

# How Does Wealth Shape Societies? Cross-National Wealth Inequality in Historical Perspective

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## Abstract

Does the distribution of economic wealth affect political outcomes? A rich theoretical and empirical literature has shed light on the political consequences of income inequality, yet we do not know if asset distribution and changes in asset prices also have political ramifications. In this paper, we approach this question by theorizing about the differences between wealth and income and looking at empirical associations between different wealth measures and democratization as well as partisan ideology. We find considerable variation in the political consequences of different forms of wealth: while agrarian inequality and increases in top-wealth shares inhibit democratic transition, higher capital shares, higher stock prices, and higher house prices are associated with democratic consolidation. Furthermore, higher capital shares are associated with more conservative governments and more mortgage credit with a higher probability of left governments in power.

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# 1 Introduction

How should we think about the political impact of economic inequality? Over the past two decades, political economists have developed a litany of models of inequality and redistribution, largely premised on the well-known model of Meltzer and Richard (1981), that have been used to explain preferences over a vast array of political outcomes, from the structure of the welfare state, through fiscal federalism, to political regimes themselves from autocracy to democracy. The flexibility of the Meltzer-Richard model in terms of providing plausible economic policy preferences and a connection to the income distribution has allowed political scientists to connect micro-mechanisms to macro political and economic outcomes in a coherent and cumulative way.

But also well-known are the empirical troubles of the Meltzer-Richard model when extended to these macro-questions. While most scholarship finds the underlying micro-mechanisms to be empirically accurate – for example, that richer people tend to prefer lower levels of taxation and spending – the empirical arrow from aggregates such as income inequality to political outcomes such as redistribution has been far more contested. Depending on how one measures inequality, empirical relationships can differ dramatically. For example, levels of national income inequality appear negatively correlated with national levels of public spending and taxation, though the Meltzer-Richard expectation is the reverse (Ansell and Samuels, 2014; Lindert, 2004). However, some scholars find evidence that *changes* in income inequality do affect tax and spending outcomes in the expected (positive) direction (?). With regard to regime change, initial work demonstrated a negative connection between aggregate economic inequality and democratization (Boix, 2003), whereas scholarship that broke apart economic inequality into components related to land vs. rural inequality and industrial vs. income inequality found a more complicated story, with rural inequality negatively related to democratic transitions and income inequality positively related (Ansell and Samuels, 2014).

The striking variation in findings about the relationship between inequality and political

outcomes once one measures economic inequality in different ways suggest the need for a broader rethinking about what types of economic inequality ought to have what impacts on political life. Is inequality in the flow of income different from inequality in the stock of wealth? Does inequality produced by agricultural land differ from inequality produced by industrial growth? Does a rising return to capital have different implications if it pertains to financial assets as opposed to residential wealth? Scholarship that takes seriously the political impact of these multiple economic inequalities is still in its infancy. Even Thomas Piketty's magisterial work on wealth and the returns to capital does not distinguish for the most part between different types of capital or in terms of inequality *among* wealth-holders (Piketty, 2014). Since, as Rognlie (2016) has argued, much of the recent rise of capital has been from residential wealth as opposed to traditional financial wealth, exactly how capital and wealth are distributed and to whom may matter just as much as the overall gap between labor and capital and income inequality among wage-earners.

This paper takes a first stab at examining the political impact of inequality produced by various forms of wealth dating back to the mid-nineteenth century for a group of mostly advanced industrial countries. We draw on a variety of newly collected data sources that provide information both around the distribution of wealth and the value of various assets over the past one hundred and fifty years. Although the range of countries with available wealth data is somewhat limited, this data does allow us to address key, unanswered, questions in the political economy literature about what the association is between wealth inequality and various political outcomes and whether that differs from existing findings related to income inequality.

We begin by setting out the existing theoretical debate about the connection between economic inequality and political outcomes from redistribution to regime change. We then ask whether we ought to expect wealth inequality to play out differently than - the more regularly studied - income inequality. We consider, for example, whether wealth would have different political effects if based in land, financial capital, or residential housing. We

then turn to providing descriptive information about a variety of new indicators of wealth inequality drawn from recent work in economic history. Subsequently, we turn to statistical analysis of wealth inequality and various political outcomes - focusing on regime type and government ideology.

We find some indication that the capital's share of income (that is the return to wealth) is associated with democratic consolidation and right-wing government, though it has little relationship with transitions to democracy. Turning to the distribution of wealth - the shares of wealth held by the wealthiest ten, five, and one percent - we find no effect of levels but a negative connection between growth in the share of wealth held by small minorities and the chances of a democratic transition. Finally, we turn to asset prices and credit, finding that growth in house prices is associated with democratic consolidation and a credit market biased towards residential investment rather than financial investment is associated with more left-wing government. The final section of the paper concludes and offers some suggestive causal evidence that helps to address a key concern - the distribution of wealth is not exogenous to political outcomes. Using data on the distribution of soil quality we proxy for wealth inequality and examine its connection to contemporary political outcomes.

## 2 The Debate Around Wealth Inequality in Political Economy

The standard understanding of inequality in political economy developed out of the Meltzer-Richard model and presumes a single dimension of earnings (Meltzer and Richard, 1981). Meltzer and Richard's inequality comes from different earnings in the labor market, produced by a measure of individual 'productivity' multiplied by the number of hours worked. Each individual chooses their level of labor market effort based on the prevailing tax rate and different effort will correspond to different levels of productivity conditional on that tax rate. Taxes are proportional to income and redistributed as lump sum benefits. With this in hand, they then examine the preferred tax rate that each individual would have, maximizing

their net income, subject to their own labor supply choice. In sum, pre-tax inequality reflects (a) individual productivity and (b) labor supply choices (themselves dependent on tax rates) and post-tax inequality takes into account the (from the perspective of everyone except the median voter) exogenous tax-rate and its effect on disposable income.

How does inequality explain political outcomes in this framework? First off, as individual incomes rise in this model, the preferred tax rate is lower since taxation is proportional to income but spending is a lump-sum payment. Second, in a democracy, Meltzer and Richard assume that the median voter's preferred tax rate becomes the equilibrium policy. As inequality rises, they expect this preferred tax rate to rise because, whereas total tax revenues are proportional to mean income, the median voter's income determines tax choices. As the gap between the two widens (presuming mean incomes are always higher than median incomes), the median voter's preferred tax rate increases. Third, the model implies that political regimes should affect redistribution, for any given level of inequality. This occurs because who the median voter is – and whether their income is greater or less than mean income – depends on the political regime. If autocracies have median 'voters' whose income is above the mean, they will choose not to engage in *any* redistributive taxation.

These implications of the Meltzer-Richard model can also be used to think about choices over the political regime itself. In Acemoglu and Robinson (2005) and Boix (2003) the argument is that high levels of inequality retard democratization. The mechanism follows from the three key steps in the Meltzer-Richard model: first, that poorer people want higher redistribution; second, that democracies promote the preferences of the poor and not the rich; and third, that more inequality would mean higher redistribution *in democracies*. This being true, elites in unequal autocracies will seek to prevent democratization which will lead to them facing high levels of taxation. An analog to the story of democratization can also be made to political parties in democracies, if we presume that the median voter does not always win out. If right-wing parties represent richer citizens they will want lower taxation, with left-wing parties representing poorer citizens wanting higher taxation. The difference

between parties' preferred tax rates should be rising in inequality.

Thus the Meltzer-Richard model-inspired literature provides us with three clear macro-expectations about income inequality. First, higher income inequality in democracies should produce higher redistribution. Second, fear of that redistribution should mean unequal autocracies are less likely to democratize (and will be less stable as democracies). And third, that right-wing parties will want low taxation and this will be more true when inequality is higher.

How might things differ if we move from these income inequality models to consider *wealth* inequality? In general, the covariation of the wealth vis-à-vis the income distribution is likely to be positive and to produce reinforced preferences about taxation but in individual cases – for example, where the retired have a great deal of property wealth but low or stagnant income and young high earners do not own property or financial assets – they might in fact push against one another. At the macro-level this might occur when wealth is held in an unequal but stagnating sector such as agriculture, whereas most income is (unequally) generated in growing commercial sectors (the assumption made in Ansell and Samuels (2014)).

Along with variations in the distribution of wealth versus income, it may also be differently taxable. In Boix (2003) this is referred to as asset specificity, though it really applies to incomes rather than assets since there is no actual wealth distribution separate from income in that model. In some sense asset specificity and hence taxability is like a probability distribution over the taxed part of people's economic resources. Some forms of wealth are more easily taxable than others - land and residential property are more location specific and use specific than cash held electronically. Arguably the variation in asset specificity is *more* pronounced in terms of wealth than with income, since land is extremely location specific and portfolio capital extremely mobile, with labor incomes in an intermediate position.

Finally, wealth is *much* more unequally distributed than is income. This is in part a technical outcome - if people save the same proportion of their income and those savings

accumulate capital returns at a uniform rate, those who saved absolutely most will also gain absolutely most in returns to capital. Over time, this can widen the inequality in wealth produced by an initial inequality in incomes, depending on exactly how one measures inequality. Moreover, wealth can also be inherited, which means that those whose wealth was more than they could spend down in their life time will give their progeny a bequest that advantages them over other less fortunate offspring. Finally, in certain cases, outlined by Piketty (2014), if the rate of return to capital is higher than the rate of economic growth, over time capital will take an ever larger share of income, which can then be reinvested in still more unequally distributed wealth. Ultimately, whereas the Gini coefficient for market income in most advanced industrial countries varies between 0.3 and 0.5, the Gini coefficient for wealth is usually north of 0.67 and oftentimes as high as 0.8.

Putting these differences together, what should we expect the political consequences of wealth inequality to be and how might they differ from those associated with income inequality? Existing work on wealth inequality provides some insights but stops short of fully fleshing out how different types of wealth might matter. The most important recent analysis of wealth comes from Piketty (2014). But we need to be clear about what Piketty does and does not talk about in this book. His main analysis is of the relative size of wealth to income at the national level and in the size of the returns to wealth (read capital) vis-à-vis the level of economic growth. So bluntly what Piketty is interested in is the size of aggregates  $W$  (wealth) and  $Y$  (economic output) and the relative change in those aggregates, the rate of return on capital  $r$  and economic growth  $g$ , which then demonstrate the relative growth of returns to capital versus in the productive economy and the likely long-run equilibrium importance of capital with respect to income.<sup>1</sup>

What is noteworthy about Piketty from our perspective is that there is minimal discussion

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<sup>1</sup>It is worth noting that much of Piketty's argument depends on the elasticity of substitution in production with respect to capital. As Rognlie (2016) has noted, if that elasticity is not very high then the return to capital will decrease as the capital stock increases, eventually stabilizing or decreasing the capital share of income.

of inequality *within* wealth as opposed to between wealth and income. While the latter is clearly important politically it does not allow us to distinguish among wealth owners. To do so at a minimum we would need some simple distribution corresponding to wealth which we could then apply to the aggregate amount of wealth and produce a wealth inequality distribution which we could compare directly with the income distribution. Thus to think about the political economy of wealth we will want to know both the aggregate amount of wealth and its average return (Piketty) as well as the distribution of that wealth (not in Piketty).

A further problem with the Piketty approach is that it is a standard neoclassical model that presumes that wealth can be viewed as the capital stock and its returns as the market-defined return to capital in production. But this makes rather less sense when we look at wealth embodied in residential investment – i.e. housing – as Rognlie has noted around eighty percent of the increase in the capital / income ratio since 1970 has been due to rising housing prices (see also Kuhn, Schularick and Steins, 2018).

The implication of this is that it will be important not only to look at variation *within* wealth-holdings but also to differentiate among different types of wealth - in particular between non-residential and residential investment. Other works that emphasize the importance of residential wealth and land prices as separate from capital and as fundamentally driven by Ricardian rent-style unearned increases have become more prevalent in recent years Ryan-Collins, Lloyd and Macfarlane (2017).

What then are our expectations about the relationship between varying types of wealth inequality and political outcomes? The first is that those forms of wealth that are more widely held ought to be associated with the economic wellbeing of the broader population. Housing, in particular, is the most widely held form of substantial wealth. A growth in house prices increases the wealth not only of elites but of the mass of homeowners, who by the late twentieth century were a large majority of citizens in most industrialized countries. A growth in housing credit similarly ought to reflect a booming housing market with a similar benefit

for a large group of middle class homeowners. In general this should be associated with *less* elitist political outcomes, be they authoritarian rule or elite-favored political parties.

Inequality in land holdings by contrast should be negatively associated with mass political outcomes, whether they be democratic rule or center and left-wing parties. Ansell and Samuels (2014) show that high land inequality is negatively associated with transitions to democracy. We might also presume it is negatively associated with the success of left-leaning governments for similar reasons. In this case land inequality tends to favor a small group of elite landowners, from Prussian Junckers to the Latin American hacienda owners, who fear the redistribution of a highly taxable and specific form of highly unequally distributed wealth.

By contrast, the implications for wealth that come not from land or residential capital are somewhat less clear. Ansell and Samuels (2014) argue that income inequality produced from industrial production is likely to be associated with a *higher* probability of democratic transition since it is produced by rising economic elites unrepresented by existing autocracies. They also argue that it is unlikely to undermine existing democracies since financial capital requires the secure property rights that are threatened by a return to arbitrary constraint-free autocracy. In the analysis below we examine the connection between the share of income pertaining to capital (that is the flow of income that is a return to existing wealth, where higher capital shares imply a higher level of or return to wealth vis-à-vis labor income). Our expectations are that capital income should not harm, and may help, democratic consolidation given the importance of secure property rights for capital.

Finally, since aggregate wealth shares will pick up a broad mix of forms of wealth with cross-cutting effects on politics, as discussed above, they may not have a clear direct connection to political outcomes, with the elite-biased effects of land countered by the mass-biased effects of residential housing, and possibly also the interests of finance capital.

### 3 Wealth Inequality in Historical Perspective

In this section, we descriptively analyze various measures on wealth inequality and asset holdings using data from mainly advanced industrial countries spanning over up to 150 years. Ideally, we would use a standardized measure of overall wealth inequality along with more nuanced measures of wealth inequality across and within different groups that allows us to explore heterogeneity in terms of the type of wealth hold by different societal groups and covering a large number of countries from the beginning of the nineteenth century to the present. In practice, however, such data are not available. Fortunately, there are several available sources that, when combined, help us evaluate whether wealth inequality matters for shaping the political trajectories of countries.

First, we take the historical wealth share held by different percentiles of the population from Roine and Waldenström (2015). This data set covers 9 countries between 1740 and 2011. We use the wealth share of the top 10, top 5, and top 1 percent of the population as a proxy of overall wealth inequality in a country that is especially useful to capture the wealth at the very top of the distribution; unfortunately, these data are available in only a very few countries which severely constrains any claim about external validity of our analysis.

We begin by examining the top wealth share across time and space. Figure 1 shows the top 10 percent wealth holdings in 10 countries, for the period 1810-2017. Several facts stand out clearly. Perhaps, the most critical finding is that the wealth share of the most affluent has experienced a sharp decline in the first half of the 20th century. Note, first of all, that the wealthiest 10 percent held 80 percent of the total national wealth on average until the 1940s. During the next 40 years, the top wealth share fell almost by 30 percentage points. After this period of declining inequality, the last 20 years of the 20th century witnessed an increase: although in most countries, the top wealth holdings did not recover from the sharp fall of the previous period, there is substantial evidence that 1980-2017 witnessed a substantial increase in the wealth holdings of the very rich. The United States currently has the highest top 10 percent wealth share: almost 70 percent.

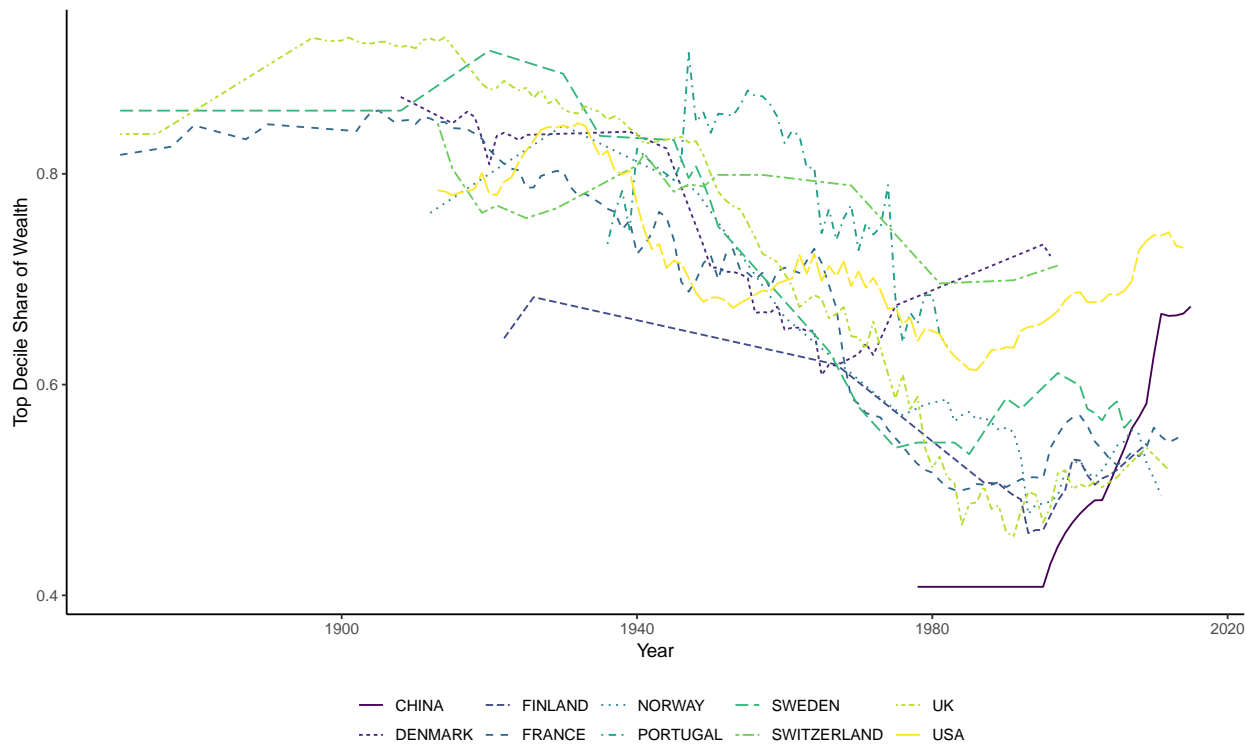


Figure 1: Top 10 Percent Wealth Holdings

Second, we take gross capital shares and net capital shares from Bengtsson and Waldenström (2018). Figures 2 and 3 show yearly changes in gross capital share and net capital share. Observe that gross capital share was around 40 percent in the first quarter of the 20th century and then experienced a slight decline. Currently, the gross capital share is around 35 percent on average. On the other hand, the net capital share currently lies mostly between 20 and 30 percent. Observe that there is a large variation both in gross capital share and net capital share: countries differ in what share of the national income is distributed as capital income.

Third, we use land inequality measure from Ansell and Samuels (2014), which is an adjusted version of Vanhanen (2003)'s family farms measure by the relative size of the rural population. It provides us with a good measure about the structural inequality in agrarian societies (and therefore perhaps helps us proxying wealth inequality in early development stages). Figure 4 shows the historical trend of rural inequality during the period 1858-2000

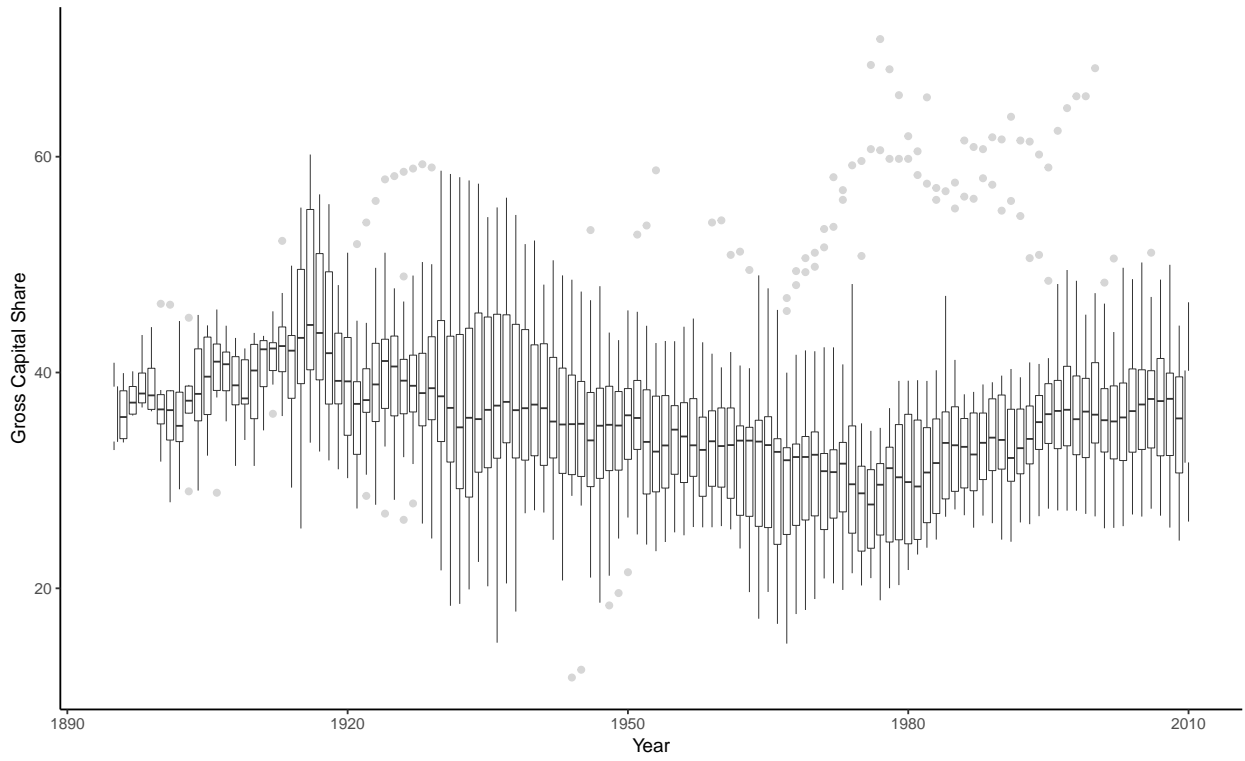


Figure 2: Gross Capital Share

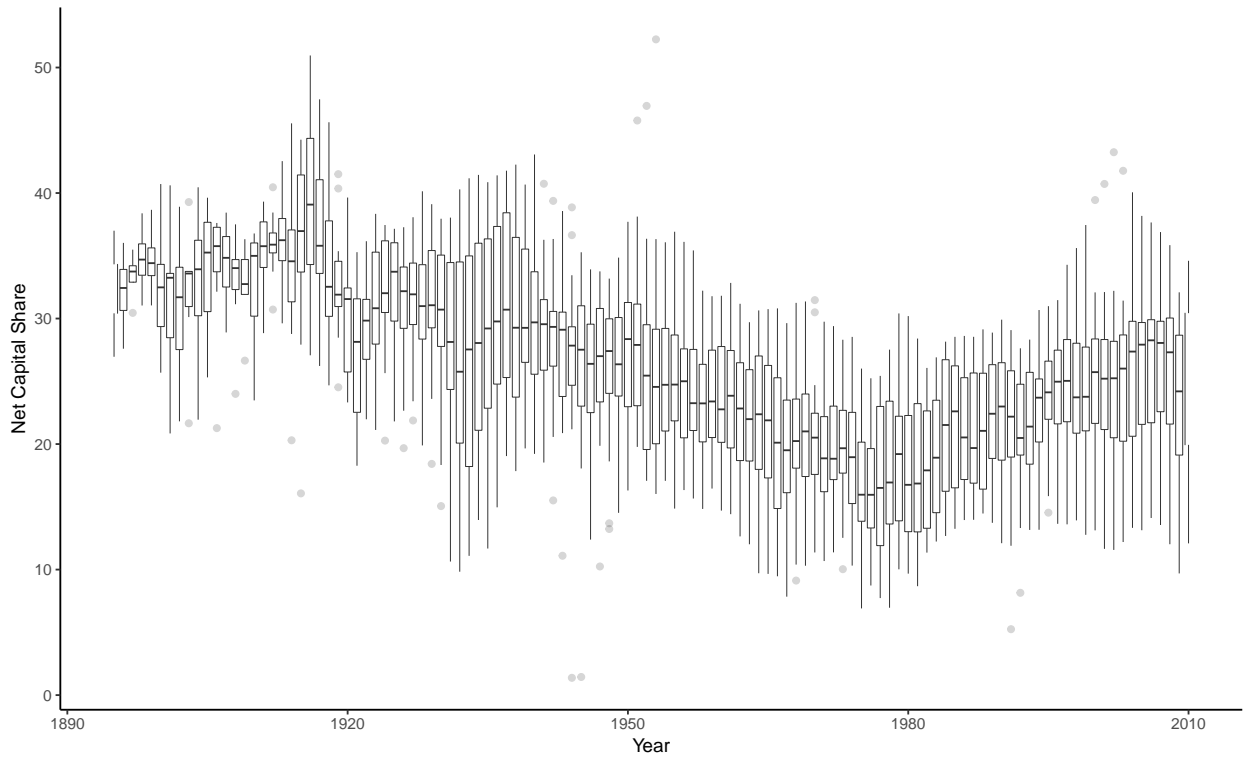


Figure 3: Net Capital Share

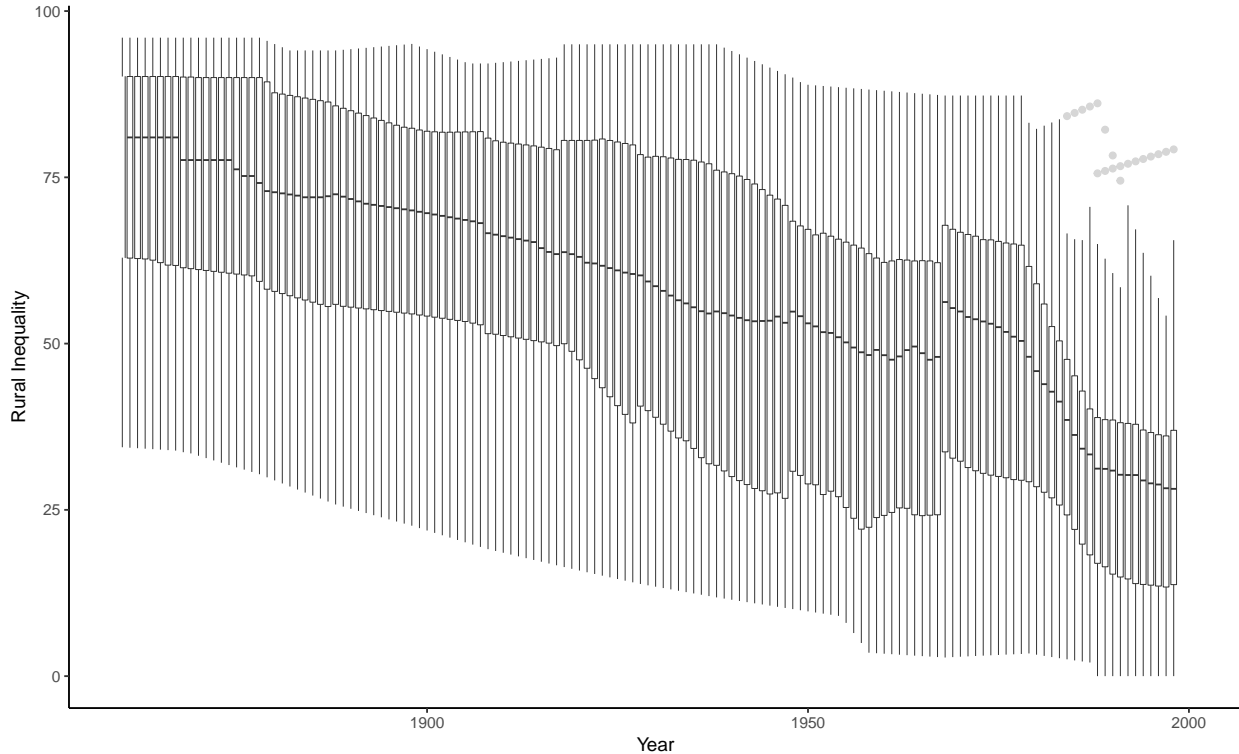


Figure 4: Rural Inequality

for 186 countries. The data suggest that rural inequality has declined substantially in the last hundred years. Given the decreasing importance of agriculture and mass immigration to urban centers in the much of the 20th century, along with significant land reforms, this decline is very much expected. Rural inequality is now around 30 percent, almost only half of its level in the early 1900s.

Finally, we use prices of stocks and house prices from Jordà, Schularick and Taylor (2017) and Knoll, Schularick and Steger (2017). While stocks are hold mainly by individuals at the top of the wealth distribution, housing is the most common form of wealth for middle class individuals in contemporary societies (Kuhn, Schularick and Steins, 2018). The measures therefore help us capturing how changes in the *prices of assets* held by the wealthiest (financial wealth) and more widely held residential wealth affect political outcomes. The rationale for each of the above variables is that it helps us to capture the inequalities between the poor and the rich, defined in various ways, as well as the inequalities across the financial and

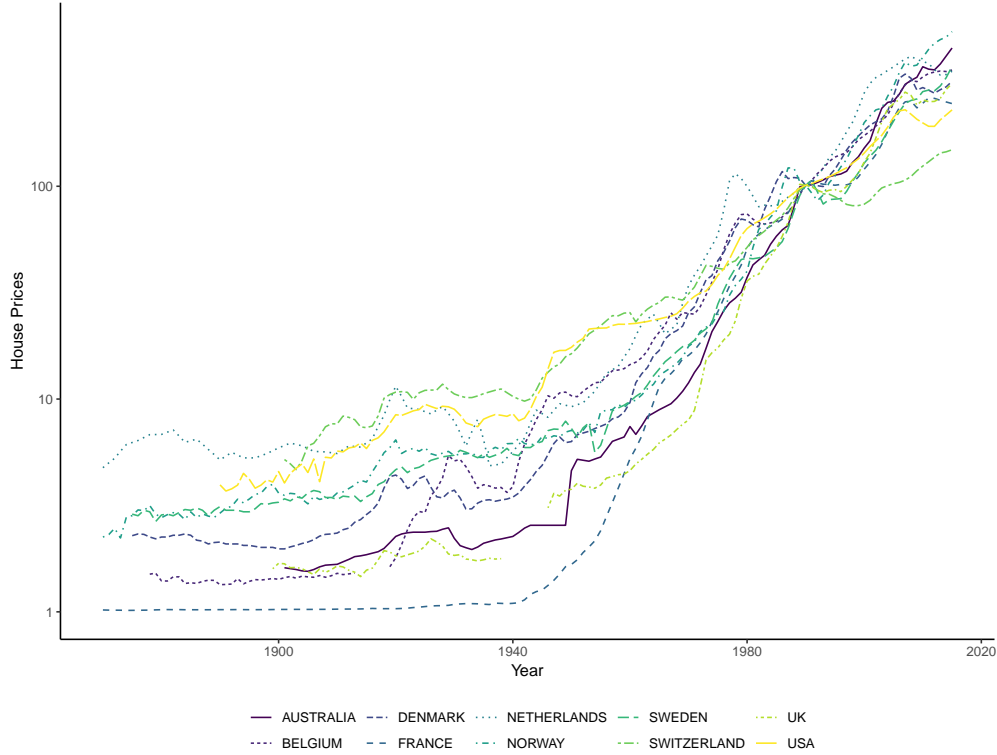


Figure 5: House Prices Indexed 1990=100

the agricultural sectors in the economy.

Figure 5 shows the historical trend of housing prices during the period 1870-2016. It is very clear that between 1870 and 1940, housing prices did not increase significantly. During this period, however, there was a significant cross-national variation: house prices in Belgium and France were very low compared to Norway, Sweden, and Switzerland. However, the prices experienced a golden age of growth after 1940. This period also witnessed an international convergence in prices: for example, Belgium and France where the house prices were almost one-tenth of those in the Netherlands and the USA during the late 1800s now has the same price levels.

The rise in house prices has a couple of important implications for studying wealth inequality. One such implication rests on the assumption that house prices can be thought of as a proxy for mass-owned capital. Thus, an increase in housing prices positively affects the value of the assets that most people own, especially in countries where the rate of house

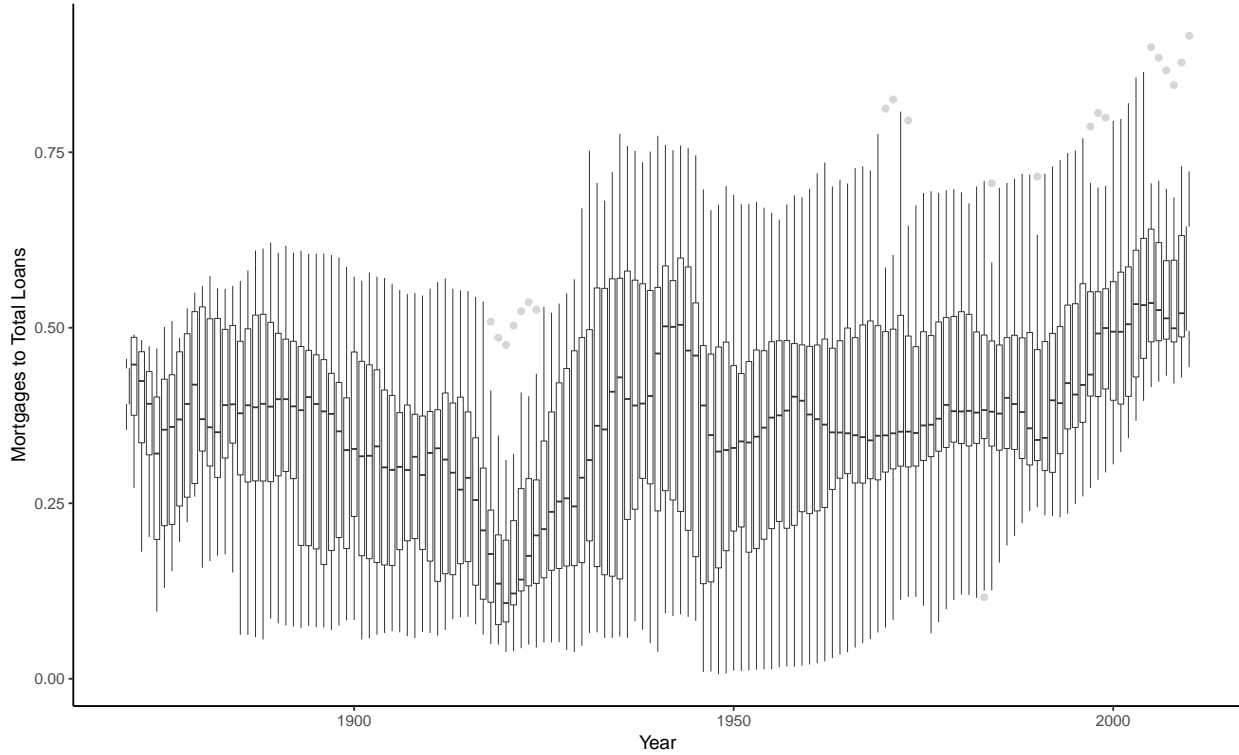


Figure 6: Ratio of Mortgages to Total Loans

ownership is high. Moreover, the available historical data suggest that house prices increased substantially in all countries covered by our data set, which implies that the magnitude of the residential capital owned by the masses have gone through a substantial transformation in the last 100 years.

Figure 6 visualizes the ratio of mortgages to total loans. The evidence strongly suggests that the ratio of mortgages to total loans has been steadily increasing since the 1920s. Taken together with the data on house prices, this figure is not surprising: most people borrow to become homeowners, and as house prices increase, mortgages become a significant portion of the total household debt. Mortgage lending, on average, currently constitutes about 50 percent of total consumer lending, whereas it was only 25 percent around the 1920s. It is worth to mention that the figure shows that there is substantial variation in mortgage to total debt ratio across countries.

Finally Figure 7 shows the changes in annual stock prices and Figure 8 displays changes

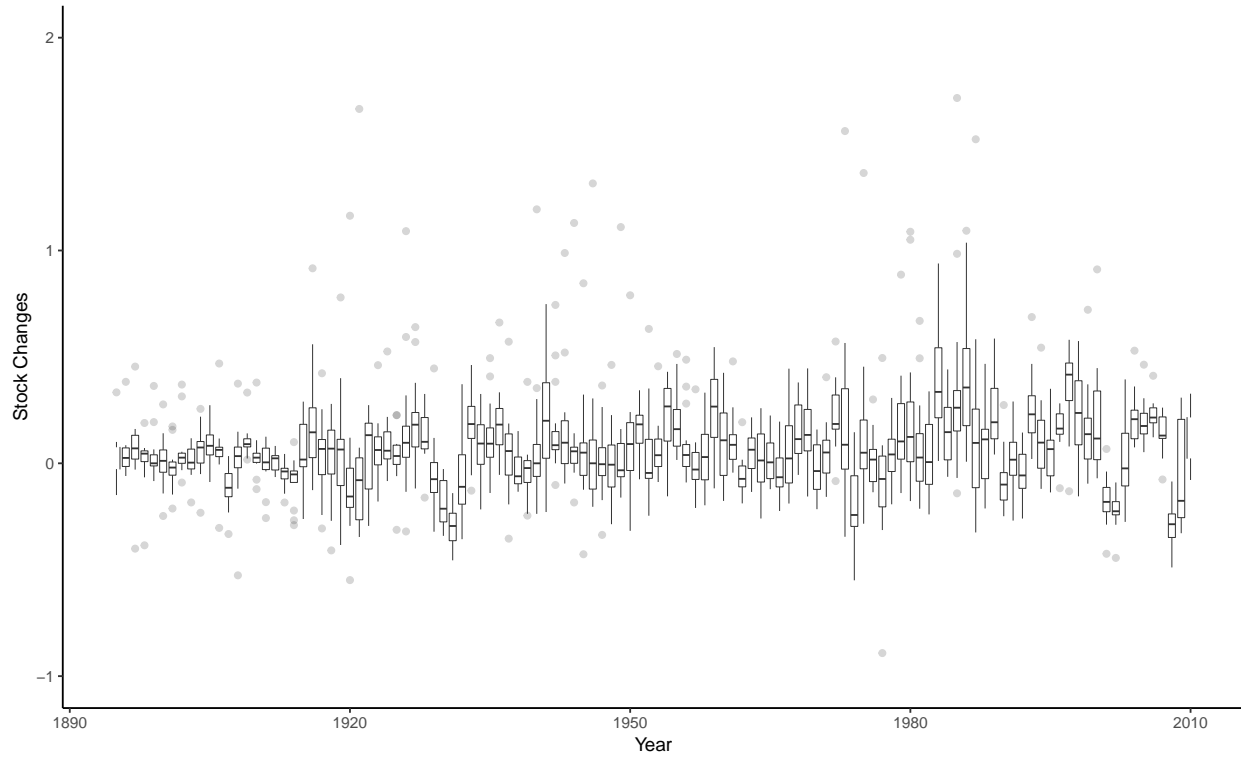


Figure 7: Annual Stock Price Changes

in nominal house prices. Both the yearly stock price and nominal house price changes do not have a particular upward or a downward trend, although the extent to which these changes varies between countries within a year is striking.

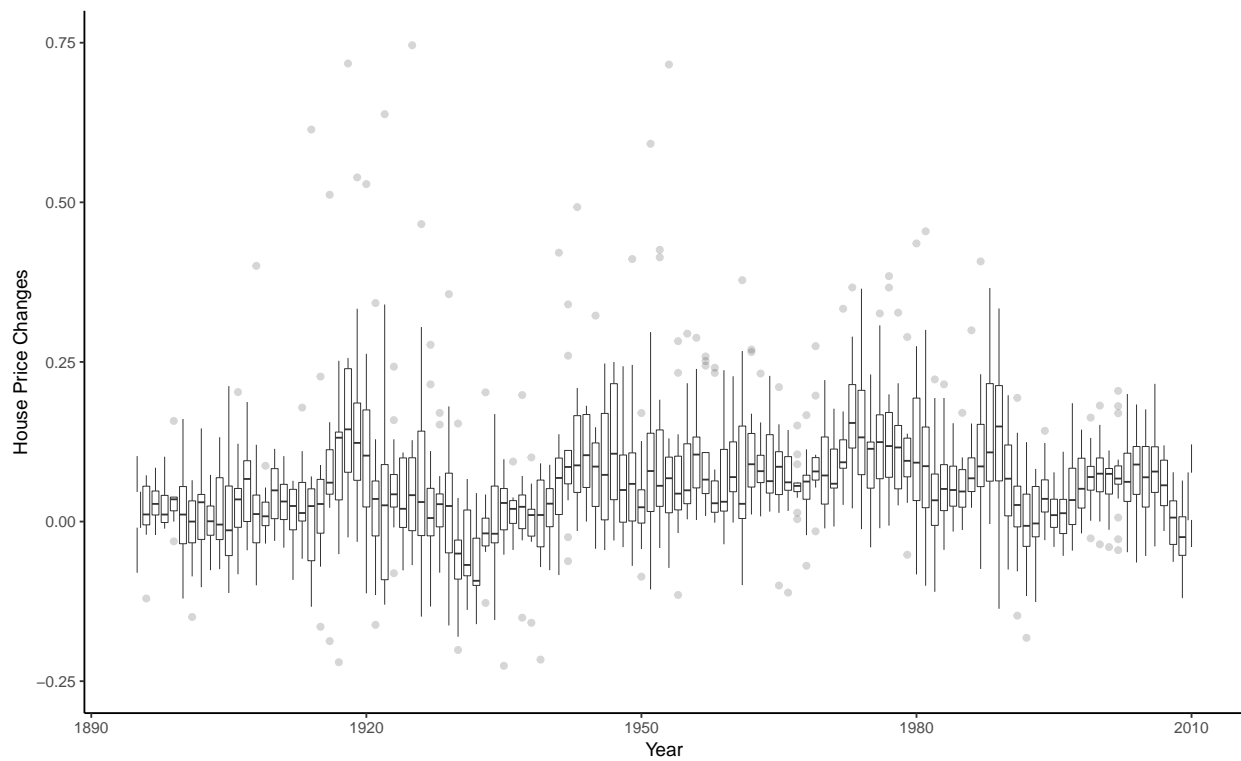


Figure 8: Nominal House Price Changes

## 4 Empirical Analysis: Does Wealth Inequality Predict Political Outcomes?

Other than a recent paper by Scheve and Stasavage (2017), which uses wealth shares, very few political economists have examined the long-run connection between wealth inequality and political outcomes. In this section, we provide important new evidence by looking at the association between the different wealth measures laid out in the previous section, on the one hand, and political outcome variables – democratic transitions and consolidation as well as partisanship of governments – using data from mainly advanced industrial countries spanning over up to 150 years.

### 4.1 Dependent Variables

Our statistical models deploy two different dependent variables: democracy and ideology of the head of government. For democracy, we employ the Boix, Miller and Rosato (2013) data set that classifies countries yearly as democratic or not. The data set covers 222 countries from 1800 to 2015, based on if a country has competitive elections and has enfranchised at least 50 percent of the male population. Democratization occurs when a country meets all of the following conditions: it expands the male franchise beyond the 50 percent threshold, the executive becomes directly or indirectly responsible to the electorate, and the legislature/executive is elected through free and fair elections.

For ideology of the head of government, we use Brambor and Lindvall (2018) data set that covers 33 countries from 1870 to 2012. The data set provides information about the ideological orientation of heads of the government by separating them into four ideological categories: Left, Center, Other, and Right.

As an additional control variable, we employ Maddison (2007)'s per capita income in 1990 U.S. dollars (i.e. in real terms). We are able to use estimates of GDP per capita between 1820 and 2015 by merging Maddison's historical GDP per capita data, which ends in the

early 2000s, with GDP per capita from the Penn World Tables, using the year 2000, around which time the trends in both estimates are linearly dependent. Translating across produces a measure of GDP per capita up to 2015 (results are very similar without the final dozen or so years added in this fashion).

## 4.2 Results

In this section we examine two key questions in the literature connecting inequality to political institutions: does inequality affect regime transition (to and from democracy) and does it impact the types of governments that are elected or in power? Our discussion earlier suggested that different types of inequality might advantage different groups in society whose preferences over regime types are distinct. Recalling the argument made in Ansell and Samuels (2014), land-owning elites – the beneficiaries of inequality in landholdings – may be much more antidemocratic than industrial elites – the beneficiaries of inequality in the capital stock. The same differences across types of wealth may also apply to changes in the value of that wealth. For example, residential wealth tends to be more widely held than financial wealth, hence positive shocks to the value of the former are likely to benefit a broader group in society than increases in the latter. We now examine the connections between levels of and changes in the various forms of wealth laid out in the previous section on (a) the prevailing political regime, and (b) the ideology of government in power.

To examine whether wealth inequality is connected to regime type we replicate the statistical model employed in many of the best known analyses of the determinants of democratization: the dynamic logit model. This specification uses the binary measure of democracy as the dependent variable, drawn from Boix, Miller and Rosato (2013) and interacts the lagged dependent variable (i.e. whether the country was a democracy in the previous period) with each of the independent variables (also all entered on their own). Accordingly, this setup produces estimates of the relationship between each independent variable and democracy in *both* autocracies (the independent variables entered on their own) and democracies (the

sum of the direct effect of each interaction variable with the lagged democracy variable). Or to put it more simply, the coefficients on each independent variable reflect their association with *transition* to democracy, whereas the sum of these and the interaction variables reflects their association with democratic *consolidation*.

In the analyses below we limit our sample to those countries with historical data on capital and wealth inequality, which means largely but not solely contemporary advanced industrial countries. The number of countries in each analysis varies, with a maximum of nineteen in any particular analysis due to differing dependent variables with varied country inclusion, but across all the analyses of democratization we draw from 24 countries: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Russia, Spain, Sweden, Switzerland, United Kingdom, and the USA. The time period under analysis ranges between 1821 and 2015 (for wealth shares), with later starting dates for some of the analyses (1876 for capital share, 1872 for stocks and house prices).

We begin in Table 1 with an analysis of the relationship between gross and net capital share and democracy between 1876 and 2015. The specification is a dynamic logit model with democracy as the dependent variable. In each regression we interact the independent variables with the lagged dependent variable and we further include a (non-interacted) time trend. Models 1 and 3 use gross capital share and Models 2 and 4 use net capital share. It is important to note that the latter analyses drop Argentina and Brazil.

Two key findings jump out. First, capital shares are unrelated to democratic transition but there is evidence that higher net (but not gross) capital shares are associated with a greater chance of democratic consolidation. Further analysis shows that the difference between net and gross capital shares is entirely based on the inclusion or exclusion of Argentina and Brazil (which lack net capital share information), since gross capital share is also correlated with democratic consolidation if those countries are excluded, with a coefficient of similar magnitude to that found for net capital share. Second, across both Models 3 and

4 rural inequality is clearly negatively related to democratic transitions (regardless of the inclusion of Argentina and Brazil) – this finding is consistent with the claims about land inequality made in Ansell and Samuels (2014). There is no evidence in this analysis that land/rural inequality harms democratic consolidation. While these results are hardly conclusive they provide some support to the claim that wealth inequality related to land and fixed assets retards democratic transitions whereas wealth inequality from capital has little impact in that area and may indeed be associated with democratic consolidation.

Table 1: Capital Share and Democracy (Dummy) 1876-2015

	(1)	(2)	(3)	(4)
Lag Democracy	6.992*** (2.093)	-1.288 (2.798)	6.297** (2.660)	-5.455 (4.636)
Lag Gross Capital Share	-0.008 (0.021)		0.006 (0.024)	
Lag Net Capital Share		-0.037 (0.040)		-0.030 (0.037)
Lag GDP per capita	0.258 (0.165)	-0.053 (0.254)	-0.011 (0.206)	-0.218 (0.276)
Lag Rural Inequality			-0.064** (0.025)	-0.063** (0.032)
Lag Dem X Gross Capital	-0.002 (0.047)		-0.005 (0.050)	
Lag Dem X Net Capital		0.233*** (0.085)		0.225*** (0.084)
Lag Dem X GDP pc	0.044 (0.203)	0.924* (0.552)	0.080 (0.247)	1.250* (0.716)
Lag Dem X Rural Inequality			0.011 (0.037)	0.078 (0.059)
Constant	-15.595 (20.635)	-40.051 (32.039)	-10.342 (20.325)	-26.771 (33.644)
Countries	19	17	19	17
N	1,860	1,691	1,638	1,473

\*p < .1; \*\*p < .05; \*\*\*p < .01

Linear time trend included but not reported

Table 2 uses the estimates of the share of wealth pertaining to the top 10th, 5th, and 1st percentile of the wealth distribution. The number of countries is now lower – between 11 and 13 –, though the data goes back to 1821. We see very little evidence that the level of wealth inequality so defined has any impact on either transitions to democracy or the consolidation of democracy in this table, although we do continue to see an important negative relationship

between rural inequality and democratic transitions even on this truncated sample.

Table 2: Top Wealth Shares and Democracy 1821-2015

	(1)	(2)	(3)	(4)	(5)	(6)
Lag Democracy	4.729 (8.711)	-6.831 (8.871)	11.914 (7.808)	-0.158 (8.170)	8.066** (3.973)	1.412 (4.967)
Lag Top 10 Wealth	7.055 (8.250)	-6.603 (10.573)				
Lag Top 5 Wealth			12.538 (8.821)	0.595 (12.029)		
Lag Top 1 Wealth					2.874 (5.422)	-11.011 (7.628)
Lag GDP per capita	0.308 (0.345)	0.982* (0.505)	0.398 (0.356)	1.023* (0.532)	0.335 (0.312)	1.400*** (0.508)
Lag Rural Inequality		-0.114** (0.050)		-0.127** (0.058)		-0.121** (0.051)
Lag Dem X Top 10	3.095 (10.037)	12.712 (10.631)				
Lag Dem X Top 5			-6.361 (9.938)	4.521 (12.179)		
Lag Dem X Top 1					-1.610 (7.120)	6.179 (9.007)
Lag Dem X GDP pc	0.398 (0.506)	-0.298 (0.680)	0.290 (0.517)	-0.362 (0.691)	0.365 (0.493)	-0.695 (0.702)
Lag Dem X Rural Ineq		0.130 (0.080)		0.138 (0.085)		0.133 (0.087)
Constant	-14.871 (24.804)	70.169 (51.383)	-22.946 (25.155)	55.540 (50.384)	0.741 (25.842)	125.238** (49.837)
Countries	11	11	12	12	13	13
N	1,144	919	1,228	990	1,368	1,118

\*p < .1; \*\*p < .05; \*\*\*p < .01

Linear time trend included but not reported

Table 3 provides a striking difference by examining year on year changes in the wealth share and their relationship to democracy (note that we have a time trend in the analysis so this is not simply overall growth in both variables). Here we see consistent negative coefficient estimates for the on-interacted wealth share variables, implying that growth in the share of wealth pertaining to the wealthiest groups in society is negatively associated with the chance of a transition to democracy. There is no clear relationship between changes in wealth and democratic consolidation however. Rural inequality remains negatively associated with transitions to democracy (though there is no significant correlation between rural inequality on consolidation - the sum of the direct and interacted terms for rural inequality roughly

Table 3: Top Wealth Shares Changes and Democracy 1821:2015

	(1)	(2)	(3)	(4)	(5)	(6)
Lag Democracy	7.243*** (1.982)	0.128 (4.895)	7.301*** (1.987)	0.360 (4.835)	7.467*** (1.905)	0.655 (4.607)
Change Top 10 Wealth	-43.581** (18.905)	-74.429** (36.894)				
Change Top 5 Wealth			-36.746** (15.143)	-66.746** (29.681)		
Change Top 1 Wealth					-18.031** (7.314)	-32.525** (13.145)
Lag GDP per capita	0.289 (0.358)	0.514 (0.702)	0.359 (0.349)	0.571 (0.655)	0.394 (0.317)	0.820 (0.524)
Lag Rural Inequality		-0.174*** (0.064)		-0.181*** (0.064)		-0.184*** (0.065)
Lag Dem X Top 10	1.651 (58.407)	74.461 (71.325)				
Lag Dem X Top 5			18.190 (57.600)	76.449 (59.116)		
Lag Dem X Top 1					-1.108 (42.216)	40.476 (42.065)
Lag Dem X GDP pc	0.447 (0.543)	0.202 (0.875)	0.441 (0.536)	0.177 (0.838)	0.371 (0.506)	-0.092 (0.712)
Lag Dem X Rural Ineq		0.177** (0.084)		0.178** (0.085)		0.180** (0.085)
Constant	13.465 (20.881)	112.454** (49.761)	17.596 (21.488)	122.549** (50.606)	17.014 (20.288)	117.046** (47.805)
Countries	11	11	12	12	13	13
N	1,136	911	1,219	981	1,359	1,109

\*p < .1; \*\*p < .05; \*\*\*p < .01

Linear time trend included but not reported

equals zero). Hence here we see again strong evidence that wealth inequality related to land retards democratic transitions but now also some evidence that growth in the share of wealth going to the wealthiest may also have a similar effect.

Table 4 concludes our analysis of democratic transitions by examining data on year-on-year changes in the price of assets, using stocks as a proxy for those capital assets owned by the wealthiest individuals and house prices as a proxy for mass-owned residential capital. Again we interact stock market and house price index changes with the lagged democracy variable. Models 1 and 2 include stocks alone, Models 3 and 4 include house prices alone, and Models 5 and 6 include both. We see some results that are fairly consistent with those in the earlier tables. In Models 1 and 2 rising stock prices are associated with less likelihood of democratic transition and more likelihood of democratic consolidation. Assuming some similarity between stock changes and (a) the capital share and (b) wealth shares, the negative impact on transition and positive on consolidation mirror earlier results. However, once we control for house price changes, the stock price effects lose significance. Instead, what remains is a significant and positive relationship between house price increases and democratic consolidation. If we believe that higher house prices benefit the mass of people (as well as, potentially, the elite) then this suggests some support for a ‘mass property-owning democracy’ line of reasoning. Unfortunately we lack data for home ownership rates dating back to 1872, so we cannot confirm the degree to which ‘mass’ ownership benefited from rising house prices.

We now turn to examining political life within democracies, which shows substantially more within-country variation than does regime type, particularly with our sample of countries with available wealth data. We use as dependent variable the ideology of the head of government as determined by Brambor and Lindvall (2018). We order ideologies as follows: left, center, other, right and begin with a four point scale of ideology, which we examine using a linear model (ordered logit analyses produce convergence issues though result in similar coefficient estimates), before turning to a binary logistic analysis of having a left-wing or

Table 4: Asset Prices and Democracy (Dummy)

	(1)	(2)	(3)	(4)	(5)	(6)
Lag Democracy	7.107*** (1.656)	5.517 (3.454)	8.699*** (2.106)	5.427 (3.869)	8.099*** (2.317)	4.008 (4.428)
Lag Stock Change	-3.776** (1.829)	-4.043** (1.876)			-1.455 (2.152)	-1.831 (2.263)
Lag House Price Change			-0.121 (1.687)	-0.114 (1.701)	0.176 (1.620)	0.187 (1.611)
Lag GDP per capita	0.557*** (0.200)	0.396* (0.222)	0.220 (0.270)	0.219 (0.287)	0.273 (0.273)	0.254 (0.286)
Lag Rural Inequality		-0.047** (0.024)		-0.038 (0.041)		-0.034 (0.040)
Lag Dem X Stocks	6.181* (3.577)	6.409* (3.643)			-0.850 (3.528)	-0.356 (3.435)
Lag Dem X House Prices			14.211** (6.759)	13.661** (6.668)	14.858** (6.976)	14.416** (6.952)
Lag Dem X GDP pc	0.288 (0.479)	0.346 (0.554)	0.049 (0.484)	0.209 (0.555)	0.162 (0.564)	0.454 (0.702)
Lag Dem X Rural Ineq		0.023 (0.049)		0.064 (0.069)		0.074 (0.072)
Constant	2.188 (19.733)	12.066 (21.180)	-35.313 (32.064)	-18.635 (39.675)	-21.532 (33.610)	-8.791 (39.845)
Countries	17	17	17	17	17	17
N	2,098	1,812	1,749	1,463	1,692	1,406

\*p < .1; \*\*p < .05; \*\*\*p < .01

Linear time trend included but not reported

right-wing head of government. Tables 5 and 6 examine models of each dependent variable in turn, beginning with analyses of the relationship between capital share and ideology before moving on to stocks and houses.

Table 5 shows a strong connection between the capital share and government ideology. Specifically, a higher capital share – either gross or net – is associated with more right-wing ideology overall, less likelihood of having a left-wing government and more likelihood of having a right-wing government. Rural inequality is in turn associated, where statistically significant with a similar pattern, and unsurprisingly, being a democracy is associated with less right-wing ideology (i.e. the possibility of having an elected left-wing government).

Table 6 by contrast does not show the impact of stock price or house price changes we saw for democracy – these appear entirely unrelated to government ideology. What does, however, seem to matter is the ratio of mortgage loans to total loans – that is the composition of aggregating credit. Here we see that a credit market with relatively higher mortgage lending is associated with more left-leaning government. While clearly the variables that are statistically significant differ from our analysis of democracy, this provides some more support to the conjecture that wealth that is more widely distributed – residential wealth – is more associated with mass politics and mass political parties - on average more likely to be of the left (at least in this time period).

Table 5: Capital Shares and Ideology: 1876 to 1999

	Ideology		Left		Right	
	(1)	(2)	(3)	(4)	(5)	(6)
Gross Capital Share	0.008** (0.004)		-0.019** (0.008)		0.009 (0.007)	
Net Capital Share		0.018*** (0.005)		-0.032*** (0.010)		0.022** (0.009)
GDP per capita	0.003 (0.011)	0.016 (0.011)	-0.005 (0.020)	-0.021 (0.024)	0.017 (0.018)	0.049** (0.021)
Democracy	-0.953*** (0.100)	-1.002*** (0.114)	0.971*** (0.239)	2.043*** (0.447)	-1.758*** (0.186)	-1.966*** (0.230)
Lag Rural Inequality	-0.0005 (0.003)	0.008** (0.004)	-0.003 (0.006)	-0.027*** (0.008)	-0.002 (0.005)	0.005 (0.007)
Year	-0.004** (0.002)	-0.001 (0.003)	0.011*** (0.004)	0.002 (0.007)	-0.006* (0.003)	-0.008 (0.005)
Constant	3.731*** (0.329)	2.891*** (0.507)	-2.824*** (0.742)	-1.607 (1.274)	1.805*** (0.610)	1.565 (0.993)
Countries	19	17	19	17	19	17
N	1,630	1,465	1,630	1,465	1,630	1,465

\*p < .1; \*\*p < .05; \*\*\*p < .01

Table 6: Stocks, Housing, and Ideology: 1871-1999

	Ideology			Left			Right		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Stock Changes	0.099 (0.095)			-0.085 (0.216)			0.202 (0.182)		
House Price Change		0.062 (0.223)			-0.209 (0.549)			0.006 (0.438)	
Mortgages/Loans			-1.224*** (0.171)			3.084*** (0.445)			-1.827*** (0.346)
GDP per capita	0.033*** (0.009)	0.054*** (0.011)	0.072*** (0.010)	-0.215*** (0.026)	-0.214*** (0.028)	-0.280*** (0.029)	0.051*** (0.019)	0.094*** (0.022)	0.116*** (0.021)
Democracy	-0.737*** (0.087)	-0.789*** (0.107)	-0.514*** (0.091)	2.004*** (0.410)	2.294*** (0.740)	1.560*** (0.440)	-1.559*** (0.181)	-1.924*** (0.258)	-1.137*** (0.189)
Lag Rural Inequality	0.010*** (0.003)	0.014*** (0.003)	0.012*** (0.003)	-0.037*** (0.007)	-0.038*** (0.008)	-0.033*** (0.007)	0.009* (0.005)	0.016** (0.006)	0.016*** (0.005)
Year	-0.009*** (0.001)	-0.010*** (0.002)	-0.014*** (0.002)	0.044*** (0.005)	0.043*** (0.006)	0.057*** (0.006)	-0.015*** (0.003)	-0.020*** (0.005)	-0.022*** (0.003)
Constant	4.044*** (0.259)	4.049*** (0.361)	4.666*** (0.286)	-7.288*** (0.906)	-7.320*** (1.194)	-9.554*** (1.038)	2.662*** (0.534)	3.160*** (0.754)	3.316*** (0.579)
Countries	17	17	17	17	17	17	17	17	17
N	1,809	1,460	1,741	1,809	1,460	1,741	1,809	1,460	1,741

\*p < .1; \*\*p < .05; \*\*\*p < .01

## 5 Conclusion & Next Steps

The relationship between economic inequality, public opinion, and political outcomes is at the center of a broad literature in political science that has been strongly influenced by the omnipresent Meltzer-Richard model that focuses on the redistributive consequences of *income* inequality. Hence research as, for the most part, looked at income, i.e. the flow of money, and largely ignored the potential consequences of unequally distributed wealth, i.e. the stock of money. To complement scholarship on the political implications of economic inequality, we therefore shift the focus to the distribution of economic wealth.

We started by acknowledging that wealth and income are conceptually different. Wealth inequality is partly the consequence of income inequality, but other factors, such as the unequal distribution of bequests or asset price shocks (e.g. booming stock markets or rising house prices), also contribute to an unequal distribution of wealth. Hence while income and wealth are obviously positively correlated, they do not are perfectly co-linear. We further discussed that analyzing wealth inequality requires us to conceptually distinguish between different forms of wealth as previous research has shown that different sources of wealth (e.g. agricultural production vs. industrial production (Ansell and Samuels, 2014)) come with distinctively different political consequences. Our empirical analyses therefore look at different measures of wealth inequality that allow us to, for instance, study the political implications of forms of wealth that are held by a small, wealthy elite compared to more widely held assets. More precisely, we look at the wealth share held by top percentiles in the wealth distribution, the gross and net share that accrues to capital (compared to labor), agricultural land inequality and at the consequences of asset price movements for stock markets – relevant mainly for most affluent individuals who hold financial wealth – and for real estate markets – an asset more widely held by middle-class households.

Using dynamic logit models and data from 10–20 advanced market economies (depending on the respective model) for a period of up to 200 years, we analyze the relationship between the different measures of wealth and two political variables, namely democratization

(democratic transition and consolidation) and partisanship of the governing party.

Our preliminary findings exhibit considerable heterogeneity in the political effects across the different wealth measures. Consistently with previous studies, we find a negative association between agricultural inequality and democratic transitions and increases in top percentile wealth shares as well as abnormal stock value increases and democratization. In contrast, increases in asset prices of more widely held residential wealth and capital shares in production are not associated with a lower probability of democratic transitions, but instead make democratic consolidation more likely. Hence, while wealth concentrated at the top of the distribution and wealth of landed elites make democratic transitions less likely, increases in wealth that benefits larger fractions of the population make backsliding from democracy to dictatorship *less* likely.

We moreover find preliminary evidence that higher capital shares are associated with a higher probability of right-of-center governments in power while neither stock market booms nor changes in house prices are associated with the partisanship of the governing party. Instead, higher levels of mortgage credit – potentially a proxy for the accessibility of bank credit to obtain residential wealth for the wider population – are positively correlated with left-wing governments. This, again, indicates forms of wealth that more inclusive to broader parts of the society are associated with left-of-center parties in government.

Our empirical analyses rely on observational data for a handful of industrial countries over a long time period. The conclusions that can be drawn from very small sample of countries and from observational data are subject to justified scepticism about unobserved variable bias and the direction of causality. We are therefore very careful in interpreting those patterns. For a more convincing identification of the political effects of different distributions of wealth, we are currently working on instrumental variable approaches that would allow us to more credibly claim that wealth inequality is indeed causally prior to the political outcome. Below we present a first stab at developing a more causally credible approach.

There is a considerable consensus among social scientists that, high land inequality is

detrimental to democratization (Albertus, 2017). Scholars argue that large landowners who depend on labor-intensive cultivation block democratization movements in fear of expropriation, losing control over agricultural workers, and deterioration of their privileged social status. However, the unequal distribution of land holdings and the emergence of a labor-repressive strong landowner class are not exogenous to politics. In most cases, high land inequality is not an initiator or inhibitor of specific political processes, but it is rather a consequence of the existing political institutions that govern economic activity.

In order to overcome the potential threat of endogeneity, in this final section of the paper, we focus on geographic endowments that exogenously create inequality. The effect of factor endowments on inequality, such as the wheat-sugar cane ratio (Easterly, 2007; Sokoloff and Engerman, 2000) and suitability of land for plough cultivation (Alesina, Giuliano and Nunn, 2013), has been established by various influential work. Here, we take a different approach: we examine the within-country variation in agricultural suitability. We argue that the magnitude of this variation impacts both the inequality of the value of the land across the country and the asymmetries of opportunity in agricultural production. The differences in the potential for agricultural production is a good way to proxy for within-country wealth inequality, especially for the period before the emergence and consolidation of most modern political institutions.

To operationalize this argument, we rely on agricultural land suitability index developed by Ramankutty et al. (2002), defined as a measure of the probability that land will be cultivated. We use Henderson et al. (2017)'s data set that calculates the value of Ramankutty et al. (2002)'s land suitability index for  $\frac{1}{4}$ -degree cells. Thus, each cell covers approximately 770 square kilometers at the Equator, decreasing with the cosine of latitude. We calculate the coefficient of variation of land suitability of the cells within each country in our data set. We adjust this inequality measure, using the percentage of the population that lives in rural areas. Of course, the higher coefficient of variation of land suitability will cause more inequality when there the proportion of the population living in rural areas are higher. Thus

our *agricultural inequality* variable is *COV land suitability\*(1-urbanization)*, where *urbanization*, taken from Vanhanen (2003), is the percentage of urban inhabitants as a proportion of a country's population.

Table 7 shows consistent negative coefficient estimates for agricultural inequality, implying that a higher level of agricultural inequality is negatively associated with the chance of a transition to democracy. However, it is associated with a greater chance of democratic consolidation.

Table 8 shows a strong connection between agricultural inequality and government ideology. Specifically, a higher level of agricultural inequality is significantly associated with less right-wing ideology overall, more likelihood of having a left-wing government and less likelihood of having a right-wing government.

Table 7: Agricultural Inequality and Democracy

	Democracy	
	(1)	(2)
Lag democracy	7.344*** (0.240)	5.830*** (0.341)
Agricultural inequality	-0.805*** (0.286)	-0.724** (0.286)
Lag GDP per Capita		0.080*** (0.030)
Lag Dem X Agricultural inequality	1.496*** (0.449)	1.332*** (0.444)
Lag Dem X Lag GDP		0.354*** (0.089)
Year	0.010*** (0.002)	0.003 (0.002)
Constant	-23.263*** (4.345)	-8.944** (4.423)
N	9,187	7,840

\*p < .1; \*\*p < .05; \*\*\*p < .01

Table 8: Agricultural Inequality and Ideology

	Ideology		Left		Right	
	(1)	(2)	(3)	(4)	(5)	(6)
Lag democracy	-0.425*** (0.048)	-0.520*** (0.052)	0.585*** (0.110)	0.718*** (0.121)	-0.471*** (0.074)	-0.674*** (0.083)
Agricultural inequality	-0.257*** (0.053)	-0.276*** (0.053)	0.673*** (0.108)	0.671*** (0.109)	-0.502*** (0.084)	-0.514*** (0.088)
Lag GDP per Capita		-0.021*** (0.007)		-0.030** (0.012)		-0.011 (0.011)
Year	-0.0005 (0.001)	0.0002 (0.001)	0.025*** (0.002)	0.027*** (0.002)	-0.006*** (0.001)	-0.007*** (0.001)
Constant	3.132*** (0.094)	3.284*** (0.107)	-5.951*** (0.272)	-6.155*** (0.320)	1.239*** (0.148)	1.667*** (0.177)
N	3,983	3,618	3,983	3,618	3,983	3,618

\*p < .1; \*\*p < .05; \*\*\*p < .01

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