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AGE STRUCTURE, POLITICS, AND CROSS-NATIONAL PATTERNS OF PUBLIC PENSION EXPENDITURES*

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This study examines the determinants of spending on public pensions. Unlike other programs, pensions benefit an easily identifiable, high voting group—the aged—and may be especially amenable to their political influence. With that in mind, we draw out predictions of industrialism and class theories for the explanation of public pension expenditures. The explanations are tested with data on 48 nations, at all levels of political and economic development, for four time points (1960, 1965, 1970, 1975). Pooling the data allows multivariate analysis of appropriate determinants both within and across different groups of nations, and detailed analysis of advanced industrial democracies. Industrialism variables such as percent aged, social insurance program experience, and family size have dominant effects. However, the effects of percent aged increase with political democracy, suggesting that the aged wield political power in increasing pension expenditures. Class variables, in contrast, have little or no effect on pensions, suggesting the importance of age politics over class politics in the spending for this program.

Recent efforts in the United States to mobilize elderly persons against any budget plan limiting Social Security cost-of-living increases, and the difficulties experienced by legislators in opposing such efforts, indicate the special nature of public pension expenditures. Unlike nearly all other social welfare programs, pensions benefit a large and easily identifiable population with ascribed characteristics and a high rate of voting. Also unlike other programs, the nonaged and aged view receipt of pension benefits as legitimately deserved after decades of work and financial contributions (Coughlin, 1979; Tomasson, 1984). These characteristics make the aged a potentially strong interest group that can influence public policy in ways that welfare mothers, the unemployed, children, and the poor cannot (Preston, 1984; Williamson et al., 1985). It may be that where other social welfare programs are influenced by the power of the working class in the democratic class struggle (Korpi, 1983), pensions may be more strongly influenced by age politics and the political power of the aged population.

Despite the special nature of public pension expenditures and the influence of the aged population, most cross-national studies of the growth of the welfare state focus on a broad and diverse mix of programs under the label of social welfare. Some studies group together expenditures for family allowance, veterans' benefits, public health, medical care, disability, and old age pension programs (e.g., Wilensky, 1975; Williamson and Fleming, 1977). Other studies rely on even broader measures such as total government spending (Cameron, 1978), years experience with multiple social insurance programs (Cutright, 1965; Jackman, 1975), cash transfers (Hicks and Swank, 1984), or nonmilitary government expenditures (Stephens, 1979). Yet these diverse programs reflect several underlying dimensions, change at different rates, and may respond differently to the same determinants (Coughlin and Armour, 1983). As a result, several scholars argue for the comparative study of individual programs separate from other spending programs (Castles, 1983; Shalev, 1983).

In this paper, we take a first step in this direction by examining the structural determinants of expenditures for one crucial component of the welfare state—old age pensions—for a cross-section of nations from 1960 to 1975. Pensions deserve separate study—in addition to the reasons mentioned in the first paragraph—because for most nations they have grown faster than other programs, are the most expensive of government transfer...
programs, face funding problems in the decades to come, and are crucial to the quality of life of the aged (Fisher, 1978; Pampel, 1981). In addition, the study of pensions allows further evaluation of more general industrialism and class theories as they apply to the circumstances of the retired population.

THEORETICAL BACKGROUND

**Industrialism Theory**

Early explanations of the welfare state focused on the growth of industrial technology and its demographic and institutional concomitants. A number of versions of the theory exist, but they are related by the view that political factors are subordinate to economic and technological imperatives in determining social welfare. The basic argument holds that the welfare state is a response to problems created by the growth of an industrial economy (Kerr et al., 1960; Form, 1979). Industrial change involves dislocation and differentiation of the population and removal of traditional sources of work and family support. The state, seen as a mechanism for solving problems, provides financial support for the groups in need (Wilensky, 1975). At the same time, increased economic affluence provides greater resources to meet increasing demand for public services. These arguments are supported by studies showing that social welfare as a percent of the national product increases with economic development (Cutright, 1965, 1967; Jackman, 1975; Pryor, 1968).

Particularly important in such processes, however, is the role of the age structure of the population. Support for the effects of the size of the aged population is strong, not only among advocates of the theory (Wilensky, 1975), but also among its critics (Castles, 1983, Table 7). Wilensky argues that the aged need economic support more than other age groups since the family in modern societies no longer provides such support. Others focus more specifically on the increase in retirement in industrial economies that leads to this need (Pampel and Weiss, 1983; Graebner, 1980). The demand of industrial work organizations for younger, recently trained, more physically capable and efficient, and less expensive workers results in removal of older workers from the labor force through mandatory retirement policies and unemployment. Private pension benefits, if they exist, are seldom adequate and the state responds to the increased financial need of this population by providing public pensions. Again, the state is not treated as an autonomous force in the growth of pensions, but responds automatically to substructural changes in the age structure and labor force.

Another more recent study consistent with the industrialism perspective argues for the importance of fertility and family size as a determinant of pension expenditures (Entwisle and Winegard, 1984). The authors reason that as fertility and family size decline, parents recognize that there will be fewer children to support them during old age. Children, as they grow into adults, likewise recognize that they have fewer siblings with whom to share the burden of supporting their parents during old age. Pressure for government old age pensions thus comes from nonaged family members and is related to the number of children relative to the number of parents they may have to support. Like other industrialism arguments, population age structure and the financial needs of the population determine pensions, but the size of the youngest cohorts is emphasized along with the size of the oldest cohorts. In fact, effects of both fertility (lagged) and percent aged are found in Entwisle and Winegard’s analysis of developing nations, suggesting the need to include both variables when testing the industrialism arguments.

**Critique**

Support for these arguments comes primarily from quantitative analyses of aggregate data for a large number of developing and developed nations. Castles and McKinlay (1979) argue, however, that because there is a bimodal distribution of nations on development, with a huge gap between advanced industrial nations and others, analysis of both clusters together merely shows that rich nations can afford to spend more on social welfare than nations with barely enough food to feed the population—a trivial conclusion. What is needed to support the industrialism theory is the demonstration of a relationship between development or percent aged and social welfare spending within as well as across these clusters, something that is lacking in the literature.

Another criticism of the industrialism theory is that it is unclear how percent aged translates into higher social welfare expenditures. A number of possible interpretations of the effect can be offered. First, it may be due to entitlement provisions in pension programs that automatically rise with more recipients. Second, the effect may be due to the political pressure of large aged and retired populations; pension expenditures, in particular, may be susceptible to mobilization of increasing numbers of aged persons (Fox, 1981). Third, the pressure for higher pensions may come from nonaged groups in the population. Efforts on behalf of the aged have often come from professional
and bureaucratic advocates for the aged rather than the aged themselves (Estes, 1979; Williamson et al., 1982). Efforts also may come from all nonaged adults who see that benefits accruing to the current aged will also benefit them if they survive to old age (Preston, 1984). Finally, the effect of percent aged may be explained through the intervening effects of leftist and working class parties that directly or indirectly act in the interests of the aged by supporting social welfare expansion. All but the first interpretation emphasize political action in one form or another. Industrialism theories, by assuming the government responds automatically to the needs of the population, neglect the political nature of government spending in general and the politics of the aged in particular. The meaning of the effect of percent aged, then, and its relationship to political processes, need to be examined in more detail.

Social Democracy and Working Class Strength Theory

An alternative to the industrialism explanation, at least for advanced industrial democracies, focuses on the influence of working class strength in reducing distributional inequalities. According to this theory, social welfare programs benefit the working and lower classes. As Shalev (1983:319) states, "The welfare state is a class issue... its principle proponents and defenders are movements of the working class." As a result, it is in countries where reformist labor unions are strong and social democratic or socialist parties dominate the government that social welfare programs are extensive. Conversely, where rightist parties dominate the government and where corporatist employer organizations are powerful, expenditures for social welfare will be modest (Hicks and Swank, 1984; Castles, 1983). Social programs, therefore, do not emerge automatically from industrial development; instead, they emerge only when working class groups that benefit most from programs have attained the power resources necessary to implement them (Stephens, 1979; Korp, 1983; Hewitt, 1977).

There are three ways in which public old age pensions may benefit the working class and the above arguments can be applied to public pensions. One, assuming most workers receive little intrinsic satisfaction from their work suggests they would desire leisure if sufficient income were available to afford it (Barfield and Morgan, 1969; Bowen and Finegan, 1969). Retirement is thus a desired status, and a goal for which unions focus their collective bargaining efforts. This is consistent with the strong causal effect of pension benefits on the retirement decision found in studies of American men (Clark and Spengler, 1980). Two, employer old age pension contributions are a type of deferred wage. Other public pension contributions may come from general revenues and reflect transfer of income through taxes. In either case, public pensions—like private pensions—are a means for the working class to raise wages (Myles, 1984). Three, public pensions provide stability and security in benefits that are not available from private pension programs. Where private pensions may suffer from vesting or funding problems, government programs are guaranteed (Schulz, 1985). For these reasons, the growth of public pensions can be accounted for by the same factors explaining the growth of more general social welfare programs—namely, the strength of the working class and social democratic parties.

In this scheme, the state is more than the automatic reflection of economic and demographic structures; it is the arena of class conflict and can autonomously influence economic relations in the process of the democratic class struggle (Korpi, 1983). As such, the theory applies to advanced industrial democracies where a large working class emerges and democratic elections allow workers to translate their large numbers into political power.

Empirical support for the class theory comes from a large number of studies, all of which focus on approximately the 18 most developed democracies (Castles and McKinlay, 1979; Castles, 1983; DeViney, 1984; Esping-Anderson, 1981; Hicks and Swank, 1984; Korpi, 1983; Myles, 1984; Stephens, 1979; Williamson and Weiss, 1979). Although they vary little in the support they find for the class arguments, the studies do vary in the measures of class used. Most focus on the political control of the government, but some show positive effects of leftist rule (Stephens, 1979; Myles, 1984), some the combined effect of left-center rule (Stephens, 1984), and some the negative effects of rightist rule (Hicks and Swank, 1984; Castles, 1983). Most of these studies also focus on some measure of union strength, such as membership as a percent of the labor force, degree of centralized bargaining power, or the combination of both.1

1 Although they share a common background and concern with class conflict, social democratic and other neo-Marxist theories differ in important respects. According to the neo-Marxist theories, the state must act to mitigate the social consequences of monopoly capitalism through expansion of social welfare programs (Olson, 1982). These efforts attempt to reconcile the contradiction between needs for private capital accumulation and social legitimacy (O'Connor, 1973). The ultimate result, then, is
Critique

The working class theory clearly delineates the nations to which it applies. However, the weakness of the study of 18 nations at one time point is that it truncates variation in development and age structure; industrialism variables are discredited through analysis of a sample in which such factors are nearly constant. Even if sufficient variation did exist, reliable multivariate analysis is difficult with only 18 cases. Support for working class variables is often obtained without adequate controls for industrialism variables. To test the class theory, researchers should use multivariate techniques to examine the effects of all relevant variables for a sufficiently large sample with variation in both industrialism and class variables. As we show, such a design is possible when both cross-sectional and time-series data are used.

Another criticism points out that class theories emphasize political action of labor and capital to the exclusion of other groups active in the politics of the welfare state. The aged, for example, may have interests that do not coincide with those of either the working or capitalist classes, yet those interests may be a major source of political pressure for higher welfare spending. Pensions in particular may be less sensitive to class influence than other expenditures since the connection between working class interests and pensions—often seen as a middle class program—is less clear than for unemployment or occupational injury benefits. In fact, interests of the working class and of the aged may diverge over pensions. Generational conflict over the tax burden required to support generous pension systems may separate the working class and the aged. While the social democratic theory is right to emphasize the role of politics, it may err in the limitation to class politics.

Social Insurance Program Experience

A number of studies find that years of experience with social insurance programs increase expenditures (Aaron, 1967; Wilensky, 1975; Cutright, 1967). However, the theoretical meaning of this effect is unclear. It may reflect: 1) the existence of ideological differences in interventionism that led to early adoption of programs and continued expansion; 2) technical knowledge of the government bureaucracy needed to easily implement new programs; 3) bureaucratic momentum in budget making that makes it difficult to limit growth of spending of existing programs; or 4) development of the strong influence of constituent groups represented by the program. Orloff and Skocpol (1984) provide perhaps another interpretation: the date at which pension programs were instituted reflects organization differences of states—in particular, the role of the civil bureaucracy and patronage politics—that may continue to affect expenditures. Given the lack of clear meaning of program experience, it is not possible to treat it as part of the industrialism or class theories, or as an independent theory. However, it may be usefully studied as a control variable that summarizes various unmeasured influences on pensions and provides a more careful test of the industrialism and class theories.

RESEARCH NEEDS

This review of the theories and literature suggests that a number of issues, in relation to both pensions and social welfare expenditures, need to be addressed. First, the study of pensions needs to proceed through the development of models across different economic and political contexts. Rather than focusing on one subset of nations, and ignoring models for other groups of nations as has been done in other studies, it is important to provide a more comprehensive picture of pension determination by comparing models across several groups of nations. It is possible then to study both the emergence of systems in developing nations as well as the growth of mature systems in advanced industrial nations, and to identify the domains to which the theories best apply. The methodological advantages of this approach are also important: contextual analyses of a heterogeneous group of nations avoid truncation problems common among studies of developed nations alone and problems of cluster effects found in analyses of all nations together.

Second, it is necessary to examine in more detail the meaning of percent aged. If the industrialism theory is correct, level of state pen-
sion support should respond more or less automatically to the size of the aged population. However, it may be that political pressure on behalf of the aged is needed to increase benefits. If the aged population represents an unorganized but important voting block or interest group that pressures the government for higher benefits, then the effect of the aged population should be greatest, all else equal, in highly democratic nations. In less democratic nations, where the government is less responsive to the political participation of the nonelite, the size of the aged population will be a less important determinant of pensions. The entitlement aspect of the aged population can therefore be differentiated from political aspects by comparing the additive and interactive effects of percent aged and democracy. As well as clarifying the meaning of percent aged, this would lead to a more detailed examination of the effects of democracy: democratic structures alone may not increase pensions, but they may facilitate the effect of the aged population.

There are additional ways to explore the meaning of percent aged. One is to measure pensions not only as percent of the GNP, as has been done for all studies of social welfare, but at the same time standardizing for the size of the aged population. This allows the examination of the effects of percent aged on pension benefits relative to their numbers. If the effect of percent aged is merely due to more persons accepting benefits, it will show up in the former measure. If political pressure is also important, then the percent aged should also increase benefits controlling for the size of the aged population. Another way to explore the meaning of the size of the aged population is to control for variables related to other groups or political forces affecting pension expenditure. Controls for fertility, working class strength, and social insurance program experience, for instance, can help determine whether the effects of percent aged are spuriously due to other population and institution characteristics. Finally, the study of the effects of the retired population, compared to those of the aged population, may also help identify the groups that benefit most of pension spending.

Existing studies of pensions have not fully addressed these points. Aaron (1967) and Coughlin and Armour (1983) briefly examine pension expenditures as part of larger studies of general social welfare expenditures. Atchley (1985) and Day (1978) describe the characteristics of pension systems, but with little analysis of the determinants. Myles (1984), DeViney (1984), and Entwisle and Winegarden (1984) analyze the determinants of pensions, but only for limited subsets of nations. None of the studies systematically examines the influence of all potential determinants within and across groups of nations.

METHODS

In order to test the macro-sociological theories of pension expenditures, the nation-state is treated as the unit of analysis and the data are measured at the aggregate level. The sample to be analyzed includes the 48 nations for which data on pension expenditures are available for four time points—1960, 1965, 1970, and 1975. Though not a representative sample, this group of nations covers all levels of development. By region, the distribution is as follows: Africa (13), Asia (8), Latin America (8), and Europe, North America, Oceania (19). Because of the unavailability of data and different meanings of social welfare programs in centrally planned economies, Eastern European and other communist nations are not included. Otherwise, non-Western nations are underrepresented, but much variation in regional background, development, and pensions exists in the sample (see Appendix A for a list of nations). The heterogeneous group of nations is thus appropriate for our goal of studying variation in models across political and economic contexts.

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2 Other studies examine factors determining the adoption date of public pension programs for the U.S. and Great Britain (Quadagno, 1984; Orloff and Skocpol, 1984). While these studies overlap ours in considering industrialism and working-class determinants of legislative action, the dependent variables and the time period studied are different. Moreover, the comparative-historical case study approach differs from the cross-national multivariate approach used in this paper.

In this context, it is worth noting that our research and all the studies listed above are part of a theoretical and research tradition in which government activities are taken as expressions of, or responses to, social demands, whether class or demographically based. An alternative, state-centered approach is used by Orloff and Skocpol (1984) in their historical study of pension adoption in the U.S. and Great Britain. The characteristic of the state crucial in their study—the relative period of development of a civil bureaucracy and the end of patronage politics—is more difficult to study quantitatively for a large number of nations. However, if state characteristics affect the date of adoption of a program, and the date of adoption is included as an independent variable (as social insurance program experience), then there is some control for variation in state characteristics. Of course, social insurance program experience does not provide a test of their argument. Controlling for this variable, however, and the state-centered influences it may reflect, gives more confidence to the findings of the social demand variables we study directly.

3 Seven other nations have data for only the last
Data for the 48 nations over the four time points are pooled in order to provide a combination of cross-sectional and longitudinal data. Since the use of time-series data for each nation introduces dependency into the sample units, special methods of analysis are needed to deal with the statistical problems that result. Nonetheless, this provides a sample size of 192—large enough for multivariate analysis even when nations are divided into subsamples. Indeed, studying differences across nations and over time, especially for the group of advanced industrial nations, provides additional variation in the variables needed to test adequately the industrialism and working class theories. The design thus provides benefits not available from either the cross-sectional or time-series analyses that exist in the literature.

**Pension Expenditure Measures**

A crucial component of public pensions is the expenditures of the program, since they most directly summarize benefits available to the aged population. It is this aspect of pension support that we examine in this paper. Other characteristics of national systems, such as the ease of qualifying for benefits, coverage of the population, benefit formulas, and flexible retirement options are also important, but are sufficiently complex to require a paper in their own right. Moreover, variation in many of these characteristics is partly reflected in expenditure levels. Our focus on expenditures, then, reflects a theoretical interest in government financial effort, and follows a long line of similar studies of social welfare expenditures.

Data on pension expenditures come from the International Labour Organization. They include as pensions expenditures all government-sponsored or government-mandated schemes for old age, survivors, and disability insurance, except for special programs for public employees. Appendix B presents the sources of data for these and other variables.

The first measure studied is pension expenditures divided by the gross national product (times 100). This measure controls for available resources and is the same as nearly all other measures used in studies of social welfare. The second measure attempts to control additionally for expenditures due to the size of the population entitled to benefits. It is calculated as pension expenditures per person age 65 and over divided by the gross national product per capita (times 100). It can be interpreted as the average pension benefit relative to the standard of living and controls directly for the proportion of the population that is aged directly in the measure. Use of the relative pension measure provides an especially stringent test of the effects of the aged population since it weights pension expenditures by the reciprocal of percent aged.

**Measuring the Independent Variables**

Industrial structure and economic development are measured by energy use per capita. The results were also replicated with a measure of gross national product per capita and were found to be equivalent to those for energy use. However, we rely on energy use since it does not suffer from difficulties in measuring inflation and the exchange rate for all nations.

The percent aged is measured by the number of persons 65 and over divided by the total population (times 100). The number of aged persons over either the working age population 25–64 or the number of workers provides identical results and are not reported. A related measure, the size of the retired population, is equal to the number of males age 65 and over not in the labor force divided by the total population. The denominator includes the total population—rather than just the population of aged males as in the participation rate—since the measure is designed to tap the influence of retired persons relative to other age and labor force status groups in the population. As before, the results for this measure are the same.

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4 Data on the number of public pension recipients are not available cross-nationally, so the number of aged persons is used as a proxy. Other proxies were also tried, but yielded results identical to those using the number of persons age 65 and over. For instance, pension expenditures divided by the number of male labor force nonparticipants has a bivariate correlation of .98 with pension expenditures divided by the number of aged persons.

5 Note that our relative pension measure, [(Pensions/Population 65+) / (GNP/Population)], is equal to [(Pensions/GNP) / (Population/Population 65+)]. In other words, the relative pension measure is equal to pensions over GNP weighted by the reciprocal of the proportion aged. This means the percent aged independent variable must predict a dependent variable which contains its opposite. These ratios are theoretically appropriate for the analyses, and do not involve spuriously high relationships because of the common components. They do tend, however, to reduce the effect of percent aged and provided a severe test of the industrialism theory.
as for retirees over working persons age 25–64. Measures of percent aged and of percent retired are correlated higher than .8 and are not used in equations at the same time.

To measure fertility and family size, the child/woman ratio is used. It is equal to the number of children ages 0–9 divided by the number of women 20–44. While Entwisle and Winegarden (1984) use a measure of fertility lagged to predict pensions, this measure accomplishes the same goal. It summarizes the number of births over the last ten years, reflects fertility lagged, and avoids reliance on the number of births in any single year. It also controls for infant and child mortality and therefore provides a better measure of the actual number of children to be raised. Finally, it avoids simultaneity problems between pensions and fertility since the child/woman ratio reflects fertility over the decade preceding pension expenditures. The age range of the numerator and denominator were adjusted to include different age and sex groups, but none of the changes made any difference in the results.

Social insurance program experience (SIPE) is measured as in Wilensky (1975) and Cutright (1967): the number of years experience of a nation in five programs since 1934.

A measure of political democracy is needed to examine interaction effects with percent aged. We rely on Bollen’s six-component scale, which reflects political competitiveness and political liberties (Bollen, 1980). The scale, which varies between 0 and 100, has been shown to be unidimensional, valid and reliable. However, the measure is available for only the two earliest time points—1950 and 1965. This is not a major problem for the analysis for two reasons. One: because pension and social welfare programs develop inertia (Wilensky, 1975), the effects of democracy at the beginning of the time period are likely to influence expenditures in the future, even if democratic procedures change in later time points. Hence, democracy values at the beginning of the time period are likely to be most important. Two: in studying the interaction, it is useful to divide nations into larger groups. Even if changes in democracy occur that are not measured for 1970 and 1975, in most instances, they are not large enough to change the classification category. The exceptions and possible biases due to the time-span limitation of this measure are considered below.

Measuring Class Variables

Since class theory applies to advanced industrial democracies, class variables are measured only for these nations (indeed, they often cannot be measured for other nations). We rely on those found most important in other studies: political control of the government by left and right parties, the size of unions, union centralization in bargaining, electoral competition, and corporatism.

The measures of government control were calculated according to Stephens (1979) and Myles (1984). Parties were identified as left, center, and right according to Castles (1983). For each party since 1946, the party received a 1 if it was in control of the government, a 0 if it was not. For those parties participating in coalitions, a party received a score between 0 and 1 depending on the proportion of legislative seats it had relative to the legislative seats of all parties participating in the coalition. The scores were then averaged over the five years up to and including the year of observation. This provides a summary of the control over a five-year time period. These measures are virtually identical to party cabinet representation (see Hicks and Swank, 1984; Cameron, 1978); they measure actual control of government and the ability to implement policies. Measures of percent of the vote for each party were also gathered, but as others have shown (Myles, 1984), they have smaller effects than party control. Furthermore, since it is possible that control over the last five years is not long enough for governments to implement their policies, averages were created of party control over the last ten years and the last fifteen years. In all cases, however, the effects of these two measures were equal to or smaller than the five-year measure.

Union membership as a percent of the labor force (or union density) comes from the statistical yearbooks of each nation, and corresponds to figures presented by Korpi (1983) and Stephens (1979) for 1960 and 1970. Union centralization is measured, as in Hicks and Swank (1984), by a dummy variable in which Sweden, Norway, Finland, Denmark, Austria, Belgium, and the Netherlands are coded 1 and other nations are coded 0. The nations listed above all have some form of economy-wide bargaining procedures with participation of a centralized union authority. Bargaining in other nations is at the firm or industry level. The classification of nations comes originally from Stephens’ (1979) scale of union bargaining

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6 Stephens (1979) and Castles (1983) use slightly different classifications of leftist parties, the difference being that Castles does not include communists. We also calculated measures of leftist party control according to Stephens’ measure, but found no difference between the two in the effect they have on pensions.
power. However, Hicks and Swank (1984) found that the dichotomous recode of Stephens' original scale was correlated .99 with the more detailed measure and had a larger effect on cash transfers. Additionally, Hicks and Swank (1984) and Myles (1984) suggest that union centralization interacts with union density; that is, union density may influence expenditures only when bargaining power is centralized and all union members can act cooperatively. An interactive term equal to union density multiplied by union centralization is therefore also measured.

To be complete, several other variables are considered that are not measures of working class strength, but may be used to explain spending in advanced industrial democracies. The first is electoral competition. Theories of democratic electoral processes (Cameron, 1978) suggest that the more intense the competition among parties, the more parties must offer to obtain support, and the higher the expenditures for pensions will be (Myles, 1984). Electoral competition is calculated from the voting distribution for each selection against the perfectly competitive situation (where each party receives an equal share of the vote). An average of the competition coefficients was calculated from all elections within the last five years of the data point. Measures for the last ten and fifteen years are also calculated, but differ little from those for the last five years.

Another measure is corporatism, or corporatist--technocratic linkages (Wilensky, 1976). It measures the centralization of union, business, and government elites and their ability to implement desired policies, especially in response to the needs of the population and the imperatives of industrial development. It is calculated as the sum of scores for the appointment power of the central government and the centralization of labor union federations. The scores are coded directly from Wilensky (1976:50).

Finally, two macro-economic fiscal variables found to affect transfers in time-series studies of the U.S. are measured (Griffin et al., 1983). One is inflation, measured as the consumer price index. The other is the unemployment rate, or unemployed persons over the total labor force.

8 With a lagged dependent variable, the estimates are biased as well as inefficient in the presence of correlation of the errors. Because a lagged dependent variable biases the OLS estimates, it is difficult to estimate accurately autoregression coefficients from the residuals to use in GLS. Use of instrumental variables to help with this problem is less easily implemented, further complicates the estimation technique, and requires strong instrumental variables. Furthermore, use of a lagged dependent variable, because it is highly correlated with later values of the dependent variable, leaves little variation left over for the more meaningful theoretical variables to explain and changes the focus of the model to fluctuation from the trend. For our purposes, then, models without a lagged dependent variable are more useful on theoretical and statistical grounds. The exception to this, however, is in the study of how retirement affects pensions, where possible simultaneity between the two variables requires use of a lagged model.

Even if the lagged dependent variable model is not useful, it is possible to lag the independent variables. The exact timing of the effect of the independent variables, or the lag in time it takes for the independent variables to affect pensions, is unclear. Since legislative processes take some time, some lag is likely to be involved. However, the five-year span between time points in our study is perhaps too long. We estimated models in which the independent variables were lagged, but these models explained less variance than the instantaneous models, and the lagged variables had smaller effects. Moreover, the lagged models require the deletion of one wave of data. Therefore the results to follow do not lag the independent variables (again, with the exception of the effects of retirement and of the effects of party control which cover the last five years). Were yearly time-series data available, a one- or two-year lag would be more appropriate and might show larger effects. Given the data limitations, though, an instantaneous model is the best approximation.

7 The computing formula for the measure is given in Myles (1984:100). It sums the squared differences between the proportion of votes for each party and the proportion of votes that each party would get if there were perfect equality. The scores range from 0 to 1, with 1 indicating each party received an equal share of the vote.
or the country and time-specific effects can be estimated as part of the error term (Hannan and Young, 1977). In either case, the models assume the error components are constant across all years within countries (e.g., the residual correlation between 1960 and 1965 is the same as between 1960 and 1975). Such an assumption is most realistic for short time spans (Berk et al., 1979). Another type of model assumes a first order autoregressive process as well as contemporaneous correlation and heteroscedasticity of the errors. Since the error is partly a function of the error in the previous time point times and an autocorrelation coefficient less than one, the serial correlation between errors within a country declines exponentially as the lag between the time points increases. The correlation between distant residuals is smaller than that for adjacent residuals, a characteristic appropriate for longer time spans. Further, autoregressive coefficients unique to each nation are estimated, thereby allowing heterogeneity across nations.

Given the world-wide and intra-nation changes that occur during the time span in this study, the assumption on nonconstant autocorrelation is most appropriate for these analyses. This is further supported by an examination of OLS residuals: a correlogram shows that the residuals across time averaged over all countries decline approximately exponentially as the time lag increases. In the models to follow, therefore, a first-order autoregressive process is assumed. Specifically, the error term for each nation is a function of the previous year's error, an autocorrelation coefficient, and random error. For each nation, an autocorrelation coefficient is estimated from OLS results and the coefficient is then used to adjust the estimates according to standard GLS procedures (Hanushek and Jackson, 1976). At the same time, adjustments for contemporaneous correlation of the errors across nations and for heteroscedasticity of errors are made (Kmenta, 1971).

Finally, the pooled models also assume that coefficients are homogeneous across time and nations. Since the contextual models divide the nations into subgroups, differences across nations are likely to be small. Tests for differences across time points are performed and discussed subsequently, and do not indicate any violation of the homogeneity assumption. Were longer time series and more nations available for analysis, it would be possible to better explore these issues by estimating models specific to each nation and time point. Additional cases are not available, however, which is one reason for pooling the data.

RESULTS: ALL NATIONS

The analysis first examines the effects of the industrialism variables on pension expenditures across and within subsets of nations grouped by similar levels of political and economic development. This is done to see whether the effects found by others for all nations grouped together hold within more homogeneous groups of nations. It also allows examination of the effects of percent aged across different political contexts and provides more information on the meaning of the effects.

Table 1 presents models for the total sample of 48 nations combined and for the two dependent variables—pensions over GNP and relative pension expenditures. Four independent variables, stemming from various versions of the industrialism theory, are included: energy use per capita, the child/woman ratio, percent aged, and SIPE. The results for the total sample show dominant effects from two of the variables: percent aged and SIPE. This replicates Wilensky's findings for social welfare expenditures.

Grouping the Nations

In order to test the models within contexts, the nations need to be grouped into homogeneous subsets. The first step requires separating the 18 advanced industrial nations studied by advocates of the class theory. These nations include all the major European democracies plus the U.S., Canada, Australia, New Zealand and Japan. The remaining nations are less homogeneous and need to be further divided into meaningful groups. Typically, nations are distinguished by level of economic development in such divisions. However, for measures of

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9 For our data, the results from the two methods do not differ greatly, but we report the more appropriate autoregressive estimates in the tables.

10 In addition to testing for the effects of development, we also examined the influence of multiple measures of economic dependency, such as commodity export concentration, trade partner concentration, foreign investment, and foreign debt. None of these variables had significant net effects on pensions. To the extent that economic dependency limits economic growth, it may indirectly reduce pensions. No direct effects exist, however.

11 Stephens (1979) differs from other advocates of class theory by excluding Japan from his study of social welfare. Including Japan may favor the working class theory since it exhibits both leftish rule and low pensions. When we estimated models without Japan, though, no major differences in the results appeared.
pension expenditures that already control for development, it is more useful to divide the nations by level of democracy. Development and democracy are closely related, but the use of democracy will allow a test of the hypothesis that democracy facilitates the influence of the aged on pension expenditures. A dividing point of 67.7 on Bollen’s scale was used to distinguish low democracy nations from industrializing high democracy nations. There is no single cut-point on the democracy continuum that distinguishes democracies from non-democracies, yet the value used here divides the nations into roughly equal groups that make theoretical sense. One group includes developing nations with democratic traditions, such as India, Sri Lanka, Mexico, and Costa Rica. The other group includes developing nations without democratic traditions, such as El Salvador, Nicaragua, and most African nations (see Appendix A for a list of the nations in each group).

While this classification is somewhat arbitrary, there are several points to keep in mind when considering its usefulness in the analysis. First, dividing the nations into three groups provides for ease of presentation and interpretation. The alternative would be to test for interactions by multiplying the continuous democracy measures by each of the other measures, but this makes interpretation difficult. It would also not provide the clear test of the relationship within clusters that is needed to support the industrialism theory.

Second, with few exceptions, the classification of nations is stable over time. Without 1970 and 1975 data on democracy, it is helpful to divide the sample into larger categories in which changes across the groups are minimized. A review of the recent political history of all the nations in the sample (Banks and Overstreet, 1980) shows major changes in democratic procedures in three nations. Greece and Panama experienced military takeovers of democratic governments in the late 1960s and the Philippines saw the institution of martial law in the early 1970s. Since these nations began the period with democratic procedures, levels of pensions reached during this time are likely to persist, so it is more appropriate to include these nations with the more democratic ones than with the less democratic ones. Nonetheless, the models to follow were replicated with these nations deleted without any major changes in the coefficients. Our inability to measure major changes in democracy in 1970 and 1975, then, does not bias the results.

Third, the results are not sensitive to other changes in the classification. One of the nations in the middle group—Israel—could be included with the advanced industrial nations. If

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12 To classify nations, the average of the 1960 and 1965 democracy values are used. For nations with scores for only one of the years, the single score is used.

13 It is important to note here that it is necessary for the nations to remain in one category over the total time period. If nations were changed, longitudinal analysis of the clusters would not be possible. An alternative would be to drop the nations altogether to avoid any bias from changes, but this involves the loss of useful information. Since inclusion of these nations in the group of industrializing democracies does not greatly change the results (in no case do the standardized coefficients change by more than .12), we use them in the analyses to follow.
it is, however, the coefficients in the models change only slightly. Similarly, nations on the border between low democracy and high democracy do not change the results when shifted to the other category. Overall, then, the differences found in the models within the groups are not due to the inclusion of outliers or to the misclassifications of nations.

Fourth, the classification is similar to, but not identical to a classification of nations on the basis of development. Nations such as India and Sri Lanka, for example, have high democracy scores but low energy use scores. This shows in the means for the three groups on Bollen’s democracy scale, which are 49.5, 83.1, and 97.6; the middle group is much closer to the advanced industrial nations than to the low democracy nations. In contrast, the means on energy use are 1.50, 8.7, and 43.3; the middle group is much closer to the low-income nations than to the advanced industrial nations. If the models of the advanced industrial nations and the industrializing democratic nations are similar, the effects of democracy will be indicated. If the models of the industrializing nondemocracies and the industrializing democracies are most similar, the interactive effects of development will be indicated.

In summary, though this is not the only classification that might be used and though it may differ from those used by others, it has several advantages. It meets our goals of analyzing relatively homogeneous subsets of nations that make theoretical sense and allows tests for the facilitative effects of democracy. Further, the classification is not biased by changes in democracy over time nor is it sensitive to outliers or minor changes in the categories. Some loss of information occurs in the grouping, but this loss is outweighed by the desire for clear results and ease in comparing coefficients across separate groups.

**Results by Group**

Table 1 presents the results of the MGLS estimates for the three groups. Each group has over 45 degrees of freedom and sufficient cases for multivariate analysis. The effects of the variables across groups, which can be compared using the unstandardized coefficients, show important differences. Only in the low democracy nations does energy use have a significant effect. This holds for both dependent variables and indicates that a minimum level of economic development is necessary before pensions emerge in low democracy nations. The lack of effect of energy use for other nations suggests that with democracy, further economic growth has little influence on pension expenditures. This does not suggest convergence among industrial nations, but indicates that once minimum income levels are reached, higher income allows additional diversity.

The child/woman ratio also helps explain pension expenditures. The results in Table 1 show that the more children there are per mother the lower are the pension expenditures. This negative effect holds within each of the subgroups, although the strength of effects varies by group and by dependent variable.

For pensions over GNP, percent aged has no effect in low democracy nations and positive effects in industrializing and advanced industrial democracies. Where democracy does not exist, the size of the aged population makes little difference. As democracy increases, however, the effect of percent aged becomes strong and positive: a one-percent increase in the size of the aged population raises the percent of GNP devoted to pensions by .32 and .55. Of special interest is the fact that the coefficients for the industrializing and advanced industrial democracies are not statistically different. Despite major differences in energy use between the two groups of nations, the effects of percent aged are similar. Democracy thus facilitates the effect of percent aged regardless of level of development. For the relative pension measure, percent aged has important effects not only in advanced industrial democracies. In the other nations the child/woman ratio has stronger effects. For a dependent variable that already controls for the aged population, both democratic procedures and substantial economic resources are needed for effects of percent aged to emerge.

Similar effects are found when percent retired is substituted in the equations. However, unlike percent aged, percent retired may be a consequence of, as well as a cause of pensions. To avoid simultaneity bias, it is necessary to consider the effects of percent retired lagged with controls for a lagged dependent variable. Although the lagged models exhibit some theoretical and statistical problems that prevent more detailed analysis (see footnote 8), they are necessary in this instance to identify accurately the causal impact of percent retired. Without reporting the detailed results, the unstandardized coefficients of percent retired on pensions over GNP are −0.03, 0.76, and 1.34 for low democracy, industrializing democracies, and advanced industrial democracies. For relative pensions the coefficients are −0.97, 9.43, and 6.32. In a direct comparison of standardized coefficients, the effects of percent aged are larger than those of percent retired, but the pattern of effects for both variables are very similar. While these analyses cannot be considered final, they do provide preliminary
evidence that in democracies high retirement can increase pension benefits.

Finally, the effects of SIPE are strong in all equations. It is difficult to determine the theoretical meaning of this effect, but it is worth noting that the effects of the other variables hold, even with controls for this variable. Equations were also run in which SIPE was deleted, showing increases in the size of the effects of percent aged and energy use, especially in advanced industrial democracies.

Overall, then, the separate models indicate some important differences across the groups in the size of the coefficients. In some cases, such as for the child/woman ratio, the combined sample hides the negative relationships within groups of nations. In the case of energy use, the reduction in within the groups reduces the effects from what they are for the total sample; yet within democracies, the effects of percent aged are sufficiently large to eliminate cluster effects as an explanation of the relationships. In the case of energy use, aggregating the sample, instead of exaggerating the relations to pensions, actually hides an important relationship among low democracy nations. In sum, these contextual models make theoretical and empirical sense, and indicate how operation of the industrialism variables varies by the political and economic environment.

For these results to be meaningful, however, it is necessary that the estimates be constant over the pooled time points; otherwise, the results are an average of perhaps very different coefficients across the cross-sections. Tests for differences in the effects of the variables across time show, with one exception, no statistically significant or substantively important differences. The exception is that for the low democracy nations, the effect of energy use on pensions/GNP decreases in 1970 and 1975. Because the interpretation of the other variables or the evaluation of the theories is unaffected by the change, and because all other effects are constant over time, the results of the pooled model can be accepted as valid.

CLASS EFFECTS IN ADVANCED INDUSTRIAL DEMOCRACIES

The previous models for advanced industrial democracies are only a beginning, since a number of class-related variables also need to be considered. In this section, the class variables are added to the industrialism variables already studied and their relative influence is examined. Since there are a large number of closely related class variables to consider, they are added to the baseline equation one at a time. This provides the best opportunity for the class hypotheses to be supported; had the class variables been added at the same time, effects of some of the variables might have been hidden by controls for other closely related class variables.

Table 2 presents the effects of both industrialism and class variables on pensions/GNP for the 18 nations over four time points. The variables considered are left party rule, right party rule, union centralization, union density, electoral competition, and corporatism. While the correlations of these variables with pensions/GNP are smaller than the correlations of most of the industrialism variables, all but one are in the predicted direction and are moderately strong in size. When the class variables are added to the multivariate equation, however, none are substantively or statistically significant. The industrialism variables, especially percent aged and SIPE, remain strong with controls for class. The lack of effects of the class variables also holds for some other variables not reported in Table 2. Center party rule and combined left-center party rule have equally small effects as left rule. Hewitt’s (1977) and Stephens (1979) measures of leftist vote and leftist rule also do not significantly affect pension expenditures. Measures of workers involved in industrial disputes over the nonagricultural labor force averaged over the last five years, and man days lost in industrial disputes over the nonagricultural labor force averaged over the last five years had no effect on pensions.

The same equations are presented in Table 3 for the relative pension measure. The effects, with one exception, are the same as before: percent aged and SIPE have dominant effects while class variables have no effect or are in the direction opposite the predictions. The exception is that electoral competition increases relative pension expenditures. This is consistent with arguments about the facilitating influence of democratic procedures. When democratic competition is intense, benefits for the aged are highest regardless of the party in power or union power.


15 We also tested for curvilinear relationships of class and pensions which may not be shown by the linear effects in Tables 2 and 3. All coefficients for the quadratic terms for the class variables, used to check for curvilinear effects of the class variables, are nonsignificant.

16 Two other dummy variables had no significant effect. One is whether or not the nation was a federation or unitary; the other is whether the government was coalitional or coalescent.
Table 2. Unstandardized and Standardized Coefficients for MGLS Estimates of Pensions over GNP, Advanced Industrial Democracies

<table>
<thead>
<tr>
<th></th>
<th>Pensions/GNP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Energy Use</td>
<td>.065</td>
</tr>
<tr>
<td></td>
<td>.031</td>
</tr>
<tr>
<td>Child/Woman</td>
<td>-.357</td>
</tr>
<tr>
<td></td>
<td>-.122</td>
</tr>
<tr>
<td>%Aged</td>
<td>.693</td>
</tr>
<tr>
<td></td>
<td>.512</td>
</tr>
<tr>
<td>SIPE</td>
<td>.673</td>
</tr>
<tr>
<td>Left Rule</td>
<td>.350</td>
</tr>
<tr>
<td>Right Rule</td>
<td>-.274</td>
</tr>
<tr>
<td>Union Cent.</td>
<td>.361</td>
</tr>
<tr>
<td>Union Density</td>
<td>.405</td>
</tr>
<tr>
<td>Union Cent.* Density</td>
<td>.430</td>
</tr>
<tr>
<td>Corporatism</td>
<td>.501</td>
</tr>
<tr>
<td>Electoral Compe-</td>
<td>-.121</td>
</tr>
<tr>
<td>tition Intro</td>
<td>.456</td>
</tr>
<tr>
<td>Inflation</td>
<td>.873**</td>
</tr>
<tr>
<td>Unemployment</td>
<td>.035</td>
</tr>
<tr>
<td>intercept</td>
<td>-3.51</td>
</tr>
<tr>
<td>df</td>
<td>66</td>
</tr>
<tr>
<td>n</td>
<td>18</td>
</tr>
<tr>
<td>t</td>
<td>4</td>
</tr>
</tbody>
</table>

* Standardized coefficients are below unstandardized coefficients.

Finally, to further check the robustness of the results, the influence of the two macroeconomic variables, inflation and unemployment, were examined. The results in the last columns of Tables 2 and 3 show that unemployment has no significant effect on either dependent variable. The consumer price index significantly affects pension over GNP, but not

Table 3. Unstandardized and Standardized Coefficients for MGLS Estimates of Pensions Per Aged Person over GNP per Capita, Advanced Industrial Democracies

<table>
<thead>
<tr>
<th></th>
<th>(Pensions/65+)/(GNP/Pop)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Energy Use</td>
<td>.007</td>
</tr>
<tr>
<td></td>
<td>.008</td>
</tr>
<tr>
<td>Child/Woman</td>
<td>-.239</td>
</tr>
<tr>
<td></td>
<td>.068</td>
</tr>
<tr>
<td>%Aged</td>
<td>.440</td>
</tr>
<tr>
<td></td>
<td>.326</td>
</tr>
<tr>
<td>SIPE</td>
<td>.589</td>
</tr>
<tr>
<td>Left Rule</td>
<td>.203</td>
</tr>
<tr>
<td>Right Rule</td>
<td>-.226</td>
</tr>
<tr>
<td>Union Cent.</td>
<td>.307</td>
</tr>
<tr>
<td>Union Density</td>
<td>.289</td>
</tr>
<tr>
<td>Union Cent.* Density</td>
<td>.316</td>
</tr>
<tr>
<td>Corporatism</td>
<td>.493</td>
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<tr>
<td>Electoral Compe-</td>
<td>-.161</td>
</tr>
<tr>
<td>tition Intro</td>
<td>.418</td>
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<tr>
<td>Inflation</td>
<td>.421</td>
</tr>
<tr>
<td>Unemployment</td>
<td>.076</td>
</tr>
<tr>
<td>df</td>
<td>66</td>
</tr>
<tr>
<td>n</td>
<td>18</td>
</tr>
<tr>
<td>t</td>
<td>4</td>
</tr>
</tbody>
</table>

* Standardized coefficients are below unstandardized coefficients.

* p < .05.  ** p < .01.
age-standardized pensions. In both cases, the effects are quite small. High inflation may slightly raise pension expenditures faster than GNP because cost-of-living escalators are often tied to prices, but it is not a major determinant. Further, controls for the macroeconomic variables do not reduce the effect of percent aged. The major influence of the macroeconomic variables is that they reduce the effects of SIPE to nonsignificance in the equations. Given the multiple interpretations of the effect of SIPE, and its weak effects in these equations, we are less confident of its influence than we are for that of percent aged.

CONCLUSIONS

This paper examined pension expenditures separate from other social welfare programs; it compared the determinants of pensions within and across different political and economic contexts; it considered in more detail the effects of percent aged and retirement on pension expenditures; and it evaluated industrialism and class theories of the welfare state. This study improves on previous studies in its use of both time-series and cross-national data, a complete set of independent variables, appropriate statistical techniques, and comparison of models across subsets of nations. The conclusions from these efforts follow.

First, the results for the measures of pension expenditures show dominant effects of age structure variables and social insurance program experience. Class variables have little or no influence. In contrast to most other studies, the findings here indicate the importance of age politics over class politics—a finding that is more likely to apply to pensions than to other social welfare programs. The age variables are especially effective in explaining differences over time within nations, and thus have a strong effect when time-series variation is included with cross-sectional variation. For example, pensions have grown dramatically in nations such as the U.S., Canada, or Switzerland where union centralization and leftist power have been weak. Instead, the rise in pensions correlates closely with changes in the age structure. The data also show that social democratic nations with high pension expenditures such as Sweden, Norway, and Austria are among those with the highest percent aged.

Second, the development of contextual models shows both similarities and differences across political contexts. The similarity is that industrialism variables are important in all political and economic contexts. This satisfies Castles and McKinlay's (1979) requirement that there exist effects both within and across subsets of nations. The difference is that the size of specific variables change—energy use declines, and percent aged increases with political and economic development. Of particular importance is that the effects of percent aged increase with democracy. At low levels of democracy, age has no influence while the economic resources of a nation are crucial for level of expenditures. In both industrializing democracies and advanced industrial democracies, the size of the aged population increases both absolute and relative pension expenditures. Percent aged increases relative to pension expenditures when both high income and political democracy are present. Once development leads to a minimum pension level, then, the size of the aged population and democratic politics become important for further increases in expenditures. In short, democracy facilitates the effect of percent aged and indicates that the political influence of the aged is important in raising pensions.

Third, the ways in which a large aged population influences pension expenditures have been partly isolated. An entitlement component of pension growth is shown by the effects of percent aged on pensions/GNP. This may appear obvious, but it is an important correction to much of the literature on the strength of the working class, which denies the influence of the age structure. Moreover, if scholars are concerned with the sources and causes of the growth of government expenditures, the demographic effects of a large aged population are equally as important as less obvious explanations. Because the argument is a straightforward one, it does not make the empirical support for the argument any less important, especially given the widespread skepticism it has faced.

When relative pensions are studied, other influences on pension expenditures are demonstrated. Since percent aged must predict a dependent variable that already controls for the percent aged, this provides a stringent test of the age structure arguments. Yet the effects of percent aged remain for advanced industrial democracies, although they are weaker than for pensions/GNP. This effect does not result automatically from more recipients, and likely reflects the pressures of a large, high voting group on legislatures in political democracies.

The size of the retired population is also important in this process. While levels of pensions influence the level of retirement (Pampel and Weiss, 1983), this paper offers the additional insight that retirement may in turn affect pension levels. A certain pension level may be sufficient to attract workers into retirement, but retirees may later find the level insufficient and desire greater benefits. Forced
retirees also may be dissatisfied with their pension benefits. As their numbers increase, the retired population has increasing power to politically influence their level of benefits. We have by no means fully developed the joint effect of these variables on one another, and future research will need to consider the issue in more detail. However, we have provided preliminary evidence for the existence of such an effect and for the political power of the aged and retired population.

Fourth, this paper offers support for a theory of government spending that considers both demographic-economic structure and political aspects of democratic government. The industrialism theory correctly emphasizes the structural conditions that may lead to high pension or social welfare spending, but fails to consider the political means by which demographic changes may lead to higher spending. The assumption that governments respond automatically to the needs of the population is certainly oversimplified, and further work in this tradition must attend to the political role of the aged (Williamson et al., 1982) and of other demographic groups in welfare states.

Class theories correctly emphasize the role of democratic politics, but receive little support for their assertion that unions and social democratic parties are the dominant political influence on pension expenditures. For at least this one program, revision is necessary of the orthodox view that class politics dominate social welfare, and the scope or domain of class theories must be limited.

Of course, it is also necessary in future research to consider the scope of our own findings. In particular, the relationship between the size of the aged population and other forms of welfare spending, and the way in which pension spending relates to overall social welfare spending need study. Our goal has been to examine the program most closely based on age-eligibility requirements, and we do not have the space here to consider other dependent variables. Yet it may be that nations with high nonpension social welfare spending may devote fewer expenditures to pensions since aged persons can benefit from programs available to all age groups. This possibility does not appear to bias our results since pension spending is correlated at .59 with sickness-maternity spending and .89 with all social insurance spending. Where pension spending is high, so is spending for other social insurance programs. Nonetheless, further study of the effects of percent aged on these other programs, and comparison with the results found here, is needed.

Another direction for further research is to consider different measures of pensions. While our two measures of expenditures reflect the size of average benefits or national effort, they do not measure the way in which those expenditures are distributed to beneficiaries. The same expenditure may be distributed on the basis of past earnings, thereby maintaining wage inequalities, or they may be distributed more progressively, providing a higher replacement rate to low-income workers. Although class has little or no effect on how much income is distributed to the aged population, it may influence the equality of distribution (Myles, 1984). As Deviney (1984) suggests, the industrialism and class theories may explain different phenomena. More careful multivariate analyses such as those done here, and the development of valid and reliable pension quality measures are needed before conclusions about such class effects can be made.

Finally, future research needs to better measure the strength of monopoly capitalism, test neo-Marxists theories of the welfare (O’Connor, 1973; Olson, 1982), and further determine the robustness of the effects of percent aged. Griffin et al. (1983) show effects on transfer payments of industrial concentration, industrial utilization, and wages and unemployment specific to the monopoly and competitive sectors of the economy. Their study differs from ours in its focus on time-series data for the U.S. and on fluctuation in transfer payments from year to year rather than on long-term trends. However, if their measures can be obtained for additional countries, they may also explain cross-national variation and trends and offer opportunities for further research in this area.

Appendix A. List of Nations

<table>
<thead>
<tr>
<th>Industrializing Non democracies</th>
<th>Industrializing Democracies</th>
<th>Industrial Democracies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benin</td>
<td>Columbia</td>
<td>Australia</td>
</tr>
<tr>
<td>Burma</td>
<td>Costa Rica</td>
<td>Austria</td>
</tr>
<tr>
<td>Congo</td>
<td>Cyprus</td>
<td>Belgium</td>
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<tr>
<td>El Salvador</td>
<td>Greece</td>
<td>Canada</td>
</tr>
<tr>
<td>Guatemala</td>
<td>India</td>
<td>Denmark</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>Israel</td>
<td>Finland</td>
</tr>
<tr>
<td>Kenya</td>
<td>Malaysia</td>
<td>France</td>
</tr>
<tr>
<td>Liberia</td>
<td>Mexico</td>
<td>Ireland</td>
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<td>Mali</td>
<td>Panama</td>
<td>Italy</td>
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<td>Japan</td>
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<td>Sri Lanka</td>
<td>New Zealand</td>
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<td>Sweden</td>
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<td>United Kingdom</td>
<td>United States</td>
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<td>Zambia</td>
<td>United States</td>
<td>West Germany</td>
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## Appendix B. Sources of Data

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<th>Variable</th>
<th>Source</th>
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<td>Political Democracy</td>
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</tr>
<tr>
<td>%Union</td>
<td>Stephens (1979), Korpi (1983), and national yearbooks.</td>
</tr>
<tr>
<td>Union Centralization</td>
<td>Hicks and Swank (1984).</td>
</tr>
<tr>
<td>Corporatism</td>
<td>Wilensky (1976).</td>
</tr>
</tbody>
</table>

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Bollen, Kenneth A.  

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Cameron, David R.  

Castles, Francis G.  

Castles, Francis G. and R. D. McKinlay  

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Clark, Robert L. and Joseph J. Spengler  

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STATE STRUCTURES AND IDEOLOGICAL OUTCOMES*

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Approaches to the sociology of knowledge that posit a direct correspondence between the structure of social arrangements and the content of ideology are considered. Conceptual and methodological difficulties of these approaches are discussed, paying particular attention to a major study that has attempted to provide clear empirical support for the correspondence theory using systematic comparative-historical evidence. The paper re-examines the theoretical and empirical adequacy of Swanson's study of the Protestant Reformation and proposes an alternative perspective on the relation between state structures and ideological outcomes. A comparison of sixteenth-century England and France is presented which indicates that the structure of state power in each fails to conform to Swanson's characterization. The utility of taking a social structural approach that emphasizes the manner in which distributions of social resources affect the likelihood of ideological movements becoming institutionalized is suggested. In the case of the Reformation it appears that a decisive factor was the greater degree, than in France, of state autonomy relative to the landed nobility which had been attained in England by the start of the sixteenth century. Some implications of this argument for the study of ideology in other contexts are suggested.

Although historical sociology has attracted new interest in recent years, many of the theoretical assumptions on which sociological models of historical processes are constructed still remain tenuous. This is particularly the case in studies of the relationship between social structure and ideology. Research on this topic often suffers from being rooted in social psychological assumptions that are unconvincing or at best untestable with historical materials. These assumptions need to be re-examined in order for the historical sociology of ideology to advance. As a means to that end, the present paper re-examines a study that remains one of the most rigorous efforts to relate social structure and ideology in a historical setting—Guy E. Swanson's Religion and Regime (1967).

The purpose of this paper is to reconsider part of the evidence on which Swanson's theory is based in order to clarify the intervening theoretical links relating state structures to religious ideology. At a more general level, the paper's goal is to suggest an alternative to the way in which the relations between social conditions and ideology have

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