclassified spending for public health. Some expenditures were deleted altogether from the published comparative tables and had to be obtained directly from the ILO and added to our 1980 figures. Other expenditures were shifted to the medical insurance category, which made it necessary to combine public health and medical insurance into a single category for all years. In all, this makes the trend data comparable, despite changes in the procedures of the ILO, without distorting the conceptual classification of the programs.

\textsuperscript{9} Other related age-structure measures, such as the percentage of the population under age 15, the fertility rate, labor-force nonparticipation, or the dependency ratio, are also related to welfare spending. Because all have effects equal to or smaller than those for percentage aged and can introduce problems of causal direction, they are not included in the models. Another possible industrialism variable, years of social insurance program experience (SIPE), overlaps conceptually with the dependent variable and, for these nations, most of which had long ago instituted the programs used in the measure, serves primarily as a time counter. For these reasons, we do not include it in the models but have shown in a previous version of the paper that our conclusions about percentage aged and class hold even with controls for SIPE.
The degree of industrial conflict, taken as an indicator of the economic protest that must be allayed to maintain social legitimacy, may also raise welfare spending, according to the monopoly capitalism theory. Yearly data were collected on the number of industrial disputes, the number of workers involved, and the workdays lost. To smooth the yearly fluctuations, we then averaged the figures over the five years up to and including the year of measurement. Finally, the figures were divided by the size of the labor force to control for the number of workers and workdays. In preliminary runs, the days-lost measure had the strongest effects, as might be expected since it summarizes the workers involved and the duration of the disputes. It is the only one of the three presented in our equations.

The social democratic theory emphasizes the strength of organized labor more than of capital (although both class theories share concern with features of class structure and conflict). To measure labor's economic power, we combine union membership with union centralization, as suggested by Hicks and Swank (1984). Union membership as a percentage of the labor force was collected from statistical yearbooks of individual nations. It matches almost exactly the figures gathered and presented by Korpi (1983) and Stephens (1979) for the years 1950, 1960, and 1970. Union centralization is measured as a recoding of Stephens's (1979) measure of union bargaining power. Hicks and Swank (1984) find that a dichotomous recoding of Stephens's original scale is correlated .95 with the more detailed measure and has a larger effect on social welfare expenditures. We also use this recoding, in which Sweden, Norway, Finland, Denmark, Austria, Belgium, and the Netherlands are coded one and other nations are coded zero. A number of studies suggest that centralization and density interact; that is, density has the most influence when union bargaining is centralized (Hicks and Swank 1984; Myles 1984). To capture this interaction, we follow Hicks and Swank by creating a variable, called union scope, equal to centralization plus one, times density.\footnotemark

The working-class-strength theory uniquely predicts the importance of class-based political party control. Ruling parties are identified as Left, Right, and other by Castles (1982).\footnotemark For each year since 1945, each party

\footnotetext{We find that the union-scope measure used alone adequately summarizes the information contained in all three measures used together. The $R^2$ adjusted for degrees of freedom, when we use union centralization, membership, and scope, is .824; with the scope measure alone, the adjusted $R^2$ is .825. Further, collinearity among the three measures is eliminated, and interpretability of the coefficient is increased, when union scope is used alone.}

\footnotetext{Stephens (1979) classifies leftist parties slightly differently from Castles (1982). Stephens includes communist parties, while Castles does not, a difference that affects only the scores of Finland. When we measured leftist control according to Stephens's classification, we found no significant difference in the results.}
type received a one if it was ruling, a zero if it was not (Stephens 1979). For those participating in coalitions, a party received a score between zero and one depending on the proportion of legislative seats it had relative to the number of seats of all parties participating in the government. Nearly equivalent to party cabinet representation, this measure performs better than electoral strength or legislative seats because it captures the ability of a party to implement its program (Stephens 1979). To adapt the measure to our longitudinal design, we calculate the cumulative years of party rule since 1946 for each party rather than party rule during the year of measurement.12

The interest-group-politics theory predicts, besides the effects of percentage aged, the importance of political variables unconnected to class ideology. Political participation is measured as the percentage of the adult population that voted in the previous national election (or the average of all elections in the previous five years if there was more than one). Political party electoral competition measures the equality in the share of votes received by participating parties against the perfectly competitive situation (where each party receives an equal share of the votes). The maximum value is one, and the minimum value is zero (where one party receives all votes).

There are also a number of measures of state organization that may influence public spending. State centralization is measured by the percentage of revenues that go to the central government (DeViney 1983). A dummy variable, in which one indicates a federal system, measures the converse of centralization, and another dummy variable, in which one indicates the existence of coalition governments, may also be important (see Castles 1982, p. 64) for a list of the countries with federal and coalition systems. Corporatism measures the appointment power of the central government along with the centralization of labor-union federations and reflects the ability of elites in central governments to implement policies (Wilensky 1976, p. 50). The percentage of social welfare expenditures that go to administrative costs measures the bureaucratic power of the social welfare agencies. The percentage of government revenues that

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12 Because the spending programs of leftist parties will continue after leftist parties are replaced in office and the slow spending of rightist parties cannot be overcome immediately by newly elected leftist parties, the cumulative measure of rule seemed most appropriate. The starting point of 1946 marks the beginning of postwar growth, but means five years of leftist rule is the maximum in 1950 and 35 years is the maximum in 1980. The cumulative nature of party rule corresponds to the trend in spending and the measures used by others (Hewitt 1977; Stephens 1979). Note also that the total years since 1946, minus cumulative leftist and rightist rule, equals the years of rule of centrist, ethnic, religious, and other parties. The coefficients of leftist and rightist rule may be interpreted relative to the spending of the omitted parties.
come from direct taxes rather than indirect taxes may limit the ability of governments to increase taxes and spending (Cameron 1978). Defense expenditures as a percentage of GNP may compete with and lower social welfare spending (Griffin et al. 1983). Finally, the years until the next election or whether or not a year is an election year may measure the political business cycle; the closer the year to an election, the higher the spending may be (Griffin et al. 1983). Because we do not have the space to give detailed attention to each of these measures—their strengths, their weaknesses, and their theoretical justifications—we attempt to use the same measures as in previous work.

Finally, we control for two economic variables that are difficult to tie to any single theory. Imports and exports as a percentage of GNP measures the vulnerability of nations to external trade forces and potential economic dislocations (Cameron 1978); the consumer price index (1975 = 100) reflects automatic escalation of benefits in response to inflation.

Estimation

The use of time-series data with the cross-sectional data means the sample units are no longer independent, and the model errors may be correlated over time. Because of different population sizes and measurement techniques, the nations also may not have constant error variances. With these problems—serial correlation and heteroscedasticity of the errors—ordinary least-squares (OLS) estimates are unbiased but inefficient without a lagged dependent variable, and biased and inefficient with a lagged dependent variable. We estimate instead generalized least-squares (GLS) models, beginning with a relatively simple error specification of a single first-order autoregressive process and error variances unique to each nation.13 The two-stage estimation uses OLS residuals to estimate the error parameters and then uses GLS to transform the data matrices and obtain adjusted estimates (Stimson [1985] presents mathematically the assumptions of the models and gives details of estimation). Later, we further examine results for a more complex error specification but find they are robust with respect to the estimation technique.

13 Examination of the residuals for the equations to follow suggests the autoregressive assumption is appropriate. The correlation between the residuals and residuals lagged over all 18 nations declines exponentially as the lag increases—just as it should in a first-order autoregressive process (Berk et al. 1979). In fact, the correlation between the observed autocorrelation function and the expected function, based on the first-order assumption, is .97. Other techniques of panel analysis that assume a constant autocorrelation function, such as fixed effects or random-components estimation (Hannan and Young 1977), are inappropriate for these models.
Welfare Spending

RESULTS: TOTAL SOCIAL WELFARE SPENDING

Before examining the multivariate results, we present descriptive statistics and correlation coefficients with social welfare spending (table 2). Beyond providing some familiarity with these data, the table illustrates that the time-series component of the data adds substantial variation to the variables. The means for 1950 and 1980 show major changes have occurred in nearly all variables. The threefold growth in spending certainly needs explanation along with cross-sectional differences. Since cross-sectional relationships cannot be assumed to hold for over-time data or vice versa, studies that neglect either type of variation are seriously incomplete.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Mean (1950)</th>
<th>Mean (1980)</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social welfare/GNP (%)</td>
<td>12.2</td>
<td>5.8</td>
<td>6.92</td>
<td>19.4</td>
<td>1.00</td>
</tr>
<tr>
<td>GNP ($1,000)</td>
<td>4.19</td>
<td>2.28</td>
<td>2.31</td>
<td>7.32</td>
<td>.567</td>
</tr>
<tr>
<td>Aged population (%)</td>
<td>10.6</td>
<td>2.32</td>
<td>9.04</td>
<td>12.4</td>
<td>.764</td>
</tr>
<tr>
<td>Vote/population (%)</td>
<td>75.9</td>
<td>14.2</td>
<td>74.1</td>
<td>79.8</td>
<td>.384</td>
</tr>
<tr>
<td>Electoral competition (%)</td>
<td>83.7</td>
<td>6.62</td>
<td>84.4</td>
<td>83.5</td>
<td>.106</td>
</tr>
<tr>
<td>Leftist rule</td>
<td>6.2</td>
<td>6.9</td>
<td>2.0</td>
<td>10.8</td>
<td>.562</td>
</tr>
<tr>
<td>Rightist rule</td>
<td>7.5</td>
<td>7.9</td>
<td>1.2</td>
<td>13.2</td>
<td>-.176</td>
</tr>
<tr>
<td>Union centralization (= 1)</td>
<td>.389</td>
<td>.489</td>
<td>.389</td>
<td>.389</td>
<td>.340</td>
</tr>
<tr>
<td>Union member (%)</td>
<td>36.0</td>
<td>14.6</td>
<td>30.7</td>
<td>43.1</td>
<td>.474</td>
</tr>
<tr>
<td>Strike days lost</td>
<td>53.7</td>
<td>36.7</td>
<td>43.9</td>
<td>66.6</td>
<td>.503</td>
</tr>
<tr>
<td>Unemployment (%)</td>
<td>2.68</td>
<td>2.40</td>
<td>2.53</td>
<td>5.16</td>
<td>.305</td>
</tr>
<tr>
<td>Monopoly asset/GNP*</td>
<td>.979</td>
<td>.223</td>
<td>NA</td>
<td>.938</td>
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<tr>
<td>Monopolization†</td>
<td>1.38</td>
<td>.29</td>
<td>NA</td>
<td>NA</td>
<td>-.113</td>
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<tr>
<td>Consumer price</td>
<td>70.0</td>
<td>43.6</td>
<td>31.7</td>
<td>158</td>
<td>.667</td>
</tr>
<tr>
<td>Import + export/GNP (%)</td>
<td>52.8</td>
<td>24.7</td>
<td>49.7</td>
<td>67.3</td>
<td>.410</td>
</tr>
<tr>
<td>Central government (%)‡</td>
<td>61.7</td>
<td>14.5</td>
<td>65.0</td>
<td>57.3</td>
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<tr>
<td>Federal (= 1)</td>
<td>.333</td>
<td>.473</td>
<td>.333</td>
<td>.333</td>
<td>-.096</td>
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<tr>
<td>Coalition (= 1)</td>
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<td>.502</td>
<td>.500</td>
<td>.500</td>
<td>-.219</td>
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<td>Corporatism</td>
<td>4.38</td>
<td>4.24</td>
<td>4.38</td>
<td>4.38</td>
<td>.416</td>
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<td>Administrative cost (%)§</td>
<td>3.38</td>
<td>1.13</td>
<td>NA</td>
<td>3.09</td>
<td>.053</td>
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<tr>
<td>Direct tax (%)‡</td>
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<td>9.44</td>
<td>48.9</td>
<td>60.0</td>
<td>.396</td>
</tr>
<tr>
<td>Years to election</td>
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<td>1.2</td>
<td>1.61</td>
<td>1.44</td>
<td>-.015</td>
</tr>
<tr>
<td>Election year (= 1)</td>
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<td>.315</td>
<td>.167</td>
<td>.278</td>
<td>-.065</td>
</tr>
<tr>
<td>Defense/GNP (%)</td>
<td>3.47</td>
<td>2.46</td>
<td>6.16</td>
<td>2.54</td>
<td>-.252</td>
</tr>
</tbody>
</table>

† Data for 1970; Japan missing.
‡ New Zealand missing.

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The bivariate correlations show that variables that increase steadily over time, such as GNP, percentage aged, leftist rule, union scope, and consumer prices, have high associations with social welfare spending. Yet variables with little or no time trend, such as percentage voting or corporatism, also show strong correlations. Among the independent variables, the correlations are smaller than those typically found in time-series designs since the pooled data adds variation across nations. All but a few of the correlations are below .5, and only one is above .65 (the correlation between leftist rule and union scope is .758).

Basic Model and Sensitivity Analyses

Based on these data, table 3 presents the GLS models for social welfare spending (col. 1). The results can be summarized simply: the strongest determinant is percentage aged; percentage voting, GNP, and inflation follow in importance; and unemployment and electoral competition have still smaller effects.\footnote{We find similarly strong effects of percentage aged and weak class effects for another dependent variable—cash transfers over GNP (Hicks and Swank 1984). This measure is unsatisfactory, since cash transfers do not include in-kind benefits, but reaffirms the results of the ILO measure.} The class variables have weak effects, often in the direction opposite to that of predictions. The lack of strong class effects also shows for the measure of monopoly assets (available only since 1960). When included in the equation, this measure reduces the degrees of freedom and the significance of all variables, but itself has effects near zero ($\beta = -0.053$). Similarly, a simple model for 1970 with controls only for percentage aged shows the other measure of monopolization has a standardized coefficient of only $-0.07$. Overall, age structure appears stronger than class, and the nonclass political variables stronger than class-based party variables; politics appear important, but all parties respond similarly with social welfare spending to demographic conditions.

These results raise the question of why the class and class party variables have such weak and, at times, negative effects. To help answer this question, we consider (and reject) several hypotheses about the statistical properties of the model that may account for our findings.

1. The assumptions made about the error term are inappropriate, and the GLS estimates bias the influence of the class variables downward. The OLS estimates show that the size of nearly all coefficients is larger without the GLS adjustments, but the basic pattern of coefficients remains the same. Leftist rule has negative effects, and union scope has small, positive effects. Another form of the GLS model (Kmenta 1971, p. 512) allows autocorrelation coefficients to vary across nations and
### TABLE 3


<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>1</th>
<th>2*</th>
<th>3b</th>
<th>4c</th>
<th>5d</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNP</td>
<td>.543**</td>
<td>.124</td>
<td>.688**</td>
<td>.255</td>
<td>.171</td>
</tr>
<tr>
<td>Aged population</td>
<td>.213</td>
<td>.049</td>
<td>.270</td>
<td>.100</td>
<td>.050</td>
</tr>
<tr>
<td>1.29**</td>
<td>1.19**</td>
<td>1.76**</td>
<td>1.16**</td>
<td>.344*</td>
<td>.131</td>
</tr>
<tr>
<td>Vote/population</td>
<td>.481</td>
<td>.478</td>
<td>.703</td>
<td>.464</td>
<td>.131</td>
</tr>
<tr>
<td>.097**</td>
<td>.049*</td>
<td>.118*</td>
<td>.141**</td>
<td>.051*</td>
<td>.126</td>
</tr>
<tr>
<td>Electoral competition</td>
<td>.238</td>
<td>.120</td>
<td>.288</td>
<td>.344</td>
<td>.126</td>
</tr>
<tr>
<td>.079*</td>
<td>.153**</td>
<td>.052</td>
<td>.096*</td>
<td>.097**</td>
<td>.113</td>
</tr>
<tr>
<td>Leftist rule</td>
<td>.091</td>
<td>.176</td>
<td>.059</td>
<td>.110</td>
<td>.113</td>
</tr>
<tr>
<td>-.068</td>
<td>.146</td>
<td>.110</td>
<td>-.181**</td>
<td>.029</td>
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<tr>
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<td>.173</td>
<td>.130</td>
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<td>.037</td>
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<tr>
<td>Rightist rule</td>
<td>-.047</td>
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<td>.049</td>
<td>-.218**</td>
<td>-.048</td>
</tr>
<tr>
<td>-.062</td>
<td>.036</td>
<td>.066</td>
<td>-.297</td>
<td>-.067</td>
<td></td>
</tr>
<tr>
<td>Union scope</td>
<td>.014</td>
<td>-.006</td>
<td>.034*</td>
<td>.000</td>
<td>-.001</td>
</tr>
<tr>
<td>-.089</td>
<td>-.038</td>
<td>.215</td>
<td>.001</td>
<td>-.006</td>
<td></td>
</tr>
<tr>
<td>Strike days</td>
<td>-.228</td>
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<td>-.488</td>
<td>-.397**</td>
<td>-.072</td>
</tr>
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<td>-.092</td>
<td>-.052</td>
<td>-.020</td>
<td>-.160</td>
<td>-.003</td>
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</tr>
<tr>
<td>Unemployment</td>
<td>.276*</td>
<td>.294**</td>
<td>.542**</td>
<td>.110</td>
<td>-.002</td>
</tr>
<tr>
<td>.115</td>
<td>.122</td>
<td>.225</td>
<td>.046</td>
<td>-.001</td>
<td></td>
</tr>
<tr>
<td>Consumer price</td>
<td>.033**</td>
<td>.035**</td>
<td>.038**</td>
<td>.041**</td>
<td>.030</td>
</tr>
<tr>
<td>.249</td>
<td>.264</td>
<td>.285</td>
<td>.308</td>
<td>.123</td>
<td></td>
</tr>
<tr>
<td>Import + export/GNP</td>
<td>.008</td>
<td>.002</td>
<td>.036*</td>
<td>-.014</td>
<td>-.003</td>
</tr>
<tr>
<td>.034</td>
<td>.009</td>
<td>.154</td>
<td>-.060</td>
<td>-.012</td>
<td></td>
</tr>
<tr>
<td>Social welfare_t–5</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>.793**</td>
</tr>
</tbody>
</table>

Intercept ............... -19.8 -21.1 ... -21.8 -13.1
$R^2$ (OLS) .............. .841 .841 ... .864 .906
df ........................ 114 114 ... 114 95

*a* Allows cross-sectional correlation of errors and nation-specific autocorrelation coefficients.

*b* Coefficients for each variable added one at a time to equation with GNP and Aged population coefficients for GNP and Aged population control for no other variables.

*c* Ordinary least-squares estimates with variables measured as deviations from year-specific means of each variable.

*d* Independent variables are lagged to previous time point; 1950 deleted.

*P < .05.

**P < .01.

Adjusts for contemporaneously correlated errors (a type of seemingly unrelated regressions [Judge et al. 1980]). The estimates (col. 2) are nearly identical to those in column 1. Although the class party coefficients both shift directions (leftist rule now being in the predicted direction, and rightist rule being in the direction opposite to that of predictions), they remain small and unstable.
2. Simultaneously controlling for all class variables, which may be components of a single factor, eliminates their common variance and their influence on welfare spending. To check for the possible influence of multicollinearity, we present coefficients for variables with controls for only two industrialism variables—GNP and percentage aged (col. 3 presents the coefficients for each variable added singly to the two-variable equation). The effects of union scope increase, as do those for percentage voting and unemployment, but, all in all, the class effects remain small.

3. The measure of cumulative control of leftist and rightist parties over several decades attenuates the instantaneous effects of party control and fails to capture the influence of legislative representation. Measures of control over just the past five years, however, show correlations and net coefficients that differ little from the cumulative measures. Measures of leftist and rightist votes show even weaker effects than party rule variables. Measures of leftist or rightist control multiplied by union scope and strike days to capture interaction also do not offer evidence of the importance of class.

4. The strong time trend in percentage aged and social welfare spending dominates the model at the expense of the cross-sectional relationships between class and spending. We can estimate a model in which all variables are measured as deviations from the year-specific means, which effectively removes the time-series component of all variables. The within-year results using these deviation scores are shown in table 3 (col. 4). Strike days lost shows stronger negative effects, which suggests that welfare spending is high not where disruption occurs but where unions are strong enough to make them less necessary. Rightist rule shows significant negative effects here; it has a modest cross-sectional relationship with spending, but does not covary well with the trend over time. There are no theoretical grounds for favoring this model, which excludes important variation in welfare spending, over the pooled models, but it offers some evidence for the importance of class-based parties.

5. Outliers and influential cases (e.g., American exceptionalism, Japanese culture) hide the effects of class. To check for the disproportional and misleading influence of a single nation, we systematically estimated 18 models, each with one nation deleted (Mosteller and Tukey 1977). This exercise shows the estimates are robust—none of the standardized coefficients changes by more than .10. The effects of percentage aged remain strong and positive, the effects of leftist rule negative, and the effects of union scope near zero in all equations.

15 Traditional outlier and influential case statistics are less meaningful and less easily calculated with the GLS transformations. Further, elimination of a single case (i.e., a nation-year) is not possible with GLS estimation and requires that all time points for a nation be eliminated in testing for influential cases.
Welfare Spending

6. Class variables have no effect on the level of social welfare spending, but may better explain short-term change. Table 3 (col. 5) presents an equation in which social welfare spending is predicted by a lagged dependent variable and lagged independent variables. By controlling for spending in the previous time period, we can show the effects of the independent variables on change in spending five years later (this requires deletion of the 1950 data since none of the variables have lagged values back to 1945). The inclusion of the lagged dependent variable, however, biases downward the effects of the other variables when there is serial correlation of the errors, and it becomes difficult to estimate the error parameters accurately from OLS residuals. This problem may be partly responsible for the weak effects of many variables; only percentage aged and the nonclass political variables remain significant. Although these results must be viewed with caution, they provide no evidence of the importance of class or the unimportance of age structure. Indeed, since the lagged dependent variable summarizes the influence of other exogenous variables in previous time periods (this is the essence of the Koyck distributed lag model [Pindyck and Rubinfeld 1976, p. 214]), the importance of percentage aged and nonclass political variables shows in both the lagged dependent variable and their own net effects.

7. The effects of pension, health, and disability legislation implemented by leftist parties may not show until decades later, when workers covered under the legislation reach old age. Since this implies a lag of indeterminate length, we examined the effects of leftist rule on spending 5, 10, 15, 20, 25, and 30 years later (as the lag gets longer, additional waves of data must be deleted). With controls only for percentage aged and GNP (both unlagged), the lagged leftist rule variable does not have large or significant effects. In fact, the correlations of spending and leftist rule, without any controls, show the concurrent relationship to be as large as the lagged relationships.

State Structure Effects

Do any of the variables measuring aspects of state structure change our conclusions about the effects of the demand variables? While recognizing that we do not have a full set of propositions to test, we do have a number

16 Change over a five-year time span may fluctuate less, exhibit more stability, and be more difficult to explain than yearly change. Upward and downward fluctuations in the growth rate may balance out over the five years we study. Some of the effects of political variables that explain yearly changes may be hidden in these models. Yet our focus here is on the long-term growth in social welfare spending in the postwar period, not with the yearly fluctuations. Hence, the use of the five-year change models is appropriate for studying long-term growth.
of relevant variables. When added one at a time to the basic model, none of the state variables changes the previous conclusions. Table 4 shows the effects of each variable along with the effects of selected demographic, political, and class variables. Most state variables have little effect on spending, and none changes the effects of the other variables. Government centralization has a negative, rather than a positive, effect. Federalism, coalition cabinets, administrative costs, direct tax revenues, and electoral timing have virtually no effect on spending. Corporatism has only a small effect in part because it does not vary over time and can only explain cross-sectional variation. Defense spending has a small negative effect but does not change the effects of any of the other variables. Given that defense spending is as much a consequence as a determinant of welfare spending (and we are not in this paper able to separate out the simultaneous effects), we continue to estimate models without defense spending.

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Interaction Models

The effects of percentage aged and other variables in these models are additive—the influence of each variable is the same at all levels of the others. This assumption may need to be relaxed, particularly for the influence of percentage aged, which may be facilitated by political and social conditions. The existence or nonexistence of such interactions has obvious theoretical implications. The industrialism theory predicts additive effects of percentage aged as spending increases proportionally with the size of the population in need. The interest-group-politics theory predicts that the effects of percentage aged are greatest where and when the political ability of constituents to influence policy is greatest. Even the social democratic theory might predict that leftist governments and union power facilitate the effects of percentage aged, whereas rightist governments inhibit the effects of percentage aged.

Table 5 shows the results of testing for the interactive effects of political and class variables with percentage aged and total social welfare spending. Multiplicative interaction terms of percentage aged times political and class variables were added one at a time to our basic model. Without presenting the detailed results, the table shows the unstandardized coefficients for percentage aged, the other interacting variable, and the multiplicative interaction term. Several of the interaction terms are significant: the effect of percentage aged is largest where and when a high percentage of the adult population participates in democratic processes and electoral competition among parties is strong. Class-based parties do

<table>
<thead>
<tr>
<th>TABLE 5</th>
<th>GLS Unstandardized Coefficients for Interaction of Political and Class Variables with Percentage Aged Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote/pollution</td>
<td>.152</td>
</tr>
<tr>
<td>Electoral competition</td>
<td>.273</td>
</tr>
<tr>
<td>Leftist rule</td>
<td>.294</td>
</tr>
<tr>
<td>Rightist rule</td>
<td>.167</td>
</tr>
<tr>
<td>Union scope</td>
<td>.109*</td>
</tr>
<tr>
<td>Time</td>
<td>.066</td>
</tr>
</tbody>
</table>

Note.— X<sub>i</sub> = interacting variable.

<sup>a</sup> Calculated from cols. 2 and 3 when the interacting variable takes a value 1 SD below its mean.

<sup>b</sup> Same, but interacting variable 1 SD above its mean.

<sup>c</sup> 1950.

<sup>d</sup> 1980.

<sup>*</sup> P < .05.

<sup>**</sup> P < .01.
not change the positive effect of percentage aged as neither appears able to claim the voting support of the aged. Finally, union scope facilitates the effects of percentage aged (or percentage aged facilitates the effects of union scope); union power may require a large aged population to raise welfare spending.

The interaction coefficients are difficult to interpret, so we make some simple calculations to illustrate how the effects of percentage aged change under varying societal conditions. We use the interaction terms to calculate the net effect of percentage aged when the other interacting variable is one standard deviation below its mean and one standard deviation above its mean. This shows, for instance, that the effect of percentage aged is only 0.805 when 61.7% of the population votes and 1.49 when 90.1% of the population votes. The last two columns in table 5 thus show how societal conditions influence the way percentage aged translates into higher spending. The same sort of interaction exists between a linear time variable and percentage aged. Calculations show the effect of percentage aged is 0.689 in 1950 and 1.40 in 1980—an increase of 0.711, or 103%. Something more than the growth in mere numbers of aged persons is involved since the influence of the same number of aged persons expands over time or across various societal conditions.17

It is difficult to separate the unique effect of each interaction. A combined model is uninformative, as all interactions are highly correlated. The exact source of the interaction, however, is less important than the point that a consistent pattern of interaction exists. The effects of percentage aged rise as conditions conducive to their influence grow. Political participation may make the aged a more potent voting bloc; electoral competition may drive up political stakes for support of the aged, and union power may combine with the power of the aged to raise benefits.

PROGRAM-SPECIFIC SPENDING

Our focus shifts in table 6 to program-specific spending for a shorter time span. Because of the fewer degrees of freedom, we include in the

17 The increase in the effects of percentage aged over time is one instance in which the assumption of constant effects over time does not hold. We also tested for other instances. It is not possible to estimate models for single years because the number of variables approaches the number of cases. We did, however, estimate models for three time groupings: 1950–60, 1965–70, and 1975–80. The models for the first two time periods are statistically identical, but the last time period shows some changes from the previous ones. The coefficients for several variables are stronger during the late 1970s, but in the direction and range shown in previous models. Perhaps most interesting is that the negative effects of rightist rule increase; this suggests that, during a period of spending retrenchment, nations with a history of rightist rule have slowed welfare growth the most. Otherwise, our conclusions apply across the time span.
<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Social welfare</th>
<th>Public assistance</th>
<th>Social insurance</th>
<th>Old age pension</th>
<th>Health care</th>
<th>Family allowance</th>
<th>Unemployment</th>
<th>Occupational injury</th>
<th>Old age pension</th>
<th>Health care</th>
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<tbody>
<tr>
<td>GNP</td>
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<td>.062</td>
<td>.419**</td>
<td>.240*</td>
<td>.176**</td>
<td>-.002</td>
<td>.045</td>
<td>.002</td>
<td>1.61*</td>
<td>1.32*</td>
</tr>
<tr>
<td>Aged population</td>
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<td>.079</td>
<td>.977**</td>
<td>.520**</td>
<td>.254*</td>
<td>.144**</td>
<td>.032</td>
<td>.020</td>
<td>1.62*</td>
<td>-.846</td>
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<tr>
<td>Vote/population</td>
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<td>.159</td>
<td>.479</td>
<td>.511</td>
<td>.289</td>
<td>.421</td>
<td>.115</td>
<td>.216</td>
<td>.223</td>
<td>-.129</td>
</tr>
<tr>
<td>Electoral competition</td>
<td>.319</td>
<td>-.159</td>
<td>.326</td>
<td>.233</td>
<td>.187</td>
<td>.534</td>
<td>.066</td>
<td>-.264</td>
<td>.281</td>
<td>.260</td>
</tr>
<tr>
<td>Rightist rule</td>
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<td>-.016</td>
<td>-.078</td>
<td>-.004</td>
<td>-.028</td>
<td>-.028*</td>
<td>-.001</td>
<td>-.004</td>
<td>-.068</td>
<td>-.280</td>
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<td>-.014</td>
<td>-.114</td>
<td>-.292</td>
<td>.000</td>
<td>.154</td>
<td>-.014</td>
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<td>.005</td>
<td>.000</td>
<td>.007</td>
<td>-.008**</td>
<td>.003</td>
<td>.000</td>
<td>-.011</td>
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<tr>
<td>Consumer price</td>
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<td>.342</td>
<td>-.042</td>
<td>.003</td>
<td>.136</td>
<td>-.399</td>
<td>.184</td>
<td>.000</td>
<td>-.026</td>
<td>.069</td>
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<td>.094</td>
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<td>-.037</td>
<td>.028</td>
<td>.032</td>
<td>.245**</td>
<td>.019</td>
<td>-.255</td>
<td>.082</td>
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<td>R² OLS</td>
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<td>.199</td>
<td>.124</td>
<td>-.038</td>
<td>.034</td>
<td>.098</td>
<td>.926</td>
<td>.216</td>
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<td>Mean</td>
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<td>1.2</td>
<td>10.7</td>
<td>4.5</td>
<td>4.1</td>
<td>1.1</td>
<td>.5</td>
<td>.3</td>
<td>39.2</td>
<td>36.4</td>
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<tr>
<td>SD</td>
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* Dependent variable standardized by size of aged population.

* *P < .05.

** *P < .01.
program-specific models only the most important independent variables from the previous equations. We also delete leftist rule because it overlaps with union scope. The first equation replicates the model of social welfare spending for the shorter time span and trimmed set of determinants. The coefficients change little from the models in table 3. The next two equations show separate models for public assistance (means tested) and social insurance (primarily contribution based) program expenditures. Social insurance programs make up, on the average, 76% of all welfare expenditures and dominate the previous models, while public assistance makes up 9% of all expenditures.\textsuperscript{18} Thus, the model for social insurance continues to show strong effects of the industrialism and political variables and consumer prices. For public assistance spending, however, the effects of percentage aged become small and those of union scope and unemployment increase. If union scope is replaced by leftist rule, class effects still dominate. As the one program most directly targeted at the poor, public assistance spending responds primarily to class structure and cyclical economic conditions.

Further disaggregation of social insurance spending into pension, health care, family allowance, unemployment, and occupational injury spending follows in table 6. The effects of percentage aged are always positive, but are strongest for pensions, health care, and family allowance. While the aged benefit most directly from pensions and health care, an aged population may also lead some nations to use family allowances as an inducement to raising fertility. Class variables have little influence on the other social insurance programs, but unemployment, not surprisingly, dominates unemployment-benefit spending. Inflation drives up spending for pensions and health care but is typically low when unemployment and unemployment spending are high.

Overall, the size of the aged population dominates the largest social insurance programs. As a further test of the influence of the aged, we can purge the spending programs most closely targeted at the aged of demographic influence. We reestimated the models for pensions and health care in table 6 with measures of program-specific spending per aged person as a ratio to GNP per capita. A positive effect of percentage aged on spending per aged person relative to the standard of living would yield evidence of the political, as opposed to the demographic, influence of the aged. This produces a conservative test of their influence since the inabil-

\textsuperscript{18} Not analyzed separately in table 6 are spending for public employee social insurance programs, war victims, and miscellaneous programs (about 14% of all expenditures). Such spending amalgamates programs for a variety of purposes and fails to define conceptually meaningful categories.
Welfare Spending

ity to control for non-aged recipients biases downward the effects of percentage aged. Nonetheless, it provides some additional insights into the processes operating. The last two columns of table 6 show the equations for the age-standardized measures of pension and health-care spending. The effects of all variables except percentage aged change little: voting, GNP, and inflation drive up spending beyond that owing to more aged persons. For pensions, the effects of percentage aged is positive, thus replicating Pampel and Williamson (1985); for health care, percentage aged has little effect, or perhaps even a negative one. Not surprisingly, percentage aged has no effect on age-standardized spending for programs not directed at the aged, such as public assistance, family allowance, or unemployment, and we do not report those results. However, because pensions make up a large part of welfare spending, percentage aged has small but insignificant effects on age-standardized social insurance and total welfare spending. All this suggests that the political effect of the aged population operates only for pensions, while the demographic effect operates more broadly for health-care spending as well.

CONCLUSIONS

We are now in a position to readdress the theoretical debates over the influence on social welfare spending of democratic politics relative to economic structures, and of class cleavages relative to demographic groups. To some extent, the forces driving spending in advanced industrial democracies are specific to the program and its targeted beneficiary population. If we momentarily ignore some of the variation across programs, an overview of the results shows the crucial role of democratic politics and demographic structure relative to class structure and parties. The size of the aged population is the strongest determinant of welfare spending and is followed in importance by nonclass political variables—percentage voting and party competition. The unemployment rate, national economic product, and consumer prices also contribute to growing expenditures in these nations. Most class and state variables, in contrast, have weak or inconsistent effects. Finally, there is some evidence of the interaction of percentage aged with political variables and of the influence of percentage aged when the dependent variables are standardized by percentage aged.

The conclusions apply best to the social insurance expenditures, primarily pensions and health care, that dominate welfare spending. Evidence of the influence of the aged, political and otherwise, is strongest for these programs but spills over to affect total social welfare spending. An
exception to these generalizations is means-tested public assistance expenditures, which are determined primarily by union strength. Unemployment expenditures also differ from the other programs in the dominant role of the unemployment rate. However, since public assistance constitutes less than 10%, and unemployment benefits less than 4%, of all social welfare spending, they and their determinants contribute minimally to the growth of the welfare state over the past several decades.19

With these results, we can evaluate the theories and the support that exists for their predictions one by one. First, the predictions of the industrialism theory concerning the importance of demographic structure receive partial support. National product provides the resources for transfers, and demographic aging combined with increased retirement creates a population in need of transfers. The results here to a large degree replicate Wilensky’s (1975) findings rather than those of his critics. However, the industrialism theory may underestimate the importance of democratic politics in translating economic and demographic structure into public policy. The welfare state is more political and less functional than recognized by the theory, and continued efforts are needed to identify the mechanisms of political influence of the aged or other groups.

The monopoly capitalism theory proves the most difficult one to test. Measures of monopoly assets, monopolization, and industrial disputes, although less than ideal indicators, fail altogether to affect welfare spending as predicted. Perhaps most consistent with the theory is the positive effect of unemployment on social expense spending. Unemployment can increase spending in many ways, and the statistical relationship we find cannot unambiguously be attached to the monopoly capitalism theory. Yet the effects of unemployment on public assistance as well as on unemployment spending suggest some types of welfare spending may be a general response to structural conditions of the capitalist economy. The theory fits social consumption or insurance spending less well, but further efforts to deduce and measure indicators of the monopoly capitalism theory (as Griffin et al. [1983] do for the United States) are needed to evaluate and advance this theory beyond the limited support it receives here.

The social democratic theory also receives partial support. While union strength affects public assistance spending, it has little net effect on the larger social insurance programs. Political party government control fails to show consistent, stable influences on any program, but rightist rule

19 See Page (1983, p. 211) for a similar conclusion concerning welfare spending in the United States and a discussion of the effectiveness of such spending for reducing inequality.
may have modest cross-sectional effects, particularly in the late 1970s. While we must limit our conclusions to a specific historical period of remarkable growth, support for the welfare state appears to come from a variety of sources and political directions and reflects less a democratic class struggle than more general group activities in the democratic process. This means not that labor and capital fail to influence spending altogether but that these groups do not directly dominate the processes. Even though we have used the same measures of class as the advocates of the social democratic theory have, class may have influences that are not measured here. In particular, the influence of social democratic parties may show in the egalitarian distribution of benefits and low poverty rather than in the spending levels (Hedstrom and Ringen 1987). Continued research is necessary, but in the meantime, the claims made in favor of class theories must be limited to specific programs that make up a small part of the welfare state.

The interest-group-politics theory receives support from the effects of percentage aged, nonclass political variables, and the interaction between the two. At least for several of the largest social insurance spending programs, the theory is correct in its emphasis on the importance of democratic politics and on the role of demographic change in the structure of interest-group size and resources. Although the evidence is indirect, the effects of percentage aged appear to involve more than demographic accounting or entitlements, at least for pensions, and are consistent with a view of the aged as an active political force in the welfare state. The role of the aged, then, is at once more important and more complex than recognized by almost all previous work on the welfare state.

Finally, we find little evidence for the direct, additive influence of state characteristics in explaining variation in welfare spending. Since our tests consist of only preliminary investigation of diverse and isolated hypotheses, we are not able to evaluate state-based theories fully, many of which address the historical emergence of welfare programs in specific countries. Moreover, since state and legal structures contribute to the shape political participation and party competition take, the state proves of indirect importance in our results. Further efforts to examine how the state mediates public demands can no doubt go well beyond what we have been able to do and might profitably focus on the facilitative role of state structures.

In summary, there is some evidence to favor nearly all the theories. Union strength favors programs for the poor; the aged favor social insurance programs that benefit the middle class. Pension spending responds to the political influence of the aged; health-care spending, to demo-
graphic ones. Democratic politics are important in translating interests into policy even if class-based parties do not differ in the expected directions. Class theories receive support once the domain of their propositions is delimited, but they do not deal well with the major sources of the growth of welfare spending—pensions and health care—or the growing importance of the aged population in political democracies. Future theory and research may need to deal further with the growth of middle-class programs and their demographically defined constituents.
### APPENDIX

**TABLE A1**

**Sources of Data**

<table>
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<tr>
<th>Variable</th>
<th>Source</th>
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<tr>
<td>Union centralization</td>
<td>Hicks and Swan (1984).</td>
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<tr>
<td>Unemployment</td>
<td>OECD Main Economic Indicators and Historical Statistics. 1984 and various years. Paris: Organization for Economic Cooperation and Development.</td>
</tr>
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<td>Union member</td>
<td>Stephens (1979), Korpi (1983), and national yearbooks.</td>
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<td>Monetary asset</td>
<td><em>Fortune Magazine</em>. The Fortune 500 and International Fortune 500. Various years.</td>
</tr>
<tr>
<td>Corporatism</td>
<td>Wilensky (1976).</td>
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REFERENCES


American Journal of Sociology