HOME OWNERSHIP, SOCIAL INSURANCE AND THE WELFARE STATE

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Abstract

One of the primary functions of the welfare state in advanced capitalist countries is to provide economic security over the life course. Drawing on the precautionary savings literature, we argue that fostering home ownership is one such strategy and should be considered in cross-national comparisons of the welfare state and economic well being. To this end, we investigate the distribution of home ownership in a cross-national framework. First, we investigate the macro-level relationship between home ownership on the one hand, and income inequality and social spending, on the other. The relationship between income inequality, social transfers and the rate of home ownership is not necessarily straightforward. It may be the case that higher degrees of government social spending and economic *equality* are associated with more universal home ownership since homes would be more affordable to a wider number of households (income effect). On the other hand, it is possible that societies with greater *inequality* have higher rates of home ownership as an alternative form of "private" social welfare. We find that countries with greater income inequality tend to have higher rates of home ownership in random effects regression models. However, this effect appears to be mediated by welfare spending. Countries that spend a higher proportion of their GDP on social insurance have lower home ownership rates, raising the possibility that privately owned homes act as an alternative form of social insurance over the life course. The paper concludes by suggesting that welfare state researchers take seriously the issue of home (and other wealth) ownership in trying to understand the dynamics of inequality and the social safety net.

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Introduction

It is commonly thought that one of the primary roles of the welfare state in advanced capitalist countries is the reduction of income inequality. In this literature, the welfare state has generally been conceived of as taxes and income transfers (see, e.g., Headey, Gooding, Muffels and Driven 1997; Hicks and Swank 1984a; McCrate 1997; Korpi and Palme 1998). However, as of late there has been a growing recognition that the welfare state is more than just social insurance and income redistribution policies (Howard 1999). For example, some research has examined the impact of non-cash benefits such as housing and education in assessing the comparative well-being of national populations (Smeeding et al. 1993). Despite this expanded conception, there has been relatively little work on other sources of economic security such as household wealth, for instance (with the notable exception of Wolff 1990). This is unfortunate, since some recent work has persuasively argued that wealth in general, and home ownership in particular, is key to understanding the intergenerational reproduction of economic inequality – at least in the United States and at least with respect to race (Oliver and Shapiro 1995; Conley 1999). In this study, we build on this work by exploring the distribution of home ownership in a cross-national perspective.

We see three major reasons for incorporating a focus on housing tenure (the proportion of the population which owns their own residences, as opposed to occupying private or government owned rental properties). First, home ownership acts as a major source of income security, particularly for the aged, but also confers access to a valuable fungible or collateral asset. Second, home ownership may act as a legitimating factor in generating consent for greater income inequality, given the connection between free market ideologies and the defense of

individual property rights. Third, widely-held private property in the form of home equity increases the number of stakeholders in market systems without redistributing control over productive capital; it thus represents a potential institutional arrangement that minimizes the class tensions arising from the inequitable distribution of property, thereby resolving one of the contradictions between capitalism and liberal democracy.[1]

That said, home ownership might provide a quizzical object of study from a comparative welfare state or political economy perspective. This relates to the fact that housing serves two functions: 1) that of a consumption good (a necessity at that), and 2) that of an investment (Henretta 1984)[2]. If the measure of the "effectiveness" or "extent" of a welfare state is the decommodification of the needs of the citizenry – that is, the conversion of needs from goods allocated by the market to ones distributed as social rights (see, e.g., Esping-Anderson 1990) – then what are we to make of housing? Like other consumption goods, the welfare state can provide and administer it directly in the form of public or social housing. Or, alternatively, it can provide assistance within the context of a private market through rent stabilization laws, income and tax subsidies for renters or owners, as well as incentives for entrepreneurs to build more housing and thus reduce prices. Does the greater universality of individual home ownership imply that even the most "private" aspect of life – the home – has become commodified and stratified along the same lines as income? Or does it mean that property rights are not only an

[1] Home ownership, of course, does not cover all types of asset or equity accumulation; however, it may be the most important one since home equity represents the modal form of household wealth (Wolff 1996). While modeling total net worth itself might be more comprehensive, cross-national data on net worth are thin (Wolff 1996). By contrast, home ownership is a categorical variable that is readily comparable across time and place (with some minor comparability issues) and is collected on many national surveys.

[2]Esping-Anderson (1985: 179) writes about a two-fold role of housing within the welfare state: to provide homes and to provide jobs through construction. This does not distinguish housing policy from any other social spending investment which may have the added, indirect benefit of providing jobs in addition to fulfilling the need it is intended to satisfy.

ideal in capitalist democracies but, rather, have actually become like other social rights of citizenship such as income security, health care or public education?

This investment aspect of housing provides the first important reason for incorporating patterns of housing tenure into a comparative welfare state perspective. The family home – if owned with significant equity – can be viewed as an alternative social insurance mechanism. When unemployment or other financial crises strike, family net worth – primarily housing equity – may assist in riding out the tough times (Sherradan 1991: 149). Further, both the real (inflation-adjusted) and absolute cost of owned housing declines over the life course. First, fixed mortgage payments decline in inflation-adjusted dollars over the course of a loan (and relative to market rents). Second, mortgages are usually paid off before an owner leaves the labor market, dramatically reducing his/her cost of living at a time in the life course when income may decline. And, of course, most housing has increased in value over a generation net of inflation. The end result is that owning – over the long run – may be cheaper than renting (at least in the United States, see, Joint Center for Housing Studies 1997), and it provides a vehicle for equity accumulation that can be cashed in during retirement or other times of need (Saunders 1990). Economists have long recognized this savings/investment aspect of home ownership. Some research in the precautionary savings literature suggests that home equity indeed plays a role as a savings buffer (Carroll and Samwick 1997). However, little research in this tradition has examined how home ownership varies systematically across countries. One notable exception is the work of Chiuri and Jappelli (2000a) that examines the impact of down payment ratios on the age-profile of housing tenure using many of the same countries we use here; however, they do not explore welfare state variables in their analysis (with the exception of judicial efficiency).

A second important reason for investigating home ownership within a comparative welfare states perspective is that an implicit defense of the "free market" (i.e. a weaker welfare state and greater tolerance for economic inequality) is often made on the basis of individual rights (in contrast to the social rights that a strong welfare state provides its citizens; see, e.g., Dahl 1982; Berger 1986; Evans and Stephens 1988). Primary among these rights from an economic perspective is the right to private property. According to this defense, it makes little difference if someone falls on the income distribution when they are able to own their home or business and thus have a source of significant equity, a stake in the "American" (or "Italian", etc.) dream. It may be argued that, in fact, home ownership acts as a legitimating factor in generating consent for greater income inequality[3], given that the distribution of home equity does not match the distribution of productive capital or labor market position. Rex (1968) argues that one's "housing class" – their position in the housing market – is distinct from their labor class, given the inheritability of housing, and geographical variation in competition for housing. Higher income may be used to secure better housing, but it is not always the case that power (or lack of power) in one market correlates to power in another, and therefore may obscure perceptions of class exploitation.[4]

A third, and we feel, major, reason for considering the intersection of home ownership and the welfare state relates to the tensions between property rights and personal rights under

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[3] Compare this to Szelenyi's (1983) investigation of the causes of housing inequalities within planned economies, which finds that the equitable distribution of incomes contributes to the toleration of inequality in the distribution of housing. Not surprisingly, just as state intervention is seen as the antidote to the inequitable distribution of property within market societies, subjecting high quality housing to market principles was one suggestion for reducing inequalities in state socialist societies.

[4] As far back as 1887, Engels wrote about the issue of worker ownership of housing – which at that time was still relatively rare – however, he claimed that home ownership and accompanying debt were another way in which

liberal capitalism. Traditional perspectives of the welfare state emphasize its role as a provider of "government protected minimum standards of income, nutrition, health, housing and education, assured to every citizen as a political right, not as charity" (Wilensky 1975: 1). However, some recent scholarship convincingly makes the case that a more thorough conception of the welfare state requires a consideration of more than just programs that redistribute income or provide for goods and services outside the marketplace (for example, tax expenditures with social welfare objectives [Howard 1997]; imprisonment policies [Western and Beckett 1999; Beckett and Western 2001]; the military [Gifford 1999, 2002]).

By taking a more holistic view of the *composition* of the welfare state, we must consequently revise our views of the *functions* of the welfare state. One alternate view emphasizes that welfare states do not merely provide a social safety net, or decommodify the provision of goods and services that are deemed necessities; rather, an important welfare state function is the resolution of the contradictions of democratic capitalism. Scholars in the Marxist tradition have long recognized the role of the state in this process, though they have typically focused on managing "the crisis of overproduction" through the regulation of labor at the expense of other inherent tensions (for example, Piven and Cloward 1971) or through increased government consumption is used as a countercyclical fiscal tool to regulate unemployment (Griffin, Devine, and Wallace 1982).

However, the "crisis" of overproduction is not the only tension within the capitalist system. Political theorists as far back as Plato have recognized the tension between the interests of property and democratic governance. An essential concern with participatory democracy has been the prevention of the property-less masses from expropriating the assets of the propertied

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workers' autonomy was diminished by financial obligations and geographic ties to their local employers (Engels

few through referenda. Safeguarding against this situation was a major concern in 18th and 19th century political philosophers, with deep roots in the Scottish enlightenment. Adam Smith famously observed that the stability of any society was directly related to the material condition of the majority, and the increased purchasing power of the lower classes could aid in the advancement of democracy. Yet the political participation of the lower classes was nonetheless largely relegated to that of passive instruments. For John Locke, the ends of political society and civil government were the preservation of property, by which Locke meant the "lives, liberties, and estates" of a freely associating collectivity (Locke 1986 [1690]). The legitimacy of government itself is ensured only by the consent of those possessing real (i.e., productive) property, they being the only persons capable of freely placing their personal *and* material interests under governmental authority.

The centrality of the tension between property and representative governance was not lost on the framers of the American republic, and containing the tensions arising from the inequitable distribution of property and proves to be an important theme of *The Federalist Papers*. (Hamilton, et al 1981, especially volumes 10 and 46). Yet Williamson (1960) shows that property requirements for enfranchisement differed across the American colonies (and later the original American states) with several allowing participation based solely on the accumulation of household goods. What was critical was the limitation of enfranchisement to those with a material stake in the stability and well-being of the polity.

The early American cases illustrate in small measure the variation across time and space in institutional arrangements designed to contain the volatility associated with property and personal rights. Bowles and Gintis' (1986) argue that historically, the expansionary tendencies

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1969).

of both capitalism and liberal democracy periodically has resulted in periodic "clashes" of property and personal rights. Tensions occur as the power conferred by wealth and the ownership of the productive apparatus – even where efforts are made to curb this power – confronts a mass of workers and the dispossessed emboldened and unified by a rich, historically salient discourse of personal rights (Bowles and Gintis 1986:33). Given the prohibitive political and military costs of forcibly displacing the discourse of personal rights, states have historically instituted a series of historically contingent structural arrangements designed to stabilize the contradictions between capitalism and democracy. "Lockean" strategies limited political participation to holders of property, while subsequent "Jeffersonian" accommodations sought to expand participation through the distribution of property. Both the "Madisonian" and "Keynesian" traditions similarly sought to neutralize conflict by incorporating the dispossessed into the capitalist system under conditions beneficial to capital. As the franchise was gradually extended, Madisonian strategies promoted the political division of the productive majority along lines such as vocation, region, religion and race, thereby preventing the emergence of a common political project capable of engaging the power of capital. The period of Keynesian economics saw the interests of workers and the poor nominally aligned with that of capital through the increase of trade unionism and collective bargaining arrangements, and through the implementation of welfare state institutions that were strongly tied to national economic performance (and by extension, *corporate* economic performance, given the increasing global mobility of capital). Their stake additionally increased with their growing purchasing power and their importance to the capitalist system as consumers.

The Keynesian paradigm thus resolves the contradictions between personal and property rights in the novel fashion of creating the stakeholders so pivotal to Locke's political thought, but

without giving them control of the productive process; yet it simultaneously expands political participation in a way that ensures a modicum of social harmony, at least in the economic sphere. Daunton (1987) claims the emphasis on individual ownership in British housing policy during the Thatcher era was a deliberate attempt to change British society, with the intent of creating a "property-owning democracy" capable of breaking down "the antithesis of profits and wages and … [creating] … an identity of interests between entrepreneurial success and social benefit" (p. 5). Saunders (1990) disputes the success of this strategy in achieving a class dealignment among workers, but nevertheless contends that the growth of home ownership in 20th century Great Britain amounts to one of the major social transformations of its history, by affecting the distribution of wealth in ways which have allowed a majority to amass significant assets (see also Pahl 1975).

Despite such compelling theoretical reasons for its consideration, comparative welfare state researchers have been surprisingly silent on the issues of housing policy and home ownership. In fact, Ulf Torgersen (1987) calls housing, "the wobbly pillar under the welfare state." Wilensky (1975) avoids the issue of housing because – he claims – it is at the epicenter of too many public and private forces to make sense of.[5] Without a doubt, a lack of reliable data has additionally contributed to the exclusion of housing from welfare state analyses. But the history of housing policy in the developed world also gives some insight to why housing has been investigated primarily with respect to its role as a physical necessity, rather than as a means of income-support. Up until about 1880 the governments of Western capitalist countries saw housing principally as a health issue. Crowding had been linked to the spread of disease, so the

[5] This is a particularly unfortunate omission since in other work Wilensky has shown that property taxes (as opposed to income or consumption taxes) are the most difficult to sustain – an issue obviously related to housing provision as well (Wilensky 1976: 14-23).

relief of unsanitary and overcrowded urban living conditions through state regulations of landlords became the central issue of government housing policy (Bullock 1991; Doling 1997). By 1880, housing had begun to be viewed as an economic issue as well, and housing regulations regarding rents and tenant rights began to emerge across Europe (Bullock 1991; Doling 1997; Pooley 1992).

However, housing was still only viewed as a consumption good – that is, as a cost with which citizen-renters struggled. It was not until after the Second World War that housing policies among the industrialized Western countries started to diverge. In war-ravaged countries the provision of affordable social housing became (or remained) the most central concern of governments – due to the obvious crisis brought upon by the large-scale destruction of much of Europe's housing stock (McGuire 1981). In other countries such as Canada, the United States, and Australia – which did not face the devastation of bombing campaigns – the state had the luxury of focusing on increasing rates of home ownership as a policy goal. Most European governments lagged far behind and did not pursue this policy goal as a primary objective until much later – around the 1970s and 1980s. Britain under Thatcher's leadership was not alone in this policy shift towards increased home ownership; for example, Germany at this time also began emphasizing the provision of privately owned homes, even if they were socially financed (Kleinman 1996: 90-123). Likewise, even the most progressive welfare states (with respect to income support) began to diverge in their housing policies around this period: Denmark pursued a free market strategy to increase suburban home ownership, while the Norwegians and Swedes pursued more public, social housing strategies (Esping-Anderson 1985: 180). Thus the historical development of housing policy suggests that the same classification mechanisms that scholars have used for income redistribution do not hold for housing policies. Traditional welfare state

classification schemes deserve to be revisited in the light of what we now know about these divergent housing policies, particularly in light of their links to the income-support functions of the welfare state.

There is at least one notable exception to the tendency towards viewing housing through a narrow lens of consumable (albeit necessary) goods, however. Kemeny (1980, 1981) examines rates of home ownership in Australia, Britain and Sweden and finds that Australia had the highest rate of home ownership and the lowest rate of government spending. Sweden had a reverse pattern, with Britain falling somewhere in between. Later work applying similar tests to a larger number of countries apparently confirms this finding, at least in a bivariate framework.[6]

For Kemeny, the causal arrow connecting welfare state policies to housing outcomes runs in the direction from housing-ownership conditions to social policy preferences and outcomes. He claims that the economic structure of ownership versus renting leads to different policy preferences among the polity. Specifically, he argues that "housing comprises such a large item in the household budget that tenure differences will have profound implications for resistance to or acceptance of public collective intervention." He goes on to explain that "the skewed lifetime housing costs of owner occupation, whereby the bulk of the costs are concentrated in the early years of the family cycle rather than spread evenly as in renting, functioned as a structural deterrent to both high taxes and high levels of social security" (Kemeny 1992:121).[7] Those in the labor market bear the heavy burden of down payments and mortgages; the elderly – who

[6] Schmidt (1989) finds a correlation of -.90 between total public expenditure and owner occupancy for a group of 17 countries; the correlation is -.83 when he substitutes public social security expenditure for total expense.

[7] He continues, "the highly individualised household burden of housing in owner occupation will thereby act as a deterrent to the implementation of equalising mechanisms of the welfare state because housing costs absorb such a high proportion of the household budget that it will generate resistance to collective arrangements in other areas." (Kenemy 1992: 121-2).

comprise the largest group of social insurance recipients – have lower costs since they are more likely to reside within a fully paid-off house that requires little in the way of income. However, these high housing costs born by the working population preclude their support for progressive income-support policies (and the associated higher taxes), especially when those benefits go to the elderly who may have the lowest housing costs of all. By contrast, rental markets require a more-or-less steady – even rising – stream of income over the life course since rental prices generally outpace inflation. The problem with the owner-occupant, low benefits welfare state model – of course – is that individuals who do not manage to secure a home when their incomes are high are in trouble when they retire from the labor force or experience some form of income shock such as layoffs or unemployment. In this way, the model of owner-occupancy appears to fall within the residual welfare state paradigm. Kemeny (1980) thus concludes that widespread home ownership in low welfare expenditure countries might only serve to exacerbate inequalities. However, his conclusion assumes that the income distribution and the ownership distribution map very well onto each other.

In contrast to this assumption, Castles (1998) finds that the two distributions (income and home ownership) do not match up perfectly (at least among retirees). In the countries with the greatest income inequality, the home ownership rates among retirees in the lowest income decile are the highest. Castles writes, "the inclusion of the benefits of home ownership as part of the income concept markedly reduces the gap between the average income of older people and the average income of the total population" (Castles 1998: 16). Castles also finds that among OECD countries the rate of home ownership is inversely correlated with government revenues and expenditures in a variety of categories, suggesting that home ownership might indeed act as a form of private insurance in lieu of public welfare. However, Castles does not control for

income inequality, making it unclear how much of the effect is due to inequality per se and how much is due to government spending; the fact that he finds associations for variables that should not theoretically be related – such as health expenditures – raises the issue that the findings might be spurious.

Following this discussion, the nature of the relationship between home ownership rates, inequality, and social policy is not entirely clear. Here is where we would like to offer two competing hypotheses:

H1: On the one hand, it may be the case that higher degrees of economic equality are associated with more universal home ownership since in the absence of "winner-take-all" housing markets, homes would be more affordable to a wider number of households. This is the "income effect" of equality and transfers. Among those with high incomes, housing equity is a smaller component of total wealth as compared to liquid assets such as stocks and bonds (Wolff 1996). For low income households, the equity of a primary residence is the modal form of wealth and the largest share. Thus, policies that transfer income from rich to poor or which flatten the income distribution may lead to greater home ownership rates.

HA: On the other hand, there is the "substitution effect." That is, it is possible that societies with greater income inequality have higher rates of home ownership as an alternative form of "private" social insurance[8], particularly where government investments in social welfare are low. In other words, home ownership becomes an income-stabilizing institution over the life course when state-level institutions are weak in this regard.

[8] Kemeny (1981) suggests that this phenomenon may be partly explained by the tendencies of homeowners to support more conservative state policies which protect their property interests from increased tax burdens that may be required to finance more generous and/or universal social insurance programs. However, it should be noted that individual-level research conducted in Britain has failed to show a link between individual's political views on state welfare programs and housing tenure (Saunders 1992).

We now turn directly to an evaluation of these competing hypotheses by investigating the distribution of home ownership at the national level using random effects regression models.

Data and Method

In order to address these questions, we examine data from the Luxembourg Income Study (LIS). The LIS is not a dataset itself; rather, it is a repository for many datasets that span 24 nations (as of last count). The endeavor of the Luxembourg Income Study is to harmonize data from many nations in order facilitate cross-national comparisons. The LIS staff attempts to maintain the greatest level of detail offered by each national survey with respect to various issues, while at the same time providing comparable measures[9]. Approximately 25 nations have data on home ownership for at least two survey years[10] . These countries are predominantly developed OECD nations but also include others such as the Republic of China, Israel and one nation of Eastern Europe (Hungary)[11]. Table 1 presents a full list of the countries analyzed.

[Table1 About Here]

Making multiple observations of each country provides opportunities to increase the precision of parameter estimates, but also potentially imposes error estimation techniques not

[9] For a fuller discussion of the LIS design, please see Tombeur (1997).

[10] Luxembourg would have had more than one data point; however, the 1991 and 1994 Luxembourg data were eliminated since 80 percent and 93 percent, respectively, of the respondents were "not applicable" for the housing tenure variable for those years.

[11] We exclude these countries when we shift to the welfare state analysis since there are data limitations and theoretical reasons not to consider them in the same universe. However, for the purposes of examining the impact of income inequality – without any welfare state considerations – there is no a priori reason to exclude post-Communist or non-Western countries (for example see Szelenyi 1983 for a treatment of the distribution of housing in 1970's Hungary). However, we do run analysis with only the "traditional" Western welfare state countries and also present those results in Table 3.

required by a strict cross-sectional analysis. While not specifically longitudinal on an individual-level, an obvious advantage of multiple observations is that it allows measurement of the within-country variation in economic conditions and welfare efforts as they relate to overall rates of home ownership. On the other hand, some of the observed aggregate level relationships may be the result of other, unobserved forces related to the political, social, or cultural character of the fixed units themselves; specifically, countries with high levels of home ownership may tend to resist progressive welfare policies, but the relationship may not be causal in the way described by Kenemy (1981). Rather, both stingy welfare budgets and high rates of home ownership may reflect a strong "individualist" or "property rights" culture or even the effects of demographic structure; in other words, changing one distribution (i.e. raising the rate of home ownership) will not affect the other (welfare universalism).

Considering this, we performed several tests to determine the appropriate estimation method. We conducted a Breusch and Pagan (1980) Lagrange Multiplier Test to ascertain whether the residuals were independent when country effects are treated as random. The null hypothesis states that the residuals are constant across countries (that is, their variance is consistent with 0); its rejection indicates that the error structures are heteroskedastic, and that ordinary least squares (OLS) would not be the best, linear unbiased estimator. Estimating the models by treating as random disturbances within a unit-specific distribution can solve this problem. The Breusch –Pagan results for the base model yielded a highly significant Chi-square value ($\chi^2 = 22.6$, $p < .00001$), an indication that estimating the models using OLS would produce unobserved variable bias. Random effects estimation would seem more desirable.

On the other hand, treating the unit-specific errors as fixed and estimable (i.e., using "fixed effects") may avoid inconsistencies due to omitted variables, (though this comes at the

price of lost degrees of freedom; see Greene 2000). We therefore conducted a Hausman (1978) specification test to determine whether the difference between random and fixed effects coefficients is systematic. A significant difference in the coefficients indicates correlation between the random effects method's unit-specific residuals and the independent variables. Under these circumstances, random effects estimation is not appropriate, and a fixed effects method which controls for each unit (save one comparison category) should be used. The results of the Hausman test showed that random effects are sufficiently consistent and more efficient when compared to fixed effects ($\chi^2 = 1.09$, $p < .580$).

For the subsample of only those cases with welfare data, OLS is found to be consistent and efficient (Lagrange Multiplier Test Chi-square value of 1.89, $p = .170$). When estimating the model with social welfare expenditures included, neither the Breusch-Pagan nor Hausman tests produce significant results (respectively, $\chi^2 = .370$, $p = .545$; $\chi^2 = 1.35$, $p < .718$). We therefore conclude that unobserved variable bias related to the fixed units themselves is not a problem, and for consistency, estimate all our models using random effects.

To these data, we append variables from the *Comparative Welfare States Data Set* (Huber, Ragin and Stephens 1997). This data set compiles and makes comparable demographic, social spending, political, and economic variables from a variety of sources[12]. However, in combining these two data sources, we lose a number of country-years. First, the Comparative Welfare States Data Set ends in 1992 for most countries; thus for the welfare state analysis, we lose post-1992 case years from the LIS. Also, the Huber et al. dataset includes some countries that the LIS misses, but also lacks a lot of the countries that the LIS includes. Thus, a number of

[12] For a fuller description of the construction of this dataset (or for the data themselves), please see the documentation provided online at <http://lissy.ceps.lu/access.htm>.

countries drop out for this reason. Among the countries that are included in both datasets, however, missing data for individual years is not a problem. Table 1, below shows the various country-years that are included in the analysis (along with their two-letter codes that are used in scatter plots)[13].

Measures

Table 2 shows descriptive statistics for the variables included in the analysis.

[Table 2 About Here]

Home Ownership: We coded home ownership (LIS Variable D22) in a very simple manner for some countries (i.e., whether the primary residence was owned or rented); however for other countries – particularly post-communist ones – there were a myriad of residence categories. We collapsed these categories into "own" or "not own." We counted those households who owned their homes outright and those who were in the process of purchasing it or who bought it with a mortgage as owners. We counted co-operatives as being owned if units were sellable by the occupant – the litmus test of property rights. Those who lived for free in homes they themselves did not own, or who worked for room and/or board were counted as non-owners. We eliminated three categories from the original survey: "not in use" (0.2 percent of the Danish 1987 data and 1.2 percent of the 1992 Danish data) due to its ambiguity; "farm" (only present in the 1987 and 1992 Swedish surveys) since it was not clear from the Swedish survey whether the farmers owned their farm, or whether they were living on someone else's property (akin to serfdom or sharecropping); and "usufructuary" (2.5 percent of the 1991 Hungarian data; 2.8 percent of the

[13] Additionally, analyzing values of Cook's D – which uses information about the standardized residual and the deviation of any predictor from the mean to identify extremely deviant cases – indicates that two country years,

1994 Hungarian data; 2.7 percent of the 1991 Italian data; 3.1 percent of the 1995 Italian data) since it is not clear whether this represents a property right (for example the ability to sell a house that leases the land under it) or whether it is merely the use of another's property.

It is important to note that this "owner occupancy" measure is – by definition – an underestimate of the total number of families that own homes, due to the fact that some – though few – families may rent the primary residence in which they live, but own other property that they rent to others, from which they nonetheless experience the social insurance benefits of home ownership as an investment. Though data are not available to explicitly investigate this group, we expect that the number of families who fall into this category is relatively low and that that their classification as renters is not a serious source of bias in our models. Likewise, we collapse owners with substantial mortgage debt together with those who own their homes outright. This is another limitation to the analysis since any expected social insurance effects should depend on the amount of equity in the home and the point in the householder's lifecycle. An owner who still owes 50 percent of the value of his/her home to a bank may have a very different outlook to retirement and social insurance at age 35 than at age 70.

Of course, homes vary in value and thus should differentially serve home owners as buffers to income shocks. Ideally, we would employ data on housing value and equity, but these are not currently available cross-nationally for multiple time periods. Nonetheless we were able to employ three controls for the accessibility of home ownership: the relative cost of buying a home, the cost of borrowing money, and the out of pocket expense to the borrower.

Switzerland in 1982 and Finland in 1987, inordinately influenced the estimates. These were dropped from the analysis.

Housing prices: To control for the overall affordability of home ownership, we measure the ratio of house prices to annual GDP per capita. Data come from Kennedy and Anderson (1994), and are based on samples of transaction prices for exiting housing units in 1990, as reported by real estate associations in various countries (see Kennedy and Anderson 1994, Annex I for a full description of the data coverage). While we were only able to obtain data for a single time period, and therefore lose within country variation, Kennedy and Anderson (1994) additionally show that across the 15 industrial democracies they examine, the range of nominal growth in housing prices averaged 8.5% between 1970 and 1992, while real growth rates (adjusted for consumer price inflation) averaged only 1.1 %.

Interest Rate: Since the total cost of purchasing a home depends largely on the cost of financing, we include a measure of bank lending interest rates for private sector loans. Although it typically governs short to medium term transactions, the bank lending rate was deemed more appropriate than the central bank discount rate (the "overnight" rate at which bank's may borrow from one another), and the government bond rate. Results were consistent in models specifying each rate separately, partly because lending rates themselves reflect central bank discount rates (which is to say, government efforts to regulate economic behavior through monetary policy). These data come from the International Monetary Fund's *International Financial Statistics Yearbook* (1996). To capture some of the longer-term effects of the cost of borrowing (i.e., the rate of home ownership will tend to be a cumulative process, while interest rates typically fluctuate on a short term basis), we employ this variable as a rolling five-year average.

Down Payment Ratio: A second measure of the accessibility of home ownership is the average down payment required by lenders to secure a residential home loan. We use Chiuri and Jappelli's (2000b) data, which averages the minimum down payments required on "conventional loans, without mortgage insurance, government guarantees or subsidies" (p. 21) within a given decade.

Income Inequality: We measure income inequality by the Gini coefficient, calculated on (post-transfer and taxes) family income with an equivalence scale of the square root of family size. To measure sensitivity in the data, we also tested the Atkinson index (with relative ratios of 1 and .5)[14]. Results were not sensitive to the change in inequality measure, so we present only the results from the Gini specification. This variable comes from the LIS and is calculated by LIS staff. The Gini coefficient is a summary measure of the deviation in the Lorenz curve of the income distribution.[15] The formula for its calculation is shown in Equation 1:

$$G = \frac{(N-1)}{N(\sum_{i=1}^{N} i - N)} \frac{1}{\bar{y}} \sum_{i=1}^{N} (\bar{y} - y_i)(N+1-i) \qquad (1)$$

[14] The alternative measure we use for sensitivity analyses, the Atkinson Index (Atkinson 1970), is calculated using the following equation:

$$A(\varepsilon) = 1 - \left[\frac{1}{N} \sum_{i=1}^{N} \left(\frac{y_i}{\bar{y}} \right)^{1-\varepsilon} \right]^{\frac{1}{1-\varepsilon}};$$

the LIS set ε = 1 and ε = .5, alternatively, and we find that our results are not sensitive to either formulation (as compared to the use of the Gini).

[15] In other words, it is a measure of dispersion within a group of values, calculated as the average difference between every pair of values divided by two times the average of the sample. The larger the coefficient, the higher the degree of dispersion.

Where *i* indexes families, N is the number of families in the population, y_i and $\overline{y}_i$ are the income of family *i*, and the average income, respectively. The Gini coefficient, G, represents the area between the Lorenz-curve and the diagonal line.

Social Insurance: Social insurance measures the total amount of social security benefit expenditures (i.e. excluding administrative costs) expressed as a percentage of GDP[16]. This variable comes from the *Comparative Welfare States Data Set* and is available for only a subset of country-years[17]. The data originally come from the International Labor Office 1960-1992, *The Cost of Social Security*.

Government Health Care Expenditures: As a litmus test for spurious effects of the social insurance variable on home ownership, we predict government expenditures on health care as a proportion of GDP. Since all the countries in the analysis (with the exception of the United States) have universal health insurance, within country or cross-national differences in health spending should have no effect on home ownership rates to the extent that home ownership acts as a social insurance mechanism. Where the state provides care on a universal basis, there should be no significant economic insecurity associated with various levels of health expenditures. However, if this variable is significant, it should raise questions about the validity of the social security variable. If health care expenditures behave similarly to social insurance in the models, it may indicate that some unobserved characteristic of "generous" welfare states

[16]A related variable that was tested but is not presented in the tables is the de-commodification score calculated by Esping-Anderson (1990) as a measure of welfare state effectiveness. It is calculated for one point in time (1980) and thus cannot vary within countries and drops out of fixed effects framework as it is de facto controlled. This variable was highly collinear with the welfare-spending measure and had the same effects. Thus, cross-national results were not sensitive to the substitution of the welfare-spending variable for the decommodification score.

actually affects home ownership rates, rather than the hypothesized dynamic of home ownership as a private social insurance instrument. If, on the other hand, social insurance spending (income support) is a significant estimator of home ownership and government health care expenditures are not, we can conclude that the observed relationship between social insurance and home ownership reflects concerns for income security, and is not just a spurious indicator of larger, unmeasurable welfare state–society dynamics.

Tax Subsidy Environment: We anticipate that government interventions into housing markets will also impact (or reflect) patterns of residential tenure. Ideally the models would include currency values of government programs (such as tax incentives) specifically designed to encourage home ownership, but these are not widely available in a comparable time-series, cross-sectional format. Instead, we use information from Scholten (1999) and Henderschott and White (2000) to characterize countries' overall efforts to encourage home ownership through taxation policy. Scholten identifies three "tax regimes for owner-occupied housing" based on whether or not a country taxes as income imputed rents (i.e., an estimate of the income one gives up by living in a house rather than renting it out), and the basis upon which that value is assessed. In general, the less tax on imputed rents, the more pro-ownership a country (with no tax being the most favorable situation for owner occupancy). Henderschott and White similarly call attention to low taxes on imputed rents (along with capital gains) as a fiscal incentive to home ownership, but additionally point out that the deductibility of mortgage interest expenses is "a means of extending the fundamental tax advantage of owner-occupied housing … to the less wealthy households who cannot finance their real assets entirely with equity" (p. 262).

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[17] Huber, Ragin and Stephens (1997) discuss several comparability issues for these data.

We combine Scholten's distinction between the presence or absence of taxes on imputed rents (ignoring the difference on how values are assessed) with information on whether mortgage interest expenses are deductible from regular income to create a four-category typology of pro-ownership tax environments (Table 3)[18]. Only those countries with social spending data are categorized here (with the exception of Spain, on which both Scholten and Henderschott and White include information). Cell 1 represents the least favorable tax subsidy environments, where imputed rents are taxed, and not mortgage interest is deductible from regular household income. Its opposite number, Cell 4, represents the most favorable environment. Cells 2 and 3 contain countries with a mix of deduction and imputed rent strategies. Models were initially estimated with tax environment as an ordinal variable, with Cell 3's extension of tax advantages to the less wealthy through mortgage interest deductions coded as more favorable to home ownership than Cell 2. This produced a better fit to the data than estimating with a dummy variable for the most favorable countries in Cell 4 (and fit better than estimating with any other category as a dummy), and so the ordinal variable is employed. In either case, estimates of the coefficients remained consistent, as did their significance.

Public Housing Expenditures: We further include a measure of public housing expenditures as a proxy for government activism in housing markets, albeit one which would tend to work against home ownership. It may be the case that the governments of low-ownership countries still provide a measure of economic security to their citizenry by drastically lowering

[18] Belgium, Denmark, Finland, and Sweden allowed deductions from capital gains and real estate income gains (with some credits for losses, comparable to credits for any other business losses). Only France taxed all capital gains, while the US only taxes gains above a very high level. This dimension is therefore excluded from the typology.

housing costs not through increased owner occupancy but, rather, through low rents in public housing and rental assistance payments for some occupants of private dwellings. In cases where income security is not a factor in the decision to rent or buy, we would expect low home ownership rates where the cost of ownership is high relative to renting. Public housing data come from the OECD's *Social Expenditures Database (SOCX)* (2001), and measure government rental subsidies and other cash housing assistance benefits, as a percentage of total GDP. Data were only available for 12 countries (of which 10 were analyzed in the social spending models), with a mode of 3 years for each country (Denmark and Italy had 2 years and 1 year of data, respectively, while Australia and Germany had 4). This left only 18 usable cases for models including a measure of social welfare spending. To increase the number of usable cases, each country's average social welfare spending was substituted in the missing years. This produced point estimates similar to those obtained from the smaller set of cases, but fit the model less well. We therefore report findings for the smaller number of cases.

Trend: Since both income inequality and the rate of home ownership have been increasing over time in many countries (as have welfare spending and a number of other variables), it is important to account for possible trend effects that would generate a spurious association between the substantive variables of interest. Some previous findings may result from trend effects that are not adequately accounted for (see, e.g., Oswald 1999: 9-10). Thus, we include the year of survey as a scale regressor.

Other Demographic and Economic Variables: In addition to the variables listed above, we tested whether the results presented below were sensitive to the addition of a number of other

measures. Included in models were the following demographic indicators: female headed households as a percentage of the total number of households, mean age of household heads, average family size (in addition to its inclusion in the income-to-needs formulation of the Gini coefficient),[19] urbanization level (population density or percent living in cities),[20] the level of economic development (as measured by real GDP per capita),[21] the rate of GDP growth as a measure of the current state of the economy, and the unemployment rate.[22] In all specifications when income inequality and trend were controlled, these variables were not significant. More importantly, the inclusion of these measures did not affect the results of the variables of primary interest, except in cases where we put them in *en masse*, in which case multicollinearity became a problem due to the small number of cases. These models are not presented, but are available upon request.

Given the unbalanced nature of the country-years and the uncertainty of the correct model specification, we conduct jackknife and extreme-bounds analyses to assess the sensitivity of the coefficients. We find that the estimates of the main hypothetical variables, gini coefficient and social spending, are consistent when any of the countries are excluded in turn, or when any other variable in individually dropped from the full model. Results are reported in Appendix A1.

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[19] The preceding variables all come from the LIS.

[20] This variable comes from the World Bank Group (2000), World Development Report 2000.

[21] This variable is expressed in constant dollars (using the Chain index based on Purchasing Power Parities [PPPs] in 1985 international prices). This formulation of GDP is recommended (over, for example, the Laspeyres Index) for inter-temporal analysis "as it brings changing relative prices into the analysis explicitly through a chain index" (Huber, Ragin and Stephens 1997: 9). Controlling for this variable is meant to factor out the overall level of economic development of the country for a given year. The source for this variable is the Penn World Tables; for more information see, e.g., Summers and Heston (1991). In addition to the main, linear term we tried a quadratic term since the relationship between GDP and inequality has been shown to be U-shaped along the lines of the famous Kuznets curve of economic development.

Findings

The first portion of the analysis explores the determinants of home ownership at the macro level. We can see from Figure 1 that no simple explanation will account for the cross-national variation in home ownership. For example, the raw data undermine explanations which draw attention to cultural, linguistic or religious similarities or a common historical lineage (for example, a shared colonial relationship or common experiences with communist rule) (see Castles and Mitchell 1993). Among the Anglo-dominated countries, we find the United Kingdom near the bottom of the distribution in home ownership, Canada and the United States in the middle, and Australia near the high end. Likewise, wide variability exists among the "Latin" Mediterranean countries. France and Italy are in the middle of the distribution while Spain is near the upper end. Among the Nordic countries, Finland is near the top of the distribution while the Scandinavian countries are scattered among the lower end, forming perhaps the most unified cultural bloc. Finally, the three countries with the highest rates of home ownership come from perhaps the widest range of cultural backgrounds: Hungary, the Republic of China, and Israel. If we were to expect that urbanization would explain variation in home ownership, we would also be disappointed. While Israel and Australia are highly urbanized and have high home ownership rates, many European countries are also highly urban, with lower home ownership rates – such as the Netherlands, the United Kingdom, Sweden and West Germany.[23] Likewise, Hungary has the highest home ownership rates among these countries but has a lower urbanization rate.

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[22] These variables are also from the Comparative Welfare States Data Base (Huber, Ragin and Stephens 1997).
[23] Urbanization data for the Republic of China – a high home ownership country – were not available.

Figure 2 graphically depicts the lack of a relationship between urbanization and home ownership at the bivariate level.[24]

[Figures 1-4 About Here]

However, an examination of Figures 3 and 4 demonstrates that income inequality and welfare spending do explain home ownership rates (or are explained by them) in a bivariate context. Income inequality is positively associated with more widespread home ownership (r = .221, p = .089), while welfare spending is negatively related to rates of home ownership (r = -.289; p = .097).

Table 4, below, investigates these associations in a multivariate context. We find that controlling for trend effects, a higher degree of income inequality is related to more widespread home ownership in Model 1. For each one-point increase in the Gini, the predicted proportion of home owners in the population increases by 1.1 percent, *ceteris paribus*. The relationship remains consistent when we restrict the sample to those country-years that have data available on the other measure of interest – welfare spending[25] (Model 2). However, we find that this effect is entirely mediated by welfare spending in Model 3. Total government spending on social insurance as a proportion of GDP is significant (p =.034) when included in the model, while the estimated effect of income inequality declines by 60% and becomes statistically insignificant. For each 1 percent increase in social insurance spending (as a percentage of GDP), the home ownership rate declines by more than half a point (b = -.626). Social spending retains its effect

[24] Since Figures 2-4 are based on country averages, they are equivalent to between country models (and not the random effects models presented in Tables 3 and 4. Thus, the graphs represent the following equation: $\overline{y}_{it} = \alpha + \beta' \overline{x}_{it} + \overline{\varepsilon}_{it}$.

[25] These are those countries that both meet our LIS criteria and are included in the OECD welfare state database; thus, they are a more homogenous group of largely Western European and Anglo-Austro-American countries.

(though it loses some significance; p = .059) when we apply our litmus test for detecting a spurious welfare spending relationship in Model 4. However, the alternate spending category – government health expenditures as a proportion of GDP – has no significant effect on home ownership. Thus, we can conclude that the social security spending variable is not merely acting as proxy for some more general, underlying dynamic regarding state spending.

We also find that social spending is a reliable predictor of home ownership when we control for housing costs, characteristics of the housing finance market, and government interventions into housing markets. Because our number of cases is small relative to the number of predictive variables, applying all of our controls in one model would risk multicollinearity. We therefore predict the partial regression coefficients for income inequality and social welfare spending, controlling for each variable in turn. Except in the model which controls for public housing expenditures, this leaves the ratio of cases to regressors above the minimum level of 5 recommended by Kleinbaum, Kuiper and Muller (1988: 318). Of all the models (barring the very-small *n* case of Model 9), Model 5 – controlling for relative housing prices – produces the best fit to the data (R^2 = .482). Increasing the ratio of housing prices to GDP per capita by a factor of 1 will decrease the estimated home ownership rate by 1.4% (p = .081).

As expected, consistently high interest rates depress rates of home ownership in the sample (Model 6). However, while the effect is not significant at or below the .10 level (p = .19), the inability to generalize the effect beyond the sample may be obscured by interactions with housing prices, given that the mortgage payment amounts are often structured so that the ratio of interest to principal decreases over time[26]. The degree to which tax policy environments favor owner occupancy (as we have characterized them) also has no significant impact, and in

[26] Unfortunately, the small number of cases do not allow us to confidently test this assumption.

fact show negative rather than positive effects in the sample. A closer analysis of the negative, though non-significant, effect of tax environments on home ownership using an analysis of variance test shows that the Cell 4 countries with the tax environments most favorable to owner occupancy have the second *lowest* rates of home ownership in the sample (and Cell 1 countries the highest), but the difference between the categories is without significance; for practical purposes, all categories have the same average home ownership rate. Nor do the categories significantly differ in their social welfare spending, although in the sample, Cell 4 countries had the lowest social welfare expenditures on average. The relationship between tax environment and average Gini score, however, is both positive and significant ($F = 6.91$; $p = .001$).

The alternate operationalizations of access to finance markets and government intervention into housing markets in Models 8 and 9 – the down payment ratio and public housing expenditures – are uninstructive. There appears to be no relationship between either limits on the proportion of the total home price that may be financed, or programs designed to ease the affordability of rental housing and owner occupancy rates (though some of this may be due to over-determination of the models related to the decreased number of cases).

Most importantly for our purposes, in Models 5 through 9, the negative effect of social spending on predicted home ownership rates remains consistent and significant. Overall, a 1% increase in social spending as a proportion of GDP decreases the percentage estimate of home ownership by about 0.6 to 0.7%.

[Table 3 About Here]

Discussion

Our analysis provides evidence of an inverse relationship between the degree of economic inequality and widespread home ownership in a country. This lends support for perspectives stressing home ownership's role in ameliorating the detrimental social effects of market forces, over those which see economic parity on the housing demand side as leading to more widespread ownership. It also reveals that welfare spending mediates the relationship between inequality and housing tenure (or reveals it to be spurious).

High rates of home ownership may be a response to low social spending commitments on the part of governments, even when taking into consideration the costs of housing and the accessibility of housing finance markets. On the other hand, we do not have sufficient evidence to conclude that states structure institutional arrangements that privilege home ownership over welfare programs as self-conscious social insurance instruments. In fact, the finding that owner occupancy rates are not affected by taxes on imputed rents and tax deductible mortgage interest, but are strongly related to social safety net commitments may indicate that some states allow market mechanisms to set both home ownership and social spending levels in a "benignly" neglectful, non-recursive manner. For example, where owner occupancy is high and housing investments are generally appreciating in value over the long term, income security may seem a less pressing issue and social spending may be allowed to malinger; this in turn makes the ownership of a home a more attractive social insurance investment compared to payroll contributions to future annuities such as old age insurance, particularly when the government's ability to fulfill its pension obligations is uncertain. The declining faith in, and commitment to, social welfare programs by both the polity and the public might explain the strong, positive

bivariate relationship between both owner occupancy rates and favorable tax subsidies for home owners, and the observable rate of income inequality.

These findings also lead us to revisit the nature and development of institutional strategies for stabilizing the "clashes" of personal and property rights lying at the heart of the contradictions between capitalism and liberal democracy. The "Jeffersonian" promotion of widespread property ownership may act in conjunction with certain elements of Keynesian strategies (such as increasing workers' purchasing power through collectively bargained wage levels), but move in a different direction from, and work at cross-purposes with, others such as welfare state provisions. Further, while state accommodations have historically superseded one another in a contingent fashion, they may not have done so uniformly across countries. Political or institutional conditions may either propel states towards certain accommodations while minimizing the efficacy of others, or stunt the development of decided-upon strategies, leaving states with partial or hybrid accommodations. Again, this could partially explain the negative relationship between social spending and owner occupancy rates, given the additional evidence that social spending mediates the effect of income inequality on home ownership.

Public social spending also performs well in models when housing prices are considered, and predicts home ownership rates better than does access to mortgage financing or down payment ratios. The effect of the costs of home ownership, net of social welfare spending, injects an additional area of complexity into the discussion of home ownership's role in the maintenance of overall social well-being: if the purchase of a home serves to offset low commitments to formal social insurance programs, then monetary policy as a fiscal instrument for regulating the economy in the short term (raising interest rates to slow down the rate of inflation, for example) will undoubtedly affect long term social security for many citizens.

Affecting the price of home ownership by raising the cost of borrowing money will delay the rates at which people "take up" home ownership as a social insurance "program", and thus diminish their overall returns; but it will also slow down the rate at which one's equity – one's "personal trust fund" appreciates in value. In this light, welfare state analysts would do well to consider exogenous factors such a central bank decision making and global flows of capital in addition to more commonly examined factors such as a nation's overall wealth. Though we could not measure directly the cost of buying relative to renting, the lack of a relationship between public housing expenditures designed to reduce the cost of rental housing indicates that simple economic explanations of housing tenure decisions will not suffice to explain overall home ownership rates – particularly given the control for income security. Of course the small *n* in this analysis requires that we consider the results with some caution.

We were not able to address these issues of directionality in the current study. We would expect some endogeneity between variables such as home ownership and housing costs. As discussed above, if it is the case that low public commitments to social welfare investments may lead to increased home ownership as a form of private social insurance, then it may also be the case that state welfare efforts are sensitive to the aggregate of these private investment decisions. That is, that causation works from home ownership through the political process to social spending levels. One strategy for capturing these bidirectional effects would be to deploy instrumental variables – that is, variables that are associated with home ownership but not social spending (and/or vice versa). Unfortunately, we did not have a variable that met this criterion; future researchers may be able to take advantage of such data as it comes available. Another approach to sorting out causal directionality would entail time series analysis with a series of lagged variables as instruments. This would require home ownership, income inequality, and

welfare spending data to be collected on a yearly basis, and in any case may not be of much help in cases where the correlation between variables at *t* and *t-n* are strong and positive. We do not believe that a lack of causal certainty greatly limits the contribution of the present study, however, since it is probably the case that causality works in both directions.

Despite such limitations surrounding the issue of causality, this study has important implications for understanding how state policies affect rates of family-level ownership. On the policy side, for officials who see majority stake-holding as a worthy end of social and economic policy, this study shows that this goal may work at odds with the desire of governments to provide traditional forms of social insurance and/or income support. On the other hand, interventions into the housing market can perhaps be seen as viable alternatives to traditional income-based approaches, particularly where political resistance to redistributive schemes is strong. Viewing the welfare state through this wider lens may lead one to counterintuitive conclusions; for example, following Saunders (1990), one could argue that by the standards of transforming the distribution of wealth to include larger numbers of the working class as holders of substantial, inheritable assets, the Thatcher policy of housing privatization was one of the more progressive welfare state programs in Britain's recent history.

Questions that remain for future researchers to answer also include those surrounding the origins of distinct housing policy choices and regimes. The welfare state as a dependent variable has been an important and growing area of research for political scientists, economists, and sociologists over the last several decades. Much of this research uses multiple factors to explain or predict welfare state structure and spending (Amenta and Poulsen 1996; Cauthen and Amenta 1996; Evans and Skocpol 1985; Hicks 1999; Hicks and Kenworthy 1998; Hicks and Misra 1993; Hicks, Misra and Ng 1995; Hicks and Swank 1984, 1992; Huber, Ragin, and Stephens 1993;

Pampel and Williamson 1993; Skocpol and Amenta 1986; Stephens 1979; Swank 1982). Most of these studies, however, focus on the income redistribution, health, and labor market policies of advanced capitalist democracies.[27] Less work has gone into theorizing housing policy as an important part of the welfare state function. Future research on housing policy should consider its dual role – as provision of a basic necessity and as a family investment instrument – rather than examine housing policy decisions in isolation from income distribution and social insurance choices (as has traditionally been done). While this paper provides an overview of these linkages, it does not investigate the political processes that link the welfare state to housing as consumption good and investment. That should be the domain of future, comparative-historical researchers.

[27] Though plagued by methodological quandaries, studies using the tripartite model of Esping-Anderson (1990) have come to a general consensus that the social democratic regimes, in which the state plays the greatest role in income redistribution, lead to the most equality, whereas the residual welfare states intervene the least. This is despite the fact that residual welfare states typically pursue policies that are more targeted to helping the poor, a situation often called the "paradox of redistribution strategies" (see, Korpi and Palme 1998; Headey, Goodin, Muffels and Dirven 1997). More complicated schemas have also been offered, such as the five-type model of Korpi and Palme (1998) that includes targeted, corporatist, basic security, voluntary state subsidized, and encompassing welfare state / social insurance approaches. The overall conclusion regarding income inequality holds, however, though neither of these categorization schemes explain much when it comes to the distribution of home ownership.

Appendix

Sensitivity Analysis

We performed two types of sensitivity analyses to determine whether the results are driven by the nature of the unbalanced panels or the misspecification of the models: jackknife and extreme bounds analysis. In the jackknife analysis, each country is individually removed from the data set, and the model is estimated using the remaining subset of cases. This indicates whether the results are driven by influential cases. The extreme-bounds analysis tests the coefficients' sensitivity to the models' specification by excluding each variable in turn, and estimating the reduced model. Table A1 reports the lower- and upper-bounds of the random effects coefficient estimates. The results indicate that the main effect of social spending is robust to the exclusion of any other predictor or the exclusion of each country. They are also consistent with those reported in Table 4.

[Appendix A1 here]

Table 1: Countries and Years in Analysis

	Code	Years Available (Gini + Home Ownership)	Years Available (Gini + Home Ownership + Social Welfare Spending)
Australia	AS	1981, 1985, 1989, 1994	1981, 1985, 1989
Belgium	BE	1985, 1988	1985
Canada	CN	1971, 1975, 1981, 1987, 1991, 1994	1971, 1975, 1981, 1987
Denmark	DE	1987, 1992	1987
France	FR	1979, 1981, 1984, 1989	1979, 1981, 1984, 1989
Finland	FI	1987, 1991	*a*
Germany (West)	WG	1981, 1983, 1984	1981, 1983, 1984
Hungary	HU	1991, 1994	
Israel	IS	1979, 1992	
Italy	IT	1986, 1991, 1995	1986
Luxembourg	LX	1985	1985
Netherlands	NL	1983, 1987, 1991	1983, 1987
Norway	NW	1979, 1986	1979, 1986
Poland	PL	1986, 1992, 1995	
Republic of China	CH	1981, 1986, 1991, 1995	
Spain	SP	1980, 1990	
Sweden	SW	1975, 1981, 1987, 1992	1975, 1981, 1987
Switzerland	SZ	1982	*b*
United Kingdom	UK	1969, 1974, 1979, 1986, 1991, 1995	1969, 1974, 1979, 1986
United States	US	1979, 1986, 1991, 1994	1979, 1986

a 1991 contained no social security data; 1987 omitted following influential case analysis;
b omitted following influential case analysis

Table 2: Means and Standard Deviations (Total and Within Country) for Variables Used in the Analysis

	Mean	Standard Deviation	Within Country S.D.	Valid N (Groups)
Home Ownership	.588	.131	.066	58 (18)
Gini Coefficient	28.2	3.95	1.71	61 (19)
Social Insurance / GDP	.203	.074	.021	32 (13)
Health Spending / GDP	.061	.011	.006	38 (13)
Ratio of Housing Price to GDP per Capita (1990)	5.68	1.80	--	49 (13)
Bank Lending Interest Rate (5 year average)	11.0	2.70	1.82	52 (15)
Average Down Payment Ratio (Decade)	.230	.098	.042	47 (13)
Tax Subsidy Environment	1.76	.950	--	54 (16)
Public Housing Expenditures / GDP	.005	.004	.001	33 (12)
Year	1986.5	6.42	5.75	63 (19)

Table 3: Tax Subsidy Environments

Tax on Imputed Rents	Mortgage Interest Deduction from Regular Income: No	Mortgage Interest Deduction from Regular Income: Yes
No	(2) Australia Canada Finland Germany Sweden	(4) France United Kingdom United States
Yes	(1) Belgium Denmark	(3) Italy Luxembourg Netherlands Norway Spain Switzerland

Figure 1: Home Ownership Rates by Country

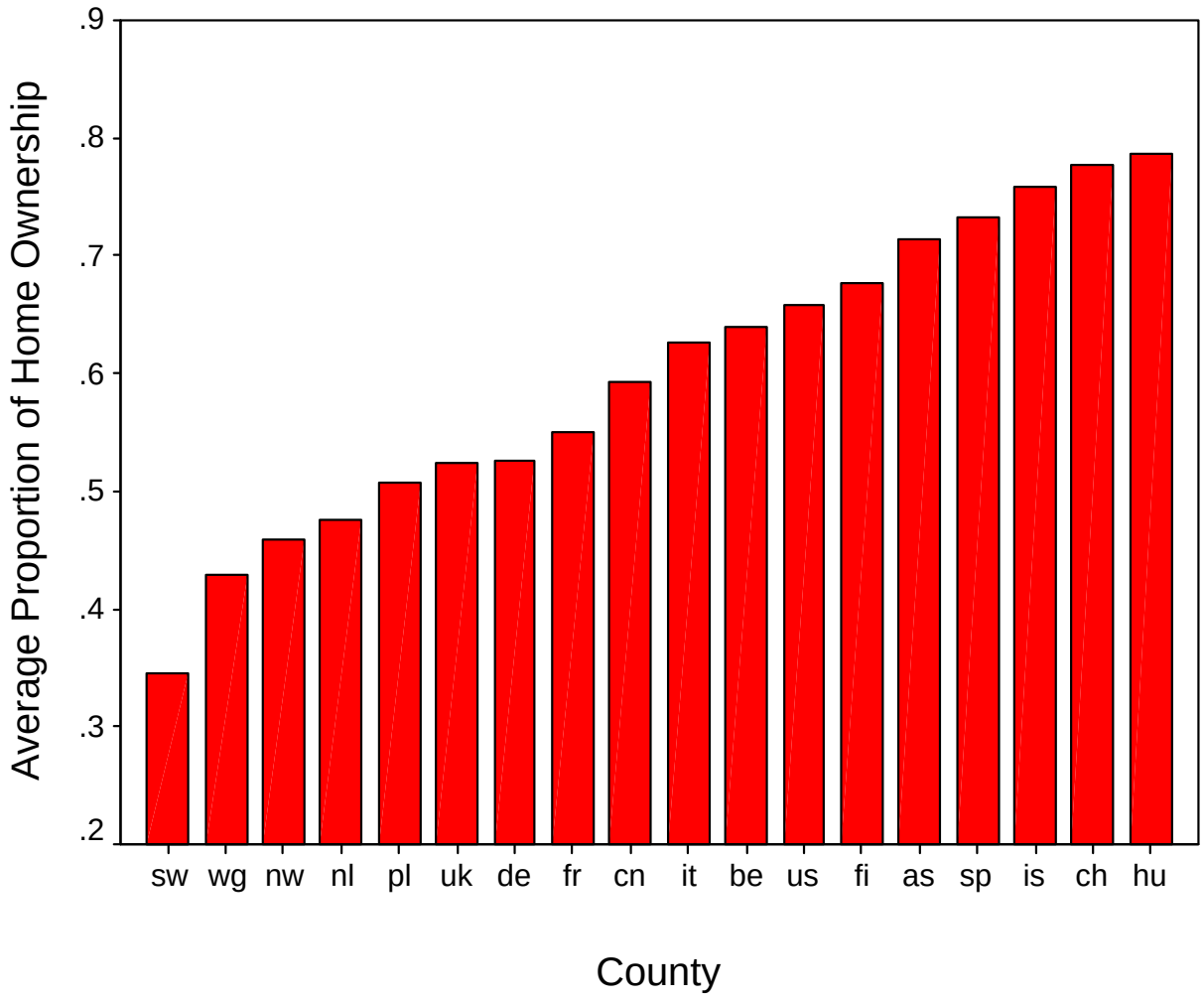

Figure 2: Average Home Ownership Rates by Urbanization Level (1990); Not Statistically Significant

Figure 3: Average Home Ownership Rates by Income Inequality (Gini Coefficient)

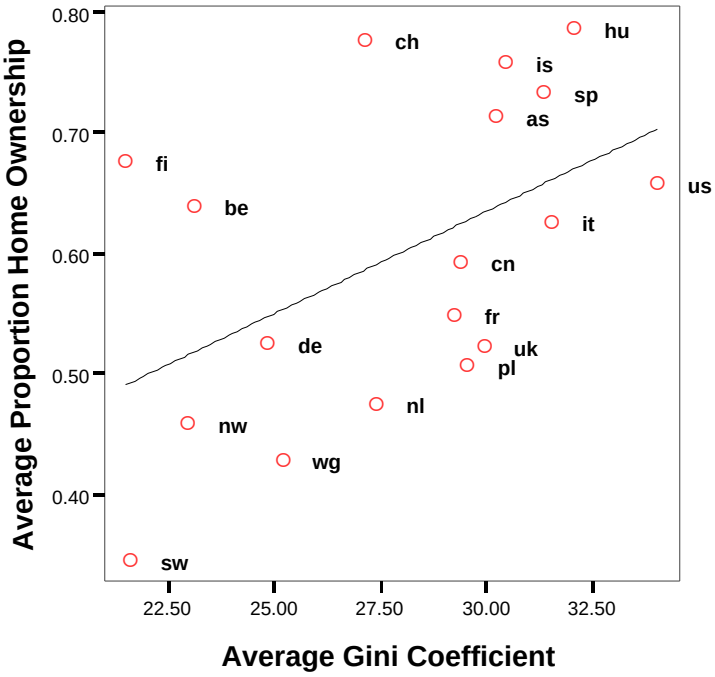

Figure 4: Average Home Ownership Rates by Average Welfare Generosity (Social Insurance Spending as a Proportion of GDP)

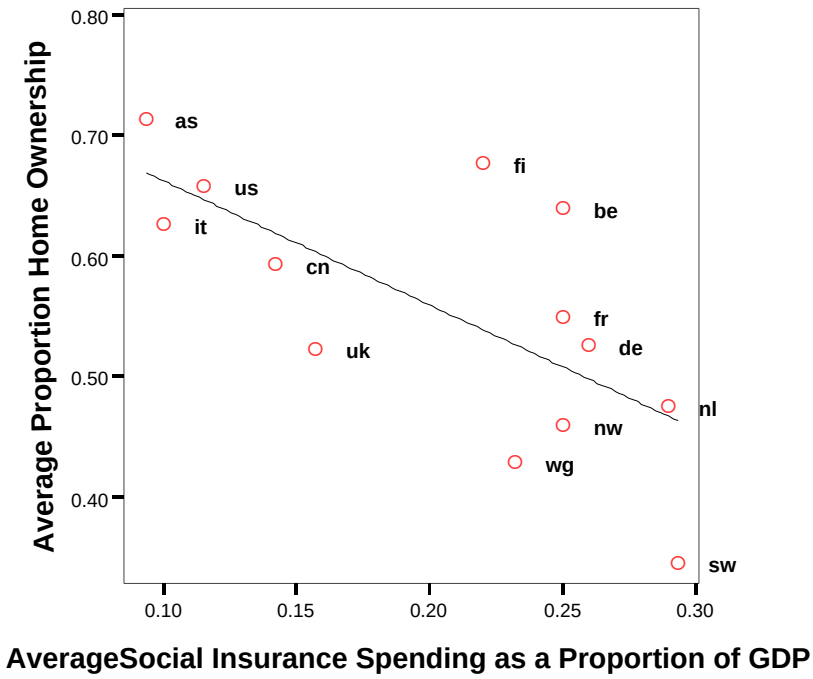

Table 4: Prediction of Home Ownership Rates – Random Effects [S.E. in brackets]

	Model 1: Base Model	Model 2: Base Model, Welfare Subset	Model 3: Welfare Model	Model 4: w/ Health	Model 5: w/ Housing Price	Model 6: w/ Lending Rate	Model 7: w/ Down Payment	Model 8: w/ Tax Environ.	Model 9: w/ Public Housing Exp.
Year	.004**	.005	.008*	.006	.007*	.012**	.007*	.007*	.009
	[.002]	[.003]	[.003]	[.004]	[.003]	[.005]	[.004]	[.004]	[.006]
Gini	.011*	.010^{+}	.004	.008	.008	.002	.004	.007	.004
	[.004]	[.005]	[.006]	[.007]	[.005]	[.006]	[.007]	[.007]	[.005]
Social Insurance / GDP	--	--	-.626*	-.683^{+}	-.610*	-.726*	-.645^{+}	-.559^{+}	-.633**
			[.295]	[.462]	[.254]	[.292]	[.376]	[.320]	[.228]
Health Care Spending / GDP	--	--	--	1.74	--	--	--	--	--
				[2.68]					
Housing Price / GDP per Capita	--	--	--	--	-.014^{+}	--	--	--	--
					[.008]				
Lending Rate (5 year average)	--	--	--	--	--	-.010	--	--	--
						[.008]			
Average Down Payment Ratio	--	--	--	--	--	--	.010	--	--
							[.237]		
Favorable Tax Environment (ordinal)	--	--	--	--	--	--	--	-.017	--
								[.022]	
Public Housing Exp. / GDP	--	--	--	--	--	--	--	--	.052
									[.048]
Constant	-8.24*	-9.19	-15.0*	-11.5	-12.9*	-23.3*	-13.9^{+}	-13.3^{+}	-16.5
	[3.23]	[6.09]	[6.52]	[7.85]	[6.20]	[9.02]	[7.13]	[6.85]	[11.2]
R^2	.190	.264	.395	.413	.482	.424	.402	.423	.648
N (Clusters)	58 (19)	31 (13)	31 (13)	26 (12)	30 (12)	31 (13)	28 (11)	31 (13)	18 (10)

**p<=.01 *p<=.05 $^{+}$p<=.10

Table A1: Jackknife and Extreme-Bounds Estimates for Models Predicting Home Ownership Rates

	Jacknife		Extreme bounds	
	Lower	Upper	Lower	Upper
Year	.009	.014	.005	.012
Gini	-.0002	.010	.002	.012
Social Security Benefits/GDP	-.935	-.482	-.726	-.233
Housing Price / GDP per Capita	-.015	-.044	-.019	-.010
Lending Rate	-.012	-.006	-.010	.003
Average Down Payment Ratio	-.134	.140	-.159	.010
Favorable Tax Environ	-.039	-.004	-.032	-.004
Public Housing Exp. / GDP	.024	.082	-.024	.094
Constant	-28.8	-17.2	-23.3	.309

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