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ScienceDirect
Research in Social Stratification and Mobility 24 (2006) 153–175
Research in Social Stratification and Mobility
http://elsevier.com/locate/rssm

Structural theory and relative poverty in rich Western democracies, 1969–2000

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Received 20 July 2004; received in revised form 11 October 2004; accepted 24 February 2005

Abstract

This study assesses if structural theory explains the variation in poverty across rich Western democracies. With unbalanced panel analysis of 18 countries, two poverty measures and controlling for the welfare state and economic performance, I examine five structural factors: manufacturing employment, agricultural employment, female labor force participation, the elderly population, and children in single mother families. Manufacturing employment, female labor force participation, elderly population, and children in single mother families significantly influence the headcount measure of poverty, while agricultural employment is insignificant. By contrast, all five structural variables are insignificant for the interval measure of poverty. For the headcount, the structural variables have a more powerful influence than economic growth (the only significant indicator of economic performance) but a smaller influence than the welfare state. For the interval measure, the welfare state has a much larger influence than economic growth, and the insignificant structural and other economic variables. Counterfactual simulations are used to illustrate consequences of these effects for the U.S., Germany, and Sweden. Sensitivity analyses demonstrate the main conclusions hold regardless of the U.S. cases. Though structural variables influence one of the two poverty measures, the welfare state is most important to explaining poverty in rich Western democracies.

Keywords: Relative poverty; Structural theory; Western democracies; Welfare state; Income inequality

Cross-national and historical variation in poverty is profound. In the postindustrial era, substantial, even dramatic, differences exist across rich Western democracies and over recent decades. The U.S. persistently maintains nearly twice as much poverty as Canada and the U.K. Even more strikingly, the U.S. has poverty levels more than three times higher than many West European nations (Smeeding, Rainwater, & Burtless, 2001). Despite the very high levels of U.S. poverty, this is not simply a story of American exceptionalism. Substantial cross-national and historical variation among other rich Western democracies emerges as well. With one index, France's poverty declined from 7.3 in 1989 to 5.3 in 1994; Austria's poverty jumped from 3.5 in 1987 to 7 in 1995; poverty climbed from 5.7 to 8.2 between 1986 and 1991 in the U.K.; and between 1989 and 1994, Australian poverty rose from 8.1 to 10.2 (Brady, 2003a). To understand poverty in affluent societies, social scientists must explain these crucial cross-national and historical differences. What explains the comparative historical variation in poverty across rich Western democracies?

Confronting poverty, one explanation tends to receive the most support among sociologists. In general, sociologists have been persuaded by a structural theory of poverty. Structural theories have a long history in the social sciences, and have been tremendously influential in sociology at least since Wilson's (1987) *The truly*

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doi:10.1016/j.rssm.2005.02.004

disadvantaged. To my knowledge, however, no study has examined if structural theory accounts for variation in poverty across rich Western democracies. This study addresses this absence. Specifically, I evaluate five structural factors: manufacturing employment, agricultural employment, female labor-force participation, the elderly population, and children in single-mother families. Moreover, this study explicitly compares the impact of structural factors with two alternative causal sources: the welfare state and economic performance. Hence, this study provides a systematic evaluation of the structural theory of poverty.

1. Structural theories of poverty

Structural explanations contend that macro-level labor market and demographic conditions put people at risk of poverty, and cross-sectional and over time differences in these structural factors account for variation in poverty. Groups, cities and countries disproportionately impacted by structural factors tend to have more poverty.[1] Thus, structural theory is a compositional explanation: the more people in vulnerable demographic or labor market circumstances, the more poverty exists. In this sense, structure refers to the set of labor market opportunities and/or demographic propensities that characterize the population's likelihood of being poor.

Structural theories have received interest partly because of Wilson's (1987, 1996) influential work. Like most structural theories, Wilson showed how labor market and demographic factors disadvantage the urban poor. Of course, Wilson's model was not designed to explain comparative historical variation and more precisely focused on concentrated inner-city African-American poverty in the U.S. However, Wilson's work demonstrates the value of structural theory and provides a foundation to examining how structural factors affect poverty.

O'Connor (2001) shows that structural theories have actually been prominent for decades and originated at least in the 1960s (Clark, 1965; Myrdal, 1965; Ornati, 1966; Rainwater, 1969). For example, Galbraith (1998) challenged the "conventional wisdom" that the poor would benefit from economic growth, since the poor were marginalized in labor markets. Harrington (1981) contended that the poor lived in an invisible "Other America" that was "immune" to, and even displaced, by economic progress. Labor market segmentation theorists contend that the poor were stuck in secondary labor markets, and uniquely disadvantaged by the massive transitions like agriculture to industry to service, rural to urban to suburban, and Fordism to Post-Fordism (Gordon, 1972; Gordon, Edwards, & Reich, 1982). Contemporary structural accounts maintain these concerns. Historians document how structural factors shaped urban poverty in the 20th century U.S. (e.g. Sugrue, 1996). While explaining the local experiences of the poor, ethnographers often contextualize poverty within structural conditions (e.g. Anderson, 1990; Newman, 1999). In a related prolific literature, analysts demonstrate that structural factors shape income and earnings inequality (Harrison & Bluestone, 1988; Nielsen & Alderson, 1997).

Structural explanations are appealing, in part, because they unite demographics and labor markets in one sociological model. Such models oriented the sociological debate over poverty in the 1990s (Jencks & Peterson, 1991; O'Connor, Tilly, & Bobo, 2001; Small & Newman, 2001; Wilson, 1993). Tomaskovic-Devey (1991) finds support for a structural model of poverty in a panel of U.S. counties (also Eggers & Massey, 1991,1992). McFate, Lawson, & Wilson's (1995) collection illustrates how structural factors are affecting poverty across advanced democracies. Even the welfare state theorist Esping-Andersen (1999) claims that postindustrial structural changes produce novel social risks that welfare states were not built to manage. Such research directs attention to five structural factors: manufacturing employment, agricultural employment, female labor-force participation, the elderly population and children in single-mother families.[2] This study follows research on macro-level variation in inequality (Alderson & Nielsen, 2002). Given that, and since readers often consider rela-

[1] Of course, there might not be any *one* structural theory of poverty. Structural theories have always been a diverse set of claims with a shared orientation to demographics and labor markets (O'Connor, 2001). I conceive of structural theory as a set of macro-level, population-wide, labor market and demographic factors that put people at risk of poverty. Also, I distinguish between these structural factors, the welfare state and economic performance. To be clear, I am referring to structural theory in poverty research (O'Connor, 2001), and I do not mean to represent the entire variety of "structural" explanations in sociology.

[2] Obviously, I am excluding one important structural factor: *immigration*. Unfortunately, valid and reliable data on immigration are not consistently available. The OECD provides data on variables like the percent of the population foreign born, but this data are not available before the 1980s and are spotty for many nations. Alderson and Nielsen (2002) and Moller et al. (2003) analyze "net migration"—the difference of population, birth and death estimates in the current and past year. However, it may be problematic that the population, birth and death estimates are actually based themselves on estimates of migration. As well, Moller et al. (2003) find net migration does not significantly affect poverty before taxes and transfers.

tive poverty and inequality similar phenomena, this study builds on the literatures on structural factors and both poverty and income inequality.

1.1. Manufacturing employment

Bluestone and Harrison (1982) defined deindustrialization as the widespread, systematic, disinvestment in a nation's core manufacturing industries. While many debate its causes (Alderson, 1999; Grant & Wallace, 1994), Bluestone and Harrison were equally concerned with deindustrialization's consequences. Scholars have shown that deindustrialization contributed to a restructuring of labor relations and increased inequality—"The Great U-Turn" (Alderson & Nielsen, 2002; Bluestone & Harrison, 2000; Gottschalk & Joyce, 1995; Gustafsson & Johansson, 1999; Harrison & Bluestone, 1988; Lorence & Nelson, 1993; Nielsen & Alderson, 1997). Chevan and Stokes (2000) find that deindustrialization was the largest cause of increased inequality in the U.S. Still, others conclude that the relationship between deindustrialization and inequality remains unclear (McCall, 2001; Morris & Western, 1999, p. 637).

The focus on inequality partly overshadows the connection between manufacturing and poverty—one Bluestone and Harrison (1982, p. 76) recognized. Because manufacturing provides secure, well-paid jobs, the less-skilled poor are especially vulnerable to deindustrialization. Wilson's (1987, 1993, 1996) research on inner-city poverty highlighted the role manufacturing jobs played for African-American men, and how the disappearance of that work disadvantaged poor neighborhoods. Subsequent scholarship suggests that deindustrialization in the U.S. increased poverty in cities, for less-skilled workers and families (Brady & Wallace, 2001; Eggers & Massey, 1991,1992; Kasarda, 1993; Nelson, Schwirian, & Schwirian, 1998; Quillian, 2003; Tomaskovic-Devey, 1991). Nevertheless, some doubt manufacturing's impact (Williams, 1991). For example, Jargowsky (1997) argues that deindustrialization did not influence the concentration of poverty in U.S. cities.[3]

[3] In his award-winning book, Jargowsky (1997, p. 122) writes, "All things considered, the early emphasis of researchers on manufacturing may have been misplaced. There is, at best, only modest evidence to support the notion that the shift from manufacturing to services is important to the overall poverty rate of blacks, and almost no direct evidence that it contributes to the growth of poor neighborhoods. On the other hand, there is some evidence that sectoral shifts may have had a disproportionate impact on the less-well educated, so the possible impact of deindustrialization on the growth of ghettos and barrios cannot be entirely dismissed."

1.2. Agricultural employment

Kuznets (1953) theorized that inequality would decline with development as labor shifted from the more equal agricultural sector to the relatively more unequal modern, urban and industrial sectors. Across developing and developed societies, agricultural employment reduces inequality (Nielsen, 1994; Nielsen & Alderson, 1995). Recently, however, research has produced differing results (Nielsen & Alderson, 1997; Robinson, 1984). Alderson and Nielsen (2002) argue that in the postindustrial era, inequality is actually higher in the agricultural sector. Reflecting its traditional social structure, agricultural employment increases inequality. In fact, Alderson and Nielsen (2002) find agricultural employment is the strongest determinant of income inequality.[4]

In his pioneering work, Harrington described the plight of migrant and seasonal farm workers writing, "Perhaps the harshest and most bitter poverty in the United States is to be found in the fields" (1981, p. 41). Some research examines the connection between agricultural employment and poverty and inequality in the rural U.S. (Billings & Blee, 2000; Lassley, Larry Leistritz, Lobao, & Meyer 1995; Lobao & Meyer, 2001; Lobao & Schulman, 1991; Tickmayer & Duncan, 1990). For example, Duncan (1999) contends that rural U.S. poverty has declined for several decades because of the decay of an exploitative farm labor system. Given this work on inequality, agricultural employment may significantly increase poverty as well.

1.3. Female labor-force participation

Some studies conclude that female labor force participation increases inequality (Alderson & Nielsen, 2002; Gustafsson & Johansson, 1999). These authors suggest that female labor force participation inflates the bottom of the earnings distribution, amplifies the relative advantage of high-income households, and indirectly links to rising single motherhood.[5] These conclusions, how-

[4] Based on an unbalanced panel analysis of 16 OECD nations, they find that agricultural employment's standardized coefficient (.88) is twice as large as the next most important variable union density (−.44), more than four times as large as decommodification (−.20), and nearly fourteen times as large as female labor force participation (.064). Manufacturing employment, by contrast, is not even statistically significant in the final models.

[5] At the time of Alderson and Nielsen's (2002) analysis, data were not available on single mother households: "[T]his finding is open to alternative interpretations. For instance, data limitations preclude us from controlling for changes in household structure. Perhaps

ever, contrast with research on rising inequality in the U.S. Nielsen and Alderson (1997) find that female labor force participation reduced income inequality across U.S. counties in 1980 and 1990 (Cancian, Danziger, & Gottschalk, 1993). In contrast, others remain skeptical that female labor force participation has more than modest effects (Morris & Western, 1999, p. 630).

Poverty researchers broadly conclude that female labor force participation reduces poverty (Bianchi, 1999; Blank, 1997; Christopher, England, Smeeding, & Ross, 2002). Studies variously show that female employment helped women exit welfare and escape poverty (Harris, 1996); decreased poverty and inequality for U.S. Latinos (Santiago & Wilder, 1991); and reduced child poverty (Eggebeen & Lichter, 1991). Therefore, it is plausible that female labor force participation influences comparative historical variation in poverty (Gornick, Meyers, & Ross, 1998). Given the somewhat conflicted literature, however, the nature of the effect remains unclear.

1.4. The elderly population

Several analysts posit the increasing elderly population as a demographic source of inequality (Hedstrom & Ringen, 1990; Nielsen & Alderson, 1997). O'Rand and Henretta (1999) document the increasingly high inequality within the elderly, and high inequality between the working-age and elderly populations. By contrast, Gustafsson and Johansson (1999) find that the size of the elderly population does not affect comparative historical variation in inequality.

Structuralists have long been concerned with elderly poverty in the U.S. (Harrington, 1981; Newman, 2003). However, recent debates have been dominated by the perception that the elderly have become much less likely to be officially poor or experience economic hardship—especially in comparison to children (Bianchi, 1999; Blank, 1997; Mirowsky & Ross, 1999; Preston, 1984). Others challenge these claims by critiquing the measurement of official poverty and elderly economic hardship (Brady, 2004; Burtless & Smeeding, 2001; Citro & Michael, 1995; Hardy & Hazelrig, 1999; Jencks & Torrey, 1988). Some scholars highlight the feminization of poverty in late life (O'Rand & Henretta, 1999). Many studies show that the elderly, like children, are actually disproportionately vulnerable to poverty (Brady, 2004; Smeeding et al., 2001). Finally, it remains unclear if large elderly populations contribute to poverty once one considers how much the welfare state diminishes poverty over the life course (Esping-Andersen, 1999; O'Rand & Henretta, 1999).

1.5. Children in single-mother families

Probably the most studied structural cause is single motherhood. Studies show single motherhood contributed to the rise in inequality in the U.S. (Lichter & Eggebeen, 1993; Nielsen & Alderson, 1997). Most agree that U.S. single mother families are more likely to be poor, and this contributes to trends in poverty (Bianchi, 1999; Blank, 1997; Cancian & Reed, 2001; Eggebeen and Lichter, 1991; Lichter, Graefe, & Brown, 1993; Thomas & Sawhill, 2002; Wu & Wolfe, 2001). Indeed, single motherhood has always featured prominently in structural accounts (Anderson, 1990; Eggers & Massey, 1991, 1992; Newman, 2005; Small & Newman, 2001; Wilson, 1987, 1993, 1996). For example, female-headed households increase poverty in U.S. cities and counties (Eggers & Massey, 1991, 1992; Tomaskovic-Devey, 1991).

Several cross-national studies suggest that single-motherhood contributes to poverty, especially for women and children (Casper, McLanahan, & Garfinkel, 1994; Kamerman, 1995; McFate et al., 1995; Rose, 1995). Christopher et al. (2002, p. 219) conclude, "Single mother families have higher poverty rates than other families in all [8] nations except Sweden." At the same time, however, cross-national variation in single motherhood does not clearly correspond to variation in poverty (Kiernan, 2001; Lichter, 1997; Moller, Bradley, Huber, Nielsen, & Stephens, 2003; Sorensen, 1994, 1999). Possibly, single motherhood might not explain poverty, but rather, what explains poverty is how much welfare states ensure the economic security of single mother families (Christopher et al., 2002; Esping-Andersen, 1999; Gustafsson, 1995; Kamerman, 1995; Lefaucheur, 1995; McLanahan & Garfinkel, 1995). Further, other structural factors may offset the effect of single motherhood, and studies should control for these to guard against a potentially spurious association.

2. Concerns in evaluating structural theory

This study builds on past research in this area. Moreover, this study addresses three limitations of past research. First, I expand the cross-national and historical scope of inquiry. Second, I consider two alternative explanations to structural theory. Third, I scrutinize

the effect of female labor force participation has been confounded by its association with the growth of female-headed households" (1281–1282).

poverty measurement, and utilize more valid and reliable measures of poverty.

2.1. Cross-national and historical scope

Most research in this area focuses on the U.S. Brady (2003a) finds that only 7.6% of quantitative sociological poverty studies examine countries besides the U.S. This starkly contrasts with the extensive cross-national research on inequality, and neglects the substantial cross-national variation in poverty. Research exclusively based on the U.S. is not representative of and might not generalize to other affluent democracies. Smeeding et al. (2001, p. 162) argue that U.S. poverty research "rests on an inherently parochial foundation, for it is based on the experiences of only one nation." In order to understand why poverty varies across countries and over time, it is essential to analyze a distribution of countries and time periods. Compared to other nations, the U.S. has had almost no variation in poverty. For several decades, the U.S. has by far the most poverty (Brady, 2003a; Smeeding et al., 2001). Further, the U.S. is anomalous since it is the richest country in the world and maintains the least generous welfare state of any industrialized democracy. Unfortunately, extant research has not systematically examined if structural theory can explain the comparative historical variation in poverty across rich Western democracies.[6]

2.2. Alternative causal explanations

Within U.S. poverty research and policy, the dominant explanation of poverty remains liberal economics (Brady, 2003b; Gordon, 1972; O'Connor, 2001). Liberal economics contends that poverty mainly depends on economic performance: economic growth, productivity, and unemployment (Ellwood & Summers, 1986; Freeman, 2001). To reduce poverty, nations should increase economic growth, raise productivity through human capital, and diminish unemployment. Blank (2000, pp. 6, 10) asserts, "A strong macroeconomy matters more than anything else," and "the first and most important lesson for anti-poverty warriors from the 1990s is that sustained economic growth is a wonderful thing."[7] With economic growth, the best anti-poverty strategy is to reduce unemployment and foster job opportunities for the poor (O'Connor, 2001, p. 143; Tobin, 1994). Haveman and Schwabish (1999, p. 18) conclude, "Strong economic growth and high employment may again be the nation's most effective antipoverty policy instrument." Moreover, unemployment is routinely identified as the most important poverty issue in Western Europe (Gallie & Paugam, 2000; Hauser, Nolan, Morsdorf, & Strengmann-Kuhn, 2000). In contrast, structural factors are expected to play only a cursory role in explaining poverty (Williams, 1991). Economic growth, productivity, and unemployment are the main determinants of poverty, and structural factors are considered much less significant.

Recently, scholars have provided evidence for a political-institutional explanation, where comparative differences in welfare states and Leftist political institutions explain poverty (Brady, 2003c, 2005). Variation in poverty is a product of how much states redistribute income, and transfer economic resources to the poor (Jantti & Danziger, 2000). Many studies show that when U.S. social policies expanded, official poverty declined (Blank, 1997; Burtless & Smeeding, 2001; DeFina & Thanawala, 2001; Page & Simmons, 2000). In a cross-section of rich democracies, welfare state generosity is associated with less poverty (Kenworthy, 1999; Korpi & Palme, 1998; Smeeding et al., 2001). Extending this work, the welfare state is the main influence on both comparative and historical variation in poverty (Brady, 2005; Hanratty & Blank, 1992; Moller et al., 2003). This explanation emphasizes that variation in poverty is ultimately due to variation in welfare state generosity and its origins in leftist politics (Brady, 2003c). Ultimately, democratic states decide to what extent welfare programs will offset structural factors. It is a political question if egalitarianism is institutionalized regardless of the extent to which people are vulnerable because of demographic or labor market changes.

[6] Of course, others analyze poverty across nations. However, most macro-level comparisons involve a cross-section of nations at only one point in time (Kenworthy, 1999; Korpi & Palme, 1998), while micro-level analyses often examine individuals across nations at one or a few time points (Christopher et al., 2002). By contrast, relatively few studies analyze many nations with several time points. Recently, Moller et al. (2003) analyzed poverty among 25–59 years old in 61 cases across 14 nations (1970–1997). The present study includes 92 observations across 18 nations (1969–2000).

[7] As a highly visible poverty scholar, the 2000 piece is a noteworthy change from Blank's recent arguments. Three years prior, she recognized the impact of structural changes and argued, "Economic growth is not likely to be effective in the near future in reducing poverty" (1997, p. 221); "Poverty is harder to address through broad-based economic growth policies now than thirty years ago" (p. 222); "Changes in the jobs available to less-skilled workers have made those jobs less effective in helping people escape poverty" (p. 222); and "The rising share of single parents among the poor means that employment alone will not be as effective in reducing poverty" (p. 222).

2.3. The measurement of poverty

Past structural accounts mainly focused on official U.S. poverty (Eggers & Massey, 1991, 1992; Tomaskovic-Devey, 1991). The official measure has well-documented reliability and validity weaknesses that raise questions about this research (Brady, 2003a; Citro & Michael, 1995; DeFina & Thanawala, 2001; O'Connor, 2001). Therefore, conclusions based on research with this measure warrant scrutiny. Building on recent advances, Brady (2003a) synthesized five criteria for more valid and reliable measures of poverty: (a) measure comparative historical variation effectively; (b) be relative rather than absolute; (c) conceptualize poverty as social exclusion; (d) integrate the depth of poverty and the inequality among the poor; and (e) assess the impact of taxes, transfers and state benefits. This study adheres to these criteria and I now review the justification for three of the more controversial criteria.

First, international poverty researchers prefer relative measures for industrialized democracies, and are highly skeptical of absolute measures (Brady, 2003a; Rainwater & Smeeding, 2004; Smeeding et al., 2001). Of course, absolute measures can assess basic well-being, but such measures unrealistically set the line so low that only a tiny population would be defined as poor (Harrington, 1981) and neglect that poverty and well-being are distinct phenomena. As Sen (1992, p. 110) explains, "Poverty is not a matter of low well-being, but the inability to pursue well-being precisely because of the lack of economic means." Relative measures conceptualize poverty as capability deprivation and social exclusion (Sen, 1999; Silver, 1994). This is consistent with most structural theorists' conceptualizations of poverty: Wilson's (1991) concept of social dislocation; Harrington's (1981, p. 11) concern that "the poor are losing their links with the greater world;" and Galbraith's (1998, p. 235) notion of falling behind community-standards of decency and acceptability.[8] If poverty is conceptualized consistent with structural theory as capability deprivation and social exclusion, relative measures are more valid and reliable (Atkinson, 1987; Brady, 2003a; Sen, 1999).

Second, the depth of poverty should be incorporated. Much poverty research utilizes simple headcount measures, for example, 50% of the median income (Smeeding et al., 2001; Moller et al., 2003). These justifiably operationalize poverty relatively, usually define household income comprehensively, and effectively describe the percent of the population that is poor. Certainly, it remains valuable to analyze headcounts. However, headcount measures problematically treat all poor people as equal regardless of their distance from the threshold (Atkinson, 1987; Blank, 1997, p. 139; Myles & Picot, 2000; Sen, 1976). This may neglect the intensity of poverty and homogenize the poor (Osberg & Xu, 2000). Hence, it would be valuable to supplement analyses of headcounts with measures that incorporate the depth of poverty of the average poor household.

Third, this study concentrates on poverty after taxes and transfers (state mediated, SM). Many scholars examine (market generated, MG) poverty before taxes and transfers (Moller et al., 2003); compare MG and SM poverty (Brady, 2003b, 2003c; Christopher et al., 2002); and, compute poverty reduction from MG and SM poverty (Brady, 2005; Hicks & Kenworthy, 2003; Moller et al., 2003). Despite the utility of these measures, there are limitations to MG poverty (see Brady, 2005). While MG poverty is useful when examining individual adults, it makes less sense when including the elderly in your sample—since the elderly often have little income before taxes and transfers in many countries. Moreover, if structural factors truly are consequential, they should have an impact even after considering taxes and transfers. After all, no household really exists in a pretax and pretransfer world and taxes and transfers fundamentally shape the income distribution.[9] Some readers might be concerned that structural factors indirectly affect SM poverty through MG poverty. For example, if increasing elderly populations raise MG poverty, and MG poverty increases SM poverty, this would be a non-trivial indirect effect. Others might claim poverty reduction measures are most useful. Crucially, however, MG and SM poverty are simply not empirically associated in any way that suggests

[8] Galbraith (1998, p. 235) writes, "People are poverty-stricken when their income, even if adequate for survival, falls radically behind that of the community. Then they cannot have what the larger community regards as the minimum necessary for decency; and they cannot wholly escape, therefore, the judgment of the larger community that they are indecent. They are degraded for, in the literal sense, they live outside the grades or categories which the community regards as acceptable."

[9] This study's concentration on SM poverty is partly motivated by its neglect in past studies. Recently, Moller et al. (2003) evaluated how agricultural employment, industrial employment, female labor force participation, and children in single mother families affect poverty among 25–59 years old. Despite their contributions, they examined poverty before taxes and transfers (market generated, MG) and poverty reduction, and did not analyze SM poverty. Moreover, they include agricultural employment, industrial employment, and female labor force participation as predictors of MG poverty, but those variables are not included in the poverty reduction models. The only structural factor included for poverty reduction was single mother families, and it was not significant.

potential indirect effects through MG poverty (Brady, 2005).[10] Coupled with its greater validity and reliability, the essential cross-national and historical variation occurs in SM poverty. In turn, this study concentrates on SM poverty.

3. Models, data and measures

To evaluate structural theory, I follow recent research on inequality (Alderson & Nielsen, 2002) and poverty (Brady, 2003b, 2003c, 2004, 2005). I utilize an unbalanced panel design where the unit of analysis is a country-year. Because of the availability of the dependent variable, cases are unevenly distributed across 18 countries (*N*s) and 29 years (*T*s). Due to unobserved time-invariant cross-national heterogeneity, ordinary least squares (OLS) regression is inappropriate (Hsiao, 2003). Using STATA, I analyzed models with several techniques. For theoretical and methodological reasons, I present random effects (RE) models. First, the RE model better facilitates estimating the effects of the independent variables on the dependent variables when *both* cross-national and historical variation are essential (Beck, 2001; Beck & Katz, 1996; Greene, 1990, p. 495).[11] It is valuable to understand why some nations have more or less poverty, and why poverty increases or decreases over time. In fact, the standard deviations between nations are much larger than within nations for most variables. Further, the number of countries (18 *N*s) far exceeds the average number of time points (4.33 *T*s). As a result, the cross-national (between) variation is arguably more important than the historical (within) variation. Second, statistical tests accept RE models. Recently, methodologists have demonstrated that the Bayesian Information Criterion (BIC′) can be used to select between these techniques (Beck & Katz, 2001, p. 492; Teachman, Duncan, Yeung, & Levy, 2001). BIC′ very strongly prefers RE over FE models. Hausman's (1978) Chi-square test accepts RE and does not require FE models. Third, according to the econometric literature, in small and unbalanced samples with more *N*s than *T*s, RE models perform better than alternatives (Beck, 2001; Bhargava & Sargan, 1983; Greene, 1990, pp. 493, 495; Hsiao, 2003). By contrast, the alternatives are often problematic in small and unbalanced samples, especially when the *N* far exceeds the *T*s.[12] Finally, I have estimated all models with four alternative techniques: between effects, fixed effects, OLS with panel-corrected standard errors, and OLS with robust clustered errors. These alternatives yield the same conclusions as RE models and are available on request.[13]

With statistical significance and basic fit statistics, the Bayesian Information Criterion Prime (BIC′) assists model selection. BIC′ selects the more parsimonious model unless model fit is significantly enhanced (Raftery, 1995). Specifically, the greater negative value

[10] The bivariate correlation is insignificant, and surprisingly, negative (−.17). Thus, a structural equation model could not produce the example indirect effects. If the elderly population increased MG poverty, this would produce a negative indirect effect. In a random effects model, MG poverty is only weakly associated with SM poverty. So, variables are unlikely to have an indirect effect through MG poverty, since MG poverty does not really affect SM poverty.

[11] Fixed effects (FE) models allow the independent variables to explain the historical variation *within* nations while removing the variation between nations. FE models perform OLS after including nation-specific constant terms and subtracting all variables from their nation-specific means (Alderson & Nielsen, 1999; Hsiao, 2003). Between-effects (BE) models allow the independent variables to explain the between nation variation while removing the variation within nations. BE models pool the values for each variable by country to calculate nation-specific means, and then estimate the variation across those nation-specific means. The RE model is the matrix weighted average of the within- (FE) and between-nations (BE) estimators (Greene, 1990, p. 488; Hsiao, 2003). RE models include a country-specific error term in addition to the general error term and, subtract a smaller portion of the nation-specific means. Last, cross-national differences in poverty and the independent variables are not constant over time, but relative stability exists in the cross-national ranking of nations for many of these variables—hence, FE models effectively mask this crucial variation (see Beck & Katz, 2001, p. 492). As Beck and Katz (2001, p. 487) explain, "Fixed effects are problematic in the presence of [the] temporally stable regressors." Further, understanding historical trends in poverty is essential as well, and unfortunately, BE models would mask this essential within-nation variation.

[12] FE models consume a degree of freedom for every *N*. In this analysis, with 92 cases and 18 *N*s (average of 5.1 *T*s), FE models are inefficient (Beck & Katz, 2001; Greene, 1990; Hsiao, 2003, p. 42). Nickell (1981) also shows that FE models may produce biased estimates when *N* far exceeds *T*. Population average (PA) models are problematic in small samples since they are a maximum likelihood estimator, which are designed for much larger samples. Another alternative is to use techniques with heteroscedasticity consistent standard errors, for example OLS with robust clustered errors (Moller et al., 2003). However, Long and Ervin (2000) show that this popular Huber–White Sandwich estimator (HC0) produces incorrect inferences in samples with less than 250 cases. The alternative HC3, which works well even in samples as small as 25, does not allow for the clustering of errors within countries—the principal reason for using HC0 with this kind of data. Finally, Beck (2001) emphasizes that OLS with panel corrected standard errors should not be used when there are less than 10 or 15 *T*s. Importantly, Beck (2001) draws a sharp distinction between time-series-cross-section data with more *T*s than *N*s, and panel data with more *N*s than *T*s. Beck (p. 274) explains, "Panel methods [e.g. RE] are designed for and work well with very small *T*s (three, or perhaps even two)."

[13] Initially, I included these analyses in appendices. Reviewers suggested that I remove the appendices and only make the analyses available upon request.

Table 1
Descriptive statistics and sources for variables: means and standard deviations in parentheses

	18 Nations ($N = 92$)	17 Nations ($N = 85$)	Sources
Dependent variable			
LIS headcount poverty	9.434 (3.692)	8.814 (3.100)	Luxembourg Income Study, www.lisproject.org, "Key Figures"
Interval poverty	6.540 (2.406)	6.085 (1.874)	Luxembourg Income Study, www.lisproject.org; Brady (2003a, 2003b)
Structural change			
Manufacturing employment	27.692 (5.692)	27.924 (5.797)	OECD Labor Force Statistics, various years
Agricultural employment	5.060 (2.656)	5.237 (2.685)	OECD Labor Force Statistics, various years
Female labor force participation	58.622 (10.450)	58.092 (10.543)	OECD Labor Force Statistics, various years
Elderly population	13.413 (2.137)	14.032 (2.118)	OECD Labor Force Statistics, various years
Children in single mother families	2.139 (1.018)	1.937 (.791)	Luxembourg Income Study; OECD Labor Force Statistics
Welfare state			
Social security transfers	15.208 (4.293)	15.521 (4.306)	OECD Labor Force Statistics, various years
Public health spending	75.454 (12.299)	78.179 (8.049)	OECD-Eco Sante Health CD-Rom, 2003
Economic performance			
Economic growth	2.558 (2.725)	2.525 (2.815)	OECD-Eco Sante Health CD-Rom, 2003
Productivity	48005.250 (8490.386)	47222.680 (8326.744)	OECD Labor Force Statistics, various years
Unemployment	7.056 (3.495)	7.166 (3.605)	OECD Main Economic Indicators, various years
U.S. dummy	.076 (.267)		

of BIC′ is preferred. A BIC′ difference of 0–2 offers weak evidence for model selection, 2–6 offers positive evidence, 6–10 offers strong evidence, and greater than 10 offers very strong evidence.

Table provides descriptive statistics and sources for the variables. In the sensitivity analyses, I remove the U.S. In turn, I provide descriptive statistics for 18 nations and the sub-sample of 17 nations. Data for several variables are proximately from Huber, Stephens, Ragin, Brady, and Beckfield (2004). For this study, Spain and Luxembourg were added. Appendix A displays a correlation matrix (Table 1).

3.1. Dependent variables

The Luxembourg Income Study (LIS) provides the data on poverty. The LIS provides cross-nationally and historically comparable individual-level, nationally representative data sets. Cumulatively, LIS provides almost standardized data on household income with similar variables, similar samples and equal weights, which allow for population estimates. I utilize two measures of poverty. Both are relative SM measures based on all income and near-income after taxes and transfers (the LIS variable DPI). Using the datasets on 18 rich Western democracies generates an unbalanced sample of 92 cases.[14]

The first of my two measures is the official LIS headcount (H) of the percent of the population that resides in households with less than 50% of the median income. The second measure is an updated version of Brady's

[14] This dataset include observations for Australia (4), Austria (4), Belgium (4), Canada (8), Denmark (2), Finland (4), France (5), Germany (8), Ireland (4), Italy (8), Luxembourg (5), Netherlands (5), Norway (5), Spain (2), Sweden (6), Switzerland (2), U.K. (8), and U.S. (7). These represent the LIS datasets on these countries in September 2004. A list of the years of the datasets is available at www.lisproject.org.

(2003a) estimates of interval (*HI*) poverty.[15] Interval poverty (also called poverty intensity) is the product of *H* and *I*, where *I* is the average depth of poverty (the difference between the median in the sample and the mean of the poor sub-sample, standardized by the median in the sample). Hence, *HI* is not a rate, but synthesizes the rate and depth of poverty into one index.

3.2. Structural variables

This study evaluates five structural variables measured in the current year.[16] The operationalizations of these variables follow past research (Alderson & Nielsen, 2002; Moller et al., 2003). First, I measure *Manufacturing Employment* as industrial employees as a percentage of the labor force. Second, I include *agricultural employment* as a percentage of the labor force.[17] Third, *female labor force participation* is measured as the female labor force as a percent of the female population between 15 and 64 years old. Fourth, the *elderly population* is measured as the percentage of the population that is 65 years old and over.

Fifth, I include *children in single mother families* as a percent of the population. The LIS estimates the percent of children in single mother families. I multiplied these estimates by the percentage of the population children.[18] Because this standardization harmonizes this variable's denominator with denominators of the dependent variable and the other structural variables, this measurement has several advantages.[19] To verify that this decision was not producing inaccurate results, I estimated all models while using the LIS estimates instead. The conclusions would be consistent, and my measure has larger and more significant coefficients than the LIS measure in all models. Thus, I chose to proceed with my measure since it may improve upon the LIS estimates and allow the single motherhood variable the best opportunity to explain variation in poverty.

3.3. Welfare state variables

Following recent research (Brady, 2003c, 2005; Huber & Stephens, 2001; Moller et al., 2003), the analyses contain two measures of the welfare state measured currently. First, *social security transfers* as a percent of GDP includes state transfers for sickness, old age pensions, family allowances, unemployment and workers' compensation and other assistance. Second, *public health spending* as a percent of total health spending summarizes all public spending on healthcare, medicine, and public health including transfers, in-kind benefits and services. These two collectively measure state transfers and services designed to reduce poverty and redistribute income. Brady (2005) shows that these two variables reasonably gauge variation in welfare state generosity and are the most influential welfare state indicators on poverty; and explains the causal mechanisms that account for their effects on poverty.

3.4. Economic performance variables

Following Brady (2003b), the analysis includes three measures of economic performance. First, I measure *economic growth* as the 5-year average (*t*, *t*-1, *t*-2, *t*-3, *t*-4) of the annual rate of change in gross domestic product (GDP) of purchasing power parity (PPP) dollars. The GDP PPP data offer highly comparable assessments of economic output. In Appendix B, I present alternative economic growth results with different temporal operationalizations and with national currency units (NCU) instead of PPP. These results unequivocally prefer PPP to NCU, and suggest the 5-year moving average is a reasonable choice (see also Brady, 2003b). Second, I measure

[15] Brady's equivalence scale standardizes income by household size by weighting the household head as one, additional adults as .5, and children as .3. The LIS equivalence scale standardizes income by the square root of household size.

[16] Some stratification researchers are more interested in changes rather than levels of structural variables. This study follows recent research on inequality that analyzes levels (Alderson & Nielsen, 2002). In analyses available upon request, I measured the structural variables as lagged values, moving averages, rates of change, and long-term changes. These alternatives produce consistent conclusions, but with smaller and less significant coefficients. The strongest effects were with the current values.

[17] Alderson and Nielsen (2002) log agricultural employment. In analyses available upon request, I reestimated all models below with this variable logged. Logging this variable does not make a difference in any of the models. The logged variable would never be close to significant in any model.

[18] I calculated the percentage of the population children from OECD data on the number of children and the total population. The OECD data are actually the number of children under 15. This is somewhat problematic since the LIS rates of children in single mother families are based on children under 18. Unfortunately, however, high quality data on the population under 18 are not available. Most likely, the generated measurement error is not very damaging since this variable only excludes 15, 16, and 17 years old.

[19] First, as I show in Table 2, my measure is very highly associated with the original LIS estimates. Second, as I also show in Table 2, my measure is more strongly correlated with the two poverty dependent variables than the LIS estimates. Third, using the LIS estimates may create greater collinearity problems in the models, since the LIS estimates are more correlated with female labor force participation than my measure ($r = .7$ versus $r = .6$).

Table 2
Descriptive patterns across 18 rich democracies in most recent Luxembourg Income Study data

	Year	LIS headcount poverty	Interval Poverty	% of children in single mother families	Children in single mother families as % of population
Australia	1994	14.3	10.210	10.6	2.292
Austria	1997	8.0	4.927	12.7	2.192
Belgium	1997	8.0	5.020	8.9	1.581
Canada	2000	11.4	7.490	13.1	2.502
Denmark	1992	7.2	5.738	14.4	2.448
Finland	2000	5.4	3.325	12.8	2.325
France	1994	8.0	5.299	9.3	1.832
Germany	2000	8.3	5.970	12.5	1.952
Ireland	1996	12.3	6.235	10.3	2.428
Italy	2000	12.7	8.391	4.9	.705
Luxembourg	2000	6.0	3.080	6.7	1.270
Netherlands	1999	7.3	6.051	8.1	1.501
Norway	2000	6.4	4.891	14.5	2.903
Spain	1990	10.1	6.017	4.9	.973
Sweden	2000	6.5	5.215	17.8	3.280
Switzerland	1992	9.3	8.110	8.9	1.543
United Kingdom	1999	12.5	7.480	21.7	4.188
United States	2000	17.0	12.1735	19.5	4.166
Correlation with interval poverty ($N=92$)		.902		.400	.506
Correlation with % of children in single mother families ($N=92$)					.964

productivity as GDP in PPP per civilian employee utilizing comparable data on labor force participation. This measure, which is lagged 1 year, proxies the level of economic development and human capital.[20] Third, I measure *unemployment* in the current year with standardized unemployment rates that permit cross-national and historical comparison of the percent of the labor force unemployed. Brady (2003b) has shown that the results of these economic variables are robust if each indicator is included individually or with any combination of the other two, or if the economic variables are included with no other independent variables.

4. Results

4.1. Descriptive patterns

Before proceeding to the analyses, I describe the patterns in the dependent variable and structural variables. For the 18 nations in the most recent LIS data, Table 2 displays the two dependent variables, the percent of children in single mother families, and children in single mother families as a percent of the population. The fourth column provides one of the structural variables. The two dependent variables are highly correlated with each other ($r=.90$). My children in single mother families variable is very highly correlated with the percent of children in single mother families ($r=.96$) and is even more strongly correlated with the two poverty measures. Also, the coefficients of variation are comparable across both single motherhood measures (not shown). Hence, my operationalization appears to be justifiable.

The U.S. and Australia have the most poverty, while Finland and Luxembourg have the least. Interesting

[20] I acknowledge productivity is not a perfect proxy for human capital. Unfortunately, valid and reliable data on educational attainment are simply not available. The OECD's *Education at a Glance* provides measures like the percentage of adults with secondary degrees. Unfortunately, however, these data are not nearly sufficiently available. Second, others use secondary school *enrollment* instead of attainment, but this might not be a valid and reliable proxy—and it is an insignificant predictor of adult poverty (Moller et al., 2003; also Alderson & Nielsen, 2002). Third, the main reason education would reduce poverty is indirectly it would be expected to raise productivity by increasing human capital. So, productivity may proxy the *effect* of attainment. Finally, extant LIS research provides little evidence that educational attainment explains inequality—if it has any effect, it might increase earnings inequality (Sullivan & Smeeding, 1997). The level of economic development can also be measured with GDP per capita. GDP per employee is highly correlated and GDP per capita, and productivity is slightly more correlated with poverty. In analyses available upon request, I substituted GDP per capita for productivity and the conclusions are identical (with or without economic growth in the model).

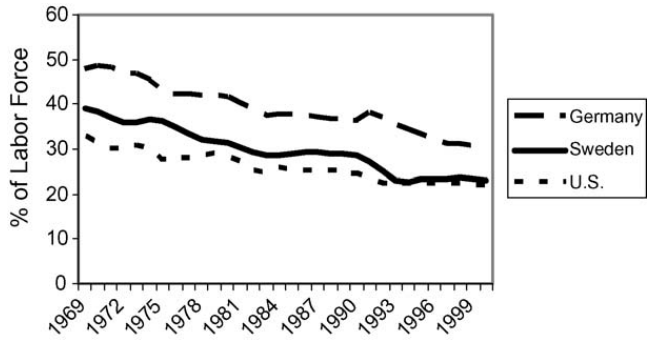

Fig. 1. Trends in manufacturing employment: Germany, Sweden, and the U.S., 1969–2000.

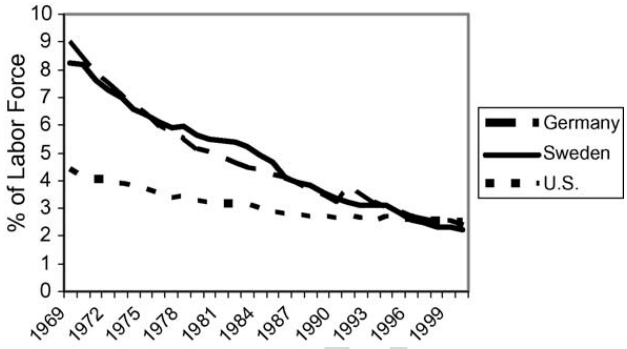

Fig. 2. Trends in agricultural employment: Germany, Sweden, and the U.S., 1969–2000.

variation in single motherhood exists. In a surprising new development, the U.K. has the highest levels for both measures (21.7 and 4.19). In the mid-1990s, the U.S. still had the most single motherhood, and this was the case in every previous cross-section of LIS data. For the first time, in this most recent LIS data, the U.K. has overtaken the U.S. with the most single motherhood across the affluent democracies. By contrast, Spain (1990) and Italy have the lowest levels of single motherhood by a sizable margin.

On the surface, the correlations between the single motherhood and poverty measures suggest a strong association. Also, since the U.S. has consistently had the most poverty and had one of the highest (until now the highest) levels of single motherhood, this structural variable has commonly been considered a source of variation in poverty. However, the relationship is simply not that clear. The U.K. has more single parenthood, and the Scandinavian countries (Denmark, Finland, Norway and Sweden) all maintain noticeably high rates. But, these countries have considerably less poverty than the U.S. While many countries have very low rates of single motherhood, several of them (e.g. Italy, Spain, Netherlands) have higher poverty than countries with high rates of single motherhood. Though the single motherhood variables are positively correlated with the poverty measures, the relationship is quite ambiguous. Moreover, the bivariate correlation might be a spurious relationship. One must control for other factors in order to assess if single parenthood causes comparative historical variation in poverty.

Fig. 1 displays a comparison of historical trends in manufacturing employment. In this and the three figures that follow, I confine the presentation to Germany, Sweden and the U.S. from 1969 to 2000.[21] Fig. 1 documents the widespread decline of manufacturing employment. Germany declined from nearly 50% of its labor force employed in manufacturing to less than 30%. Sweden fell from about 40% to 23% employed in manufacturing. Finally, the U.S. declined from about 33% to just over 22% employed in manufacturing. Sweden and the U.S. had less manufacturing employment throughout the period, but the more industrialized Germany actually underwent a much more rapid decline. All nations experienced substantial deindustrialization by 2000.

Fig. 2 displays the massive decline in agricultural employment in all three nations, which has led to a convergence at very low levels. Germany and Sweden declined at a much more dramatic pace. Germany began with more agricultural employment than Sweden in 1969 (9.0 versus 8.2), and both have fallen to 2.4% and 2.2%. The U.S. had already lost much of its agricultural employment by 1969 when it was only 4.4 of the labor force, but it continued to decline to 2.5% in 2000. Agricultural employment is a very small percent of the labor forces of these countries, but its substantial decline suggests a potentially important trend.[22]

Fig. 3 documents the substantial rise in female labor force participation in Germany, Sweden and the U.S. Sweden rose from 57.8% in 1969 to just above 81% in 1990, but has actually fallen to 72.7% in 2000. Germany increased consistently from 48% to 61.4% in 2000.

[21] These three provide a reasonable sample of the diversity across the 18 nations. These three include conservative/Christian-Democratic/corporatist Germany, socialist/Social Democratic Sweden, and the liberal U.S. Also, these three include the largest (U.S.), second largest (Germany), and one of the smaller populations (Sweden). These three provide a high number of LIS cases: Germany (8), Sweden (6), and the U.S. (7). In my opinion, including all countries or the central tendency and dispersion would be less illustrative than these figures.

[22] Alderson and Nielsen (2002, p. 1258) note that agriculture was very recently a large part of many nations' economies: "As late as 1967, the employment share of agriculture was over 10% in Austria, Denmark, France, Germany, Norway, and Sweden and over 20% in Finland, Ireland, Italy and Japan."

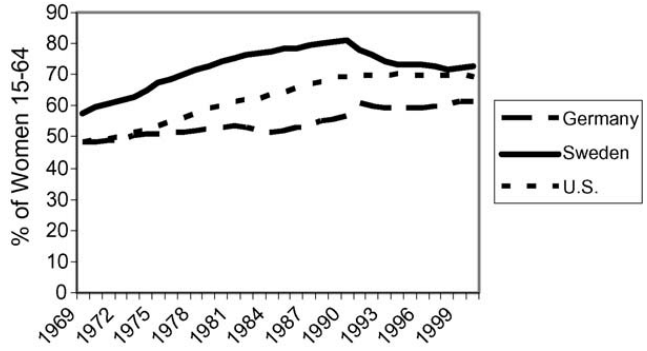

Fig. 3. Trends in female labor force participation: Germany, Sweden, and the U.S., 1969–2000.

While the U.S. was indistinguishable from Germany (the lowest of the three) at 48.2% in 1969, it rose to about 70% in 1990, where it has stayed through 2000 (now very close to Sweden). This widespread upsurge was not linear. Sweden's rate declined with the broader decline in employment for both sexes in the 1990. Also, Germany and the U.S. seemed to reach a plateau around 1990. There is now much less variation in female labor force participation than there was in the mid-1980s. Still, all nations experienced a fundamental transition.

Finally, Fig. 4 shows the substantial growth of the elderly population for all three nations. Sweden increased from 13.5% in 1969 to 17.7 in 1987 and actually declined slightly to 17.3 in 2000. The U.S. increased from 9.7% to a peak of 12.7% in 1995 and has since remained stable. Germany's elderly population grew from 13% in 1969 to 16.45% in 2000. Notably, the elderly remain a minority of each nation's populations and their size has remained relatively stable since about 1990. But, the aging of these populations does present a challenge for their welfare states.

4.2. Models of poverty

In Table 3, the first two columns display LIS headcount (*H*) poverty and the second two display interval

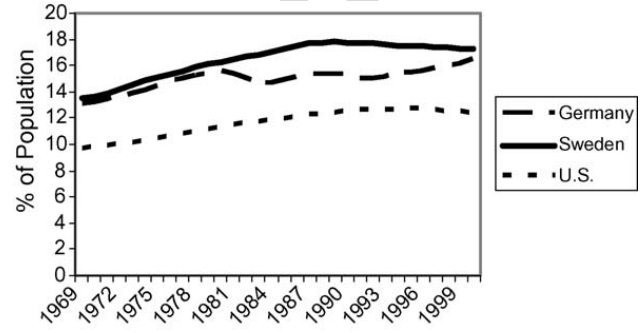

Fig. 4. Trends in elderly population: Germany, Sweden, and the U.S., 1969–2000.

(*HI*) poverty. For both dependent variables, I primarily present a full model of the five structural variables, the two welfare state variables, and the three economic variables. Secondly, I only include the structural variables. The second model tests if the effects of the structural variables are robust to the other variables in the model. Brady (2003b) has shown that the results for the economic variables are robust with no other variables in the models. Since this paper focuses on evaluating structural theory, I concentrate on testing the robustness of the structural variables. In results available upon request, I analyzed each structural variable individually (with and without the other variables) and the conclusions are consistent.[23]

In the first model for *H* poverty, four structural variables have significantly effects: manufacturing employment, female labor force participation, elderly population, and children in single mother families. Agricultural employment is not significant. For a standard deviation decline in manufacturing employment, *H* poverty is expected to increase by .29 standard deviations, holding all other variables constant at their means. For a standard deviation increase in female labor force participation, *H* poverty should decline by .33 standard deviations. For a standard deviation increase in the elderly population, *H* poverty is expected to increase by .28 standard deviations. For a standard deviation increase in children in single mother families, *H* poverty should increase by .26 standard deviations. Given historical trends, the decline of manufacturing, the rise of the elderly population and the growth of children in single mother families have been partially offset by the rise of female labor force participation. But, since the collective poverty increasing effects of the first three is larger than the effect of female labor force participation, the net effect of historical changes in these structural variables has been to increase *H* poverty.

The structural variables have smaller effects than the welfare state variables, but much larger effects than the economic variables. Both welfare state variables are significant. Only economic growth has a significant effect, while productivity and unemployment are insignificant.[24] The two welfare state variables have

[23] Individually with the welfare state and economic variables, the structural variables would have the following *t*-scores for *H* and *HI*: manufacturing employment (−2.48, −1.11), agricultural employment (−.46, −1.03), female labor force participation (.83, .28), elderly population (1.46, .57), and children in single mother families (2.91, 1.80).

[24] The three economic variables are not jointly significant in a Wald Chi-Square test ($p = .14$). Also, productivity and unemployment are not jointly significant ($p = .65$). Productivity and unemployment would not be significant if the other or economic growth was dropped from the

Table 3
Random effects models of poverty on structural, welfare state, and liberal economic variables in rich Western democracies, 1969–2000 ($N = 92$)

	LIS headcount poverty		Interval poverty	
Structural				
Manufacturing employment	−.190**, ***−.293***, (−2.41)	−.118*, ***−.183***, (−1.77)	−.064, ***−.150***, (−1.13)	−.028, ***−.067***, (−.58)
Agricultural employment	.109, ***.078***, (.74)	.129, ***.093***, (.81)	−.061, ***−.067***, (−.60)	−.005, ***−.006***, (−.05)
Female labor force participation	−.117**, ***−.331***, (−2.52)	−.037, ***−.104***, (−.86)	−.053, ***−.232***, (−1.62)	−.015, ***−.065***, (−.49)
Elderly population	.488**, ***.280***, (2.34)	.019, ***.011***, (.09)	.127, ***.112***, (.86)	−.064, ***−.056***, (−.40)
Children in single mother families	.921**, ***.256***, (2.33)	1.026**, ***.285***, (2.30)	.395, ***.168***, (1.40)	.510, ***.217***, (1.60)
Welfare state				
Social security transfers	−.325***, ***−.378***, (−3.95)		−.124**, ***−.221***, (−2.11)	
Public health spending	−.133***, ***−.442***, (−2.10)		−.115***, ***−.586***, (−4.78)	
Economic performance				
Economic growth	−.177**, ***−.133***, (−2.10)		−.153**, ***−.176***, (−2.49)	
Productivity	−.00003, ***−.063***, (−.91)		−.00003, ***−.101***, (−1.31)	
Unemployment	−.032, ***−.030***, (−.31)		−.066, ***−.096***, (−.89)	
Constant	28.887***, (4.59)	11.449** (2.43)	21.740***, (4.91)	7.888**, (2.31)
BIC′	−75.309	−14.139	−69.559	−16.276
R^2 within	.272	.120	.122	.018
R^2 between	.777	.376	.793	.358
R^2 overall	.730	.329	.713	.345

Note: For each independent variable, the unstandardized coefficient, standardized coefficient in bold and italics, and *t*-score in parentheses are displayed.
* $p < .10$.
** $p < .05$.
*** $p < .01$.

the largest effects. With a standard deviation increase in social security transfers, *H* poverty is expected to decline by .38 standard deviations. For a standard deviation in public health spending, *H* poverty is expected to decline by .44 standard deviations. By contrast, economic growth has the smallest effect of any of the significant variables. A standard deviation increase in economic growth should decrease *H* poverty by .13 standard deviations.

In the second models, only two of the structural variables remain statistically significant. Manufacturing employment is significant at the .10 level, and the size of the coefficient declines by more than a third. Children in single mother families has a more significant and larger effect. Since agricultural employment does not affect *H* poverty in either model, it simply has not effect on *H* poverty.[25] The second models show that the welfare state and economic controls do not obscure the effect of the structural variables. In fact, only children in single mother families has a larger effect, while female labor force participation and elderly population become insignificant. Since it is most reasonable to control for the welfare state and economic variables, it is reasonable to conclude that the first models accurately represent the effects of the structural variables.

In the first model for *HI* poverty, none of the structural variables is significant (column 3). Three variables have t-scores larger than one, and female labor force participation is near significant ($t = -1.6$). But, the structural variables do not have significant effects.[26] Since agricultural employment – unlike the other structural variables – failed to affect *H* poverty, this study provides no evidence that it influences poverty. Also, none of the structural variables is significant in the next model without the welfare state and economic variables. Children in single mother families rises to near significance, while the other structural variables attenuate. As mentioned above (see footnote 28), children in single mother families would have a significant effect ($t = 1.8$) in a model with the welfare state and economic variables but no other structural

first model. In fact, productivity and unemployment are not significant in a model with no other independent variables (Brady, 2003b).

[25] In a model with no other independent variables, agricultural employment does not significantly affect LIS *H* poverty ($t = -1.21$, overall *R*-squared = .0005).

[26] The structural variables are not jointly significant in a Wald Chi-square ($p = .38$). If year is added to the model, all of the structural variables remain significant.

variables. But, this effect is not robustly significant if one adds manufacturing or agricultural employment to the model.[27] Overall, thus, the structural variables simply do not significantly affect *HI* poverty.[28]

The welfare state variables both significantly reduce *HI* poverty, while economic growth remains the only significant economic variable.[29] As with *H* poverty, the two welfare state variables have the largest effects. For a standard deviation increase in social security transfers, *HI* poverty is expected to decline by .22 standard deviations. With a standard deviation increase in public health spending, *HI* poverty should decline by .59 standard deviations. While social security transfers had only a slightly smaller effect than public health spending for *H*, public health spending has a much larger effect for *HI* (Brady, 2005). Economic growth has a larger effect than the insignificant structural variables would have if significant, but a smaller effect than the welfare state variables. For a standard deviation increase in economic growth, SM *HI* poverty is expected to decline by .18 standard deviations.

Looking across both dependent variables, it is noteworthy that four of the structural variables affect *H* poverty but none affect *HI* poverty. There are three plausible interpretations for this inconsistency. First, structural variables may be more important to dichotomously differentiating who is poor from non-poor as *H* measures simply what percent is below the threshold. By contrast, structural variables may be less important when a poverty measure incorporates the depth of poverty. While changes in these structural variables may lift households above the threshold, they might not reduce the depth of poverty among those that remain poor. Possibly, structural variables lift people out of poverty who are barely below the poverty threshold, but do little for those more deeply in poverty. Second, *H* poverty might be measured with less error than *HI* poverty. There are certainly concerns with the quality of household income data at the low end of the distribution. It may be possible that by trying to estimate the depth of poverty of low-income households, one is introducing measurement error than does not exist in *H* poverty. Third, a reasonable conclusion is that the evidence fails to show that the effects of structural variables are robust to an alternative dependent variable. While the welfare state variables and economic growth clearly have robust effects on both dependent variables, the evidence is not as strong for the structural variables.

4.3. Counterfactual simulations

In Table 4, I illustrate the possible influence of structural factors, the welfare state and economic performance on U.S. poverty in 2000. This simulation provides a substantive comparison of the influence of the three sets of causes of poverty. I display the actual levels of poverty (with LIS *H* and *HI*) in the U.S. in 2000. Then, I estimate what the level of poverty would be if each of the significant variables was changed one standard deviation in the direction of poverty reduction. After doing so, I sum the changes for the groups of causes to compare their relative influence.

In 2000, the U.S. had the greatest *H* poverty among the affluent democracies (17.0). If manufacturing employment increased one standard deviation to 27.8, *H* poverty would be 90.2% of its actual level. This increased industrialization would place the U.S. among the most industrialized in the panel presently, similar to the U.S. in 1976, and near the mean for the entire sample. If female labor force participation increased one standard deviation to 79.7%, the U.S. would have one of the highest rates ever. In turn, *H* poverty would be 79.7% of its actual level. If the elderly population was one standard deviation smaller, it would be 10.3% of the population, a level close to the U.S. in the early 1970s. In this case, *H* poverty would still be 96.5% of its actual level. If children in single mother families declined one standard deviation, they would be 3.15% of the population—still above the sample mean, near Sweden in 2000, and lower than at any point in the U.S. for which data exists (1974–2000). If single parenthood declined this greatly, *H* poverty would still be about 98.5% of its actual level. Among the structural variables, the biggest changes to U.S. poverty could occur with increased manufacturing

[27] In general, the inclusion of manufacturing employment attenuates the effect of children in single mother families. This finding suggests that manufacturing's typically well-paid and stable male employment may influence marriage and single motherhood (Hughes, 2003; Wilson, 1987). The two are negatively correlated ($r = -.40$). In a RE model predicting children in single mother families including all of the independent variables, manufacturing employment and public health spending are the only significant effects, and both are negative. These findings are consistent if a time trend is added to the model as well.

[28] In models of *HI* poverty with no other independent variables, manufacturing employment ($t = 1.47$), agricultural employment ($t = -.64$), female labor force participation ($t = .50$), and elderly population ($t = .20$) would not have significant effects. Only children in single mother families ($t = 2.1$) would be significant.

[29] The three economic variables are jointly significant in a Wald Chi-Square test ($p = .04$), but this is solely due to economic growth. Productivity and unemployment are not jointly significant ($p = .34$). Consistent with LIS *H* (footnote 29), productivity and unemployment are not significant if the other or economic growth was dropped. Also, productivity and unemployment are not significant in a model with no other independent variables (Brady, 2003b).

Table 4
Counterfactual simulations of U.S. poverty in 2000 based on analysis in Table 3

	LIS headcount poverty	Interval poverty
Actual levels	**17.0**	**12.173**
Structural, standard deviation change towards poverty reduction	***11.014***; ***64.79***% of actual value	***12.173***; ***100***% of actual value
Manufacturing employment, standard deviation increase from 22.14 to 27.83	15.332; 90.19% of actual value	Not significant
Agricultural employment, standard deviation decline from 2.486 to 0	Not significant	Not significant
Female labor force participation, standard deviation increase from 69.22 to 79.67	13.541; 79.65% of actual value	Not significant
Elderly population, standard deviation decline from 12.43 to 10.29	16.402; 96.48% of actual value	Not significant
Children in single mother families, standard deviation decline from 4.17 to 3.15	16.739; 98.47% of actual value	Not significant
Welfare state, standard deviation change towards poverty reduction	***9.941***; ***58.48***% of actual value	***8.844***; ***52.02***% of actual value
Social security transfers, standard deviation increase from 12.00 to 16.29	15.377; 90.45% of actual value	16.051; 94.42% of actual value
Public health spending, standard deviation increase from 44.20 to 56.500	11.564; 68.02% of Actual Value	9.793; 57.61% of Actual Value
Economic performance, standard deviation change towards poverty reduction	***16.638***; ***97.87***% of actual value	***16.520***; ***97.18***% of actual value
Economic growth, standard deviation increase from 3.29 to 6.01	16.638; 97.87% of actual value	16.520; 97.18% of actual value
Productivity, standard deviation increase from 63,143.59 to 71,633.97	Not significant	Not significant
Unemployment, standard deviation decline from 4.00 to 7.50	Not significant	Not significant

employment and female labor force participation. By contrast, poverty would be very similar if the elderly population and/or single motherhood changed. Collectively, if all four significant structural variables moved in a poverty reducing direction, poverty would be 64.8% of its actual level—similar to Canada in 2000. Of course, all structural variables simultaneously changing towards poverty reduction is unlikely since the most powerful of these, female labor force participation, probably has increased in tandem with deindustrialization and the rise of single motherhood.[30]

Table 4 also presents simulations for the welfare state and economic growth. If social security transfers increased one standard deviation to 16.3, the U.S. would be slightly above the sample mean. With this change, *H* poverty would be 90.5% of its actual level. If public health spending increased one standard deviation to 56.5, it would still be nearly two standard deviations below the sample mean and similar to Switzerland, the country with the second lowest levels of public health spending. Even with these relatively low levels, *H* poverty would decline to 68% of its actual level. If the 5-year average of economic growth increased one standard deviation, it would have been an extremely high 6%. This would be more than a standard deviation above the sample mean, and higher than at any time for the U.S. since 1966. With this extremely high growth, *H* poverty would still be 97.9% of its actual level.

Comparing the collective influence of the four significant structural variables, the welfare state and economic performance provides a greater understanding of these sources of poverty. Together, the structural variables could have a more powerful influence than economic growth, but a lesser influence than the welfare state. Hence, the U.S. would receive the greatest reduction in poverty by emphasizing first, an expanded welfare state; second, poverty reducing structural change; and third, increased economic growth. If all four structural variables changed in a poverty reducing direction (a scenario I acknowledge above as possibly self-contradictory), *H* poverty would decline 35.2%. If both welfare state variables were boosted one standard deviation, *H* poverty would decline 41.5%. The larger effect of the welfare state is even more noteworthy considering that we are comparing two welfare state variables with four structural variables. If economic growth increased one standard deviation, *H* poverty would decline 2.2%. Put another way, if all structural variables changed to reduce poverty, the U.S. would have *H* poverty levels below four countries and near Canada in 2000. If both welfare state variables increased, the U.S. would have *H* poverty levels below five countries and between Spain and Switzerland.

[30] Appendix A shows that female labor force participation is moderately negatively correlated with manufacturing employment and strongly positively correlated with children in single mother families. In a RE model, manufacturing employment significantly reduces ($t = -7.0$) female labor force participation, but children in single mother families does not have a significant effect ($n = 92$; with or without the other independent variables in the model).

With greater economic growth, the U.S. would still have the most *H* poverty, more than 2% higher than Australia, the next highest country.

Table 4 also displays this counterfactual simulation for *HI* poverty. This comparison is less relevant to evaluating structural theory since none of the structural variables significantly affects *HI* poverty. Thus, this simulation only compares the welfare state variables with economic growth. As with *H* poverty, the welfare state variables are far more powerful than economic growth. If both welfare state variables increased one standard deviation, *HI* poverty would be 52% of its actual level. If economic growth increased one standard deviation, *HI* poverty would be 97.2% of its actual level. Thus, increasing the welfare state would almost cut U.S. *HI* poverty in half, while increasing economic growth would produce a small reduction. Ultimately, both simulations in Table 4 strongly suggest that the best means to reduce poverty in the U.S. would be to expand the welfare state. Countries accomplished low levels of poverty principally by having a generous welfare state, and secondly, because of structural factors. By contrast, economic growth plays a very small role in explaining poverty.

Table 5 provides simulations for Germany and Sweden in 2000. Because these two have lower levels of poverty, I contrast them with the U.S. by simulating the consequences if structural, welfare state and economic variables all changed in a poverty *increasing* direction. If manufacturing employment declined one standard deviation, Germany's *H* would increase 13% and Sweden's *H* would increase 17%. If female labor force participation declined one standard deviation, *H* would increase 15% in Germany and 19% in Sweden. If the elderly population increased similarly, *H* would increase 12% in Germany and 16% in Sweden. If children in single mother families increased similarly, *H* would increase 11% in Germany and 15% in Sweden.

Collectively, if all these structural variables changed in a poverty increasing direction, Germany's *H* would 12.6 (52% higher) and Sweden's *H* would be 10.78 (66% higher). Thus, even with these changes, Germany and Sweden's *H* poverty would still be far below the U.S. value of 17.0. If the two welfare state variables declined one standard deviation, Germany's *H* would be 11.3 (36% higher) and Sweden's *H* would be 9.5 (47% higher). If economic growth declined one standard deviation, *H* poverty would only increase 6 or 7% and *HI* poverty would only increase 8%. Therefore, structural variables would exert a greater influence on *H* poverty in these countries than in the U.S., and actually would have a larger impact than the welfare state variables. As with the U.S., economic growth would be least consequential. As mentioned above, it is unlikely that all four structural variables would change in a poverty-increasing direction, and one should be cautious about comparing two welfare state variables with four structural variables. Moreover, reducing the welfare state variables one standard deviation would result a 33% or 37% increase in *HI* poverty. By contrast, the structural variables do not significantly influence *HI* poverty.

4.4. Sensitivity analyses

Finally, in Table 6, I evaluate the dynamics created with the inclusion of the U.S. in the sample. Even though the RE models control for cross-national differences, it is possible that the results rested on the anomalous U.S. cases. The U.S. clearly has the most poverty, the most single motherhood, the least generous welfare state, and recently has experienced strong economic performance.

Table 5
Counterfactual simulations of poverty in Sweden and Germany in 2000 based on analysis in Table 3

	Germany		Sweden	
	LIS *H*	*HI*	LIS *H*	*HI*
Actual levels	**8.3**	**5.970**	**6.5**	**5.215**
Structural, standard deviation change towards poverty increase	***12.583***; ***152%***	***5.970***; ***100%***	***10.783***; ***166%***	***5.215***; ***100%***
Manufacturing employment decline one standard deviation	9.382; 113%	Not significant	7.582; 117%	Not significant
Female labor force participation decline one standard deviation	9.522; 115%	Not significant	7.722; 119%	Not significant
Elderly population increase one standard deviation	9.334; 112%	Not significant	7.534; 116%	Not significant
Children in single mother families increase one standard deviation	9.245; 111%	Not significant	7.445; 115%	Not significant
Welfare state, standard deviation change towards poverty increase	***11.327***; ***136%***	***7.912***; ***133%***	***9.527***; ***147%***	***7.157***; ***137%***
Social Security transfers decline one standard deviation	9.696; 117%	6.502; 109%	7.896; 121%	5.747; 110%
Public health spending decline one standard deviation	9.932; 120%	7.380 124%	8.132; 125%	6.625; 127%
Economic performance, standard deviation change towards poverty increase	***8.791***; ***106%***	***6.393***; ***107%***	***6.991***; ***108%***	***5.638***; ***108%***
Economic growth decline one standard deviation	8.791; 106%	6.393; 107%	6.991; 108%	5.638; 108%

Table 6
Sensitivity analyses of random effects models with and without the U.S. of poverty on structural, welfare state, and liberal economic variables in rich Western democracies, 1969–2000

	LIS headcount poverty		Interval poverty	
	With U.S. dummy	Dropping U.S.	With U.S. dummy	Dropping U.S.
Structural				
Manufacturing employment	−.222*** (−2.72)	−.191** (−2.26)	−.086 (−1.46)	−.067 (−1.10)
Agricultural employment	.143 (.95)	.104 (.69)	−.041 (−.38)	−.062 (−.57)
Female labor force participation	−.123*** (−2.64)	−.136*** (−2.84)	−.058* (−1.73)	−.064* (−1.86)
Elderly population	.562*** (2.61)	.546** (2.52)	.173 (1.12)	.165 (1.05)
Children in single mother families	.677 (1.59)	.893* (1.96)	.218 (.70)	.339 (1.02)
Welfare state				
Social security transfers	−.330*** (−3.99)	−.350*** (−4.15)	−.127** (−2.12)	−.139** (−2.27)
Public health spending	−.103** (−2.52)	−.112*** (−2.69)	−.094*** (−3.20)	−.100*** (−3.34)
Economic performance				
Economic growth	−.154* (−1.80)	−.168* (−1.92)	−.132** (−2.12)	−.142** (−2.22)
Productivity	−.00003 (−1.14)	−.00004 (−1.18)	−.00003 (−1.55)	−.00004 (−1.57)
Unemployment	−.033 (−.32)	−.014 (−.13)	−.067 (−.89)	−.054 (−.69)
U.S. dummy	3.664 (1.38)		2.365 (1.27)	
Constant	27.366*** (4.23)	28.251*** (4.28)	20.812*** (4.50)	21.29 2*** (4.50)
BIC′	−60.903	−35.241	−57.447	−13.477
R^2 within	.287	.295	.135	.146
R^2 between	.755	.670	.769	.615
R^2 overall	.700	.608	.688	.494
N	92	85	92	85

Notes: For each independent variable, the unstandardized coefficient, and t-score in parentheses are displayed.
* $p < .10$.
** $p < .05$.
*** $p < .01$.

Building on the primary models in Table 3, I first include a dummy control variable for the U.S. cases and second replicate the analyses after dropping the U.S. cases.

Table 6 is broadly consistent with Table 3, though there are some departures. While including a dummy for U.S. cases, three structural variables significantly increase *H* poverty. After controlling for the idiosyncrasies of the U.S., children in single mother families is not significant. The coefficient is slightly more than a fourth smaller than in Table 3, and the t-score is only near significant. To a certain extent, children in single mother families does not appear to affect *H* poverty after controlling for the unique characteristics of the U.S. cases.[31]

[31] Similarly, children in single mother families does not have a significant effect on *H* poverty in fixed effect (FE) models (available upon request). Controlling for time invariant cross-national characteristics with FE models, the structural variables would have the following t-scores: manufacturing employment (−3.1), agricultural employment (.35), female labor force participation (−2.6), elderly population (2.1), and children in single mother families (.19). Since the FE models contain a set of national dummy variables and difference all variables from their national means, FE models isolate the within-nation (over time) effect of structural variables.

The two welfare state variables and economic growth continue to be significant, while agricultural employment, productivity and unemployment remain insignificant. Still, however, BIC′ very strongly prefers the primary *H* poverty model in Table 3 over this model with the U.S. dummy variable.

In the second model of Table 6, I drop the U.S. cases. As with the results in Table 3, four structural variables, the two welfare state variables, and economic growth significantly affect *H* poverty. Unlike in the first model, children in single mother families has a significant effect. Thus, after dropping the U.S. cases, children in single mother families does help explain variation in *H* poverty among the remaining countries. More importantly, however, this model shows that the results of Table 3 hold regardless of whether the U.S. cases are in the sample.

In the next two columns in Table 6, I examine *HI* poverty. As with Table 3, four of the structural variables, productivity and unemployment are insignificant, while the two welfare state variables and economic growth significantly reduce *HI* poverty. The one departure when including a dummy for the U.S. cases or dropping the U.S. cases is that female labor force participation is significantly negative at the .10 level. This result suggests

that after controlling for the unique characteristics of the U.S. and in the non-U.S. countries, increased female labor force participation has contributed to reduced *HI* poverty. Nevertheless, BIC′ very strongly prefers the primary model in Table 3 over either of these models of *HI* poverty in Table 6.

5. Discussion

Structural theory has been one of the most influential explanations of poverty in the social sciences, and probably the most popular explanation within sociology. This study evaluates structural theory by examining how five structural factors affect poverty in 18 rich Western democracies. To this author's knowledge, this is the only study to assess the impact of these five structural factors on poverty after taxes and transfers in a panel of affluent democracies. This study is also unique because it substantially expands the comparative and historical scope of inquiry, compares structural theory with two alternative theoretical explanations, and considers a second measure of poverty that incorporates the depth of poverty. In this section, I review the evidence for each structural variable, compare structural theory with liberal economic and political-institutional explanations, and suggest future research.

First, manufacturing employment significantly reduces *H* poverty but is insignificant for *HI* poverty. The deindustrialization of affluent democracies has contributed to comparative historical variation in poverty. The lower levels of manufacturing employment in the U.S. partly account for the particularly high levels of *H* poverty in the U.S. Bluestone and Harrison's (1982) concern with the distributional consequences of deindustrialization, one recognized by Wilson (1987, 1996), warrants the continuing attention of poverty researchers. At the same time, however, since manufacturing employment is insignificant for *HI* poverty, the evidence for its impact is less robust.

Second, agricultural employment does not significantly affect either dependent variable. There is no evidence that poverty is shaped by levels of agricultural employment in affluent democracies. This non-finding shows how relative poverty is not simply the same phenomena as income inequality. While Alderson and Nielsen (2002) found that agricultural employment was the most important determinant of inequality in a similar sample, it simply has no effect on poverty. Agricultural employment is a very small part of the labor force in all countries by the end of the period. Plausibly, it is too marginal a sector to really influence variation in poverty.

Third, female labor force participation significantly reduces *H* poverty but is insignificant for *HI* poverty in Table 3. However, if one controls for the U.S. cases, female labor force participation significantly affects *HI* poverty. When controlling for the welfare state and economic variables, this variable has the largest impact of the structural variables. The rise in female labor force participation has partially offset the poverty augmenting consequences of other structural changes. Indeed, the U.S. would have much greater levels of poverty without its moderately high levels of female labor force participation. Again, given its insignificance for *HI* poverty in Table 3, the evidence for its effect on poverty is not entirely robust.

Fourth, the elderly population significantly increases *H* poverty, but is insignificant for *HI* poverty. The elderly are more vulnerable to being poor than working-age adults in affluent Western democracies (Brady, 2004). As the elderly grow as a proportion of the population, *H* poverty rises. Countries with larger elderly populations, holding all other variables constant, tend to have more *H* poverty. Still, the U.S. would have only slightly less poverty if the elderly population was one standard deviation less. Like the other structural factors, this variable is not robust to *HI* poverty.

Fifth, children in single mother families significantly increases *H* poverty, but is only near significant for *HI* poverty.[32] Single mother families are more likely to be poor in most countries (Christopher et al., 2002), and countries with more children in single mother families tend to have more poverty. Of the significant structural factors, the effect of children in single mother families is the smallest for *H* poverty. The U.S. would experience very little change in its *H* poverty if children in single mother families were a standard deviation less. As well, children in single mother families probably does not account for historical variation in *H* poverty since it is insignificant with a dummy to control for the U.S. or in FE models (see footnote 36). The less robust, smaller effects of children in single mother families are surprising since it has probably received the most attention among the structural variables. The conclusion that single motherhood is less relevant than other structural

[32] In Moller et al.'s (2003) analysis of poverty reduction (which is correlated with SM poverty), the LIS measure of the percent of children in single mother families was the only structural factor included. They found it was insignificant. Their finding could be due to the different operationalization of children in single mother families or because their dependent variable was *H* poverty among 25–59 years old. Also, the larger sample in this study, and the resulting greater degrees of freedom, may be responsible.

factors parallels Chevan and Stokes's (2000) finding that deindustrialization was more important than changes in family structure to the rise in income inequality in the U.S.

Despite the importance of structural factors, the welfare state has a larger impact on poverty.[33] Also, more robust evidence exists of the welfare state's impact since it significantly influences both *H* and *HI* poverty. The two welfare state variables consistently have the largest effects in the models. If the U.S. increased the two welfare state variables by a standard deviation, *H* poverty would decline by a larger margin than if structural variables underwent a similar change. In fact, *HI* poverty would be nearly cut in half. In Germany and Sweden, a standard deviation change in the structural variables would result in greater *H* poverty than a standard deviation decline in the welfare state variables. But, since the structural variables are insignificant for *HI* poverty, a welfare state decline would be far more consequential for *HI* poverty. Ultimately, the standardized coefficients in Table 3 show that the welfare state is the primary causal influence on comparative historical variation in poverty.

Hence, this study ultimately illustrates the limitations of structural theory. Since the welfare state has the most powerful effects, structural theory should be more of a supplementary explanation. The contrast between structural and political-institutional explanations boils down to a question of causal primacy. Earlier, I explained structural theory emphasizes that as the population is composed of more people in vulnerable demographic or labor market circumstances, the more poverty results. Sociologists tend to concentrate on these labor market and demographic factors as the main pressures on a nation's poverty levels. This study and most political-institutional accounts suggest that concentration is misplaced. How much welfare states institutionalize egalitarianism and protect citizens against economic insecurity – including insecurity resulting from vulnerable demographic and labor market circumstances – is more important than simply how many people are vulnerable. It is true that structural factors (e.g. deindustrialization) are often causes of variation in welfare states. Nevertheless, the welfare state is fundamentally a political outcome. As a result, poverty is a political outcome as well.

[33] The findings on the welfare state further illustrate how the causes of relative poverty are different from the causes of income inequality. Past studies conclude that the social security transfers has an insignificant (Gustafsson & Johansson, 1999) decommodification has a small effect on inequality (Alderson & Nielsen, 2002).

Consistent with past research (Brady, 2003b), economic performance has only a minor effect on poverty. Economic growth significantly reduces poverty, while unemployment and productivity are insignificant. For *H* poverty, economic growth has a smaller influence than the significant structural variables. For *HI* poverty, economic growth's effects are larger since none of the structural variables significantly affects *HI* poverty. Ultimately, however, the welfare state has much larger effects than economic growth.

Given its contributions and limitations, future research should evaluate this study's conclusions with analyses of poverty across demographic groups. It would be valuable to examine if this study's prioritization of causes is consistent across children, the elderly, women and men (see e.g. Brady, 2004). In the event that data allow for valid and reliable cross-national comparisons, research should examine these sources of poverty for racial/ethnic minorities and immigrants. Historically, structural explanations have been animated by a concern with the plight of inner-city African-Americans, immigrants and other ethnic minorities (O'Connor et al., 2001). A complete evaluation of structural theory would require a serious consideration of ethnic stratification.

These results illustrate some limitations of contemporary U.S. poverty research and policy. Unfortunately, this area overwhelmingly concentrates on the U.S. case. Probably partly as a result, U.S. poverty debates have focused on economic growth and single motherhood above any other sources of poverty (O'Connor, 2001). This study suggests that U.S. poverty research and policy would gain much more by focusing on other structural factors, particularly manufacturing employment, female labor force participation, and the elderly population. More importantly, the welfare state is far more crucial than economic growth and even these structural factors. Without a change in the focus of U.S. poverty policy and research, the U.S. will most likely continue to have the most poverty of any of the rich Western democracies.

Acknowledgements

This paper benefited from comments by Kevin Leicht and *RSSM* reviewers, Art Alderson, Jason Beckfield, Clem Brooks, M.E. Hughes, Lane Kenworthy, Phil Morgan, Emilio Parrado, David Reingold, Rob Robinson, and Mike Wallace. I appreciate data shared by Jason Beckfield, Evelyne Huber, Charles Ragin, and John Stephens.

Appendix A. Correlation matrix for variables ($N = 92$)

	1	2	3	4	5	6	7	8	9	10	11	12
(1) LIS headcount poverty												
(2) Interval poverty	.90											
(3) Manufacturing employment	−.25	−.21										
(4) Agricultural employment	.02	−.07	.16									
(5) Female labor force participation	−.05	−.05	−.33	−.44								
(6) Elderly population	−.39	−.38	.18	−.26	.30							
(7) Children in single mother families	.49	.51	−.40	−.38	.60	−.15						
(8) Social security transfers	−.54	−.43	−.04	−.02	−.03	.50	−.27					
(9) Public health spending	−.67	−.76	.21	.05	.00	.44	−.46	.27				
(10) Economic growth	−.16	−.16	−.02	−.25	.01	−.14	.04	−.06	−.12			
(11) Productivity	.31	.21	−.28	−.18	−.11	−.04	.10	−.26	−.19	.01		
(12) Unemployment	.28	.12	−.40	.29	−.32	−.14	−.09	.12	−.10	−.25	.00	
(13) U.S. dummy	.59	.66	−.14	−.23	.18	−.26	.66	−.26	−.78	.04	.32	−.11

Appendix B. Comparisons of results with different measures of economic Growth ($N = 92$)

Measure of growth	Correlation with interval poverty	Standardized coefficient and *t*-score with no other I.V.'s	R^2 with no other I.V.'s	Standardized coefficient and *t*-score with all other I.V.'s	R^2 with all other I.V.'s	Correlation with LIS headcount poverty
NCU *t*	−.228	−.022 (−.38)	.052	−.061 (−1.07)	.656	−.103
PPP *t*	−.265	−.038 (−.66)	.070	−.116** (−2.01)	.690	−.244
NCU *t*-1	−.039	−.049 (−.88)	.002	−.059 (−1.00)	.632	.108
PPP *t*-1	−.076	−.065 (−1.22)	.010	−.108* (−1.88)	.676	−.027
NCU *t*-2	.027	−.017 (−.33)	.001	−.040 (−.69)	.624	.084
PPP *t*-2	−.010	−.101* (−1.76)	.010	−.152*** (−2.64)	.697	−.090
NCU average of *t*, *t*-1, *t*-2	−.138	−.045 (−.75)	.019	−.094 (−1.46)	.658	.019
PPP average of *t*, *t*-1, *t*-2	−.204	−.099* (−1.65)	.042	−.199*** (−3.27)	.733	−.171
NCU *t*-3	−.065	.009 (.18)	.004	.017 (.32)	.622	−.013
PPP *t*-3	−.032	.020 (.36)	.001	−.039 (−.63)	.638	−.032
NCU *t*-4	−.038	.045 (.89)	.001	.081 (1.53)	.612	.007
PPP *t*-4	−.108	.015 (.25)	.012	−.015 (−.25)	.641	−.108
NCU average of *t*, *t*-1, *t*-2, *t*-3, *t*-4	−.131	−.007 (−.12)	.017	−.022 (−.34)	.635	.011
PPP average of *t*, *t*-1, *t*-2, *t*-3, *t*-4	−.164	−.054 (−.83)	.027	−.176** (−2.49)	.713	−.164

* $p < .10$.
** $p < .05$.
*** $p < .01$.

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