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Inequality and Democratization: A Contractarian Approach

Ben Ansell[1] and David Samuels[1]

Abstract

Scholars continue to grapple with the question of the relationship between economic development and democratization; prominent recent research has focused on the effects of economic inequality. Boix suggests that democratization is likelier when inequality is low, whereas Acemoglu and Robinson argue that democratization is likelier when inequality is at middling levels. Both assume that democratization is a function of autocratic elites' fear of the extent to which a future median voter would redistribute under different levels of inequality. Drawing on contractarian political theory, the authors suggest that democratization is instead a function of demands by rising economic groups for protection from the state. This alternative approach suggests that land and income inequality affect democratization differently: Autocracies with equal land distribution are indeed more likely to democratize, but contrary to the conventional wisdom, income inequality is more likely to promote democratization.

Keywords

democratization, inequality, regime change, modernization theory

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1. Introduction

Recent research on the origins of democracy continues to scrutinize the core idea behind modernization theory, that economic development somehow generates pressure to liberalize nondemocratic regimes. Although some have sought to dismiss this hypothesis (Przeworski, Alvarez, Cheibub, & Limongi, 2000), others have offered new theoretical twists on long-established arguments. In particular, recent books by Carles Boix (2003) and Daron Acemoglu and James Robinson (A&R, 2006) have received wide readership by shifting the focus from the purported effect of the *level* of wealth to that of the *distribution* of wealth on elites' incentives to block or allow political liberalization.

Boix's and A&R's arguments are *redistributivist* theories of democratization. Such approaches do not require modernization to cause mass psychological-cultural change or Marxian working or bourgeois classes to emerge for democratization to come about. Instead, building on Meltzer and Richard's (1981) seminal median voter model of politics, redistributivist theories suggest that regime change is fundamentally driven by autocratic elites' fear of the relative costs of redistribution under democracy: As inequality increases, elites have more to fear from the future median voter in terms of demands for increased taxation and social spending. In contrast, when inequality is low, the median voter will demand less redistribution.

The two books do differ somewhat in predictions: Holding a country's level of wealth and degree of asset specificity constant, Boix suggests that equality and democratization are positively related, whereas A&R predict that an "inverted U" shape relationship exists between inequality and democratization: Transitions are likeliest at moderate levels but unlikely at either very low or very high levels of inequality. Both books thus share the conclusion that relatively high levels of economic inequality are inauspicious for democracy's prospects.

In this article we engage this debate about the relationship between economic inequality and democratization. However, we begin from fundamentally distinct theoretical premises, what we call a *contractarian* approach. In our view regime change is not a function of autocratic elites' fear that the poor and middle classes would expropriate their assets under democracy. It is instead a function of politically disenfranchised yet rising economic groups' struggles to obtain credible commitments against expropriation of *their* income and assets by the autocratic governing elite. This view suggests—contrary to the implications of the redistributivist approach—that political transitions are primarily a function of intraelite conflict rather than a function of a small but monolithic elite's fear of the impoverished multitudes.

The contractarian element of our argument is based on insights from classical political theory—Hobbes, Locke, James Mill, and Benjamin Constant, for example—as well as from contemporary neoinstitutional theories of the state, particularly works by Levi (1988), North and Weingast (1989), and Olson (1993). Our approach also offers a theoretically more nuanced view of the economy by exploring different economic sectors. Although no necessary real-world correlation exists between land and income inequality, the redistributivist approach does not distinguish between a country's inequality in fixed assets such as land (often owned by the incumbent ruling elite in autocracy) and inequality produced by growing sectors in industry and finance (which often accrue to rising groups that lack political representation under autocracy).

Distinguishing among sectors has important implications for regime transitions. Most importantly, it opens up the possibility that the political impact of land inequality could differ from the political impact of income inequality—as for example when a rising economic group (e.g., an urban financial bourgeoisie) lacks political voice relative to a stagnant yet politically entrenched economic group (e.g., a landed elite). In terms of land inequality, the predictions of our contractarian approach do not depart from the conventional wisdom: Inequality supports autocracy whereas equality fosters democratization. Yet this is not because of autocratic elites' fear of redistribution under high inequality but because of a contractarian logic: The more equal the distribution of land, the greater the number of freeholders who fear both taxation and expropriation of *their* land or money by an autocratic elite. Under these conditions, smallholders demand a more representative political system that protects their property rights.

In terms of income inequality, the contractarian approach generates counterintuitive hypotheses. In contrast to the redistributivist argument, we predict democratization will be more likely to emerge when newly wealthy economic groups accumulate an increasing share of national income, leaving the poor far behind. Under these conditions, democratization will be associated with *higher*, not lower, income inequality. Historically, the emergence of a bourgeoisie or even a working class has not generated increased *equality* of incomes. Quite the opposite: As Kuznets (1955) predicted decades ago and as economic historians have confirmed, the process of economic development typically involves (for several decades at least) a pronounced *increase* in income inequality. Yet under autocratic rule, this is precisely the situation in which rising economic groups have more to lose through expropriation *by the state*—even as they also accumulate more resources to invest in transforming the regime. With this dynamic in mind, it is easier

to understand how land *equality* and income *inequality* can be associated with democratization—and how important it is to theoretically distinguish the political effects of both.

The next section reviews the redistributivist specification of the relationship between inequality and democratization and explains how our contractarian approach differs. We then develop a formal model of regime change that distinguishes among types of inequality and the incentives political actors face. Subsequently we conduct a series of tests, using two inequality data sets and two measures of regime change. Our results confirm the existence of a negative relationship between land inequality and democratization and a positive relationship between income inequality and democratization. These findings question the utility of the distributivist approach to democratization and highlight the utility of our contractarian alternative.

2. Democratization: Demand for Redistribution or Demand for Protection?

Building on Meltzer and Richard (1981), Boix (2003) suggests that autocratic elites fear the threat of redistribution less when the future median voter has an income similar to their own. Thus, under conditions of equality elites have little to fear from democratization. Boix also suggests that democratization is more likely when elites hold mobile assets because they can shield their wealth from the threat of taxation. Boix's theory boils down to the proposition that elites democratize when the threat of redistribution of their assets by the poor is low.

A&R (2006) offer the same argument about asset specificity but hypothesize that a more complex relationship between inequality and democratization exists: The relationship looks like an "inverted U."[1] Like Boix, A&R argue that under high inequality elites fear redistribution and repress rather than democratize. Yet in contrast to Boix, A&R argue that democratization is also unlikely under equality because there is little *demand* for redistribution. Given this, they predict that the probability of democratization will be highest at "middling" levels of inequality. In such situations, the rich and other classes compromise. Elites are under some pressure to liberalize, yet because the poor do not pose the same redistributive threat as they would under very high inequality, the elites accept the moderate levels of redistribution that accompany democratization rather than pay the cost of repression under continued autocracy.

Our theoretical understanding of the relationship between inequality and democratization differs in two key ways from both Boix and A&R: (a) in

terms of which social actors are driving regime transitions and expropriating from each other and (b) in terms of the nature of economic inequality. First, Boix and A&R assume that regime change is driven by autocratic elites' evaluation of their expected losses from redistribution under democracy. We suggest that this theoretical approach has things backward. In our view, democratization is best understood as a struggle on the part of disenfranchised groups—including a rising bourgeoisie—to obtain credible commitments against incumbent elites' expropriation of *their* income and assets. This argument draws on classic insights from contractarian political theory and from the contemporary neoclassical theory of the state.

Ever since Thomas Hobbes, political theorists have noted the need for a "Leviathan" to resolve the potential problem of predation by one private party against another. Of course, these same theorists understood that the Leviathan could itself become the predator. For example, both James Madison and John Stuart Mill expressed concern about the tension between effective government and limited government, inferring that a government powerful enough to control citizens would also threaten citizens' liberty.

Contemporary scholarship draws on these insights to make similar points. Thus, Douglas North's "neoclassical theory of the state" and Mancur Olson's conception of the state as a "stationary bandit" both begin from a similar premise: a government powerful enough to enforce contracts between citizens and prevent violations of property rights is also a potential threat to those same contracts and property rights. Under autocracy, governments frequently set up institutions that deny citizens' rights—to life, liberty, *and* property. Olson (1993) suggests that "history provides not even a single example of a long and uninterrupted sequence of absolute rulers who continuously respected the property rights of their subjects," whereas democracies are "the only societies where individual rights to property and contract are confidently expected to last across generations" (p. 572). Given this, North (1990) famously suggested that democratization is a story of the struggle to gradually extend third-party enforcement of contracts and property rights to "eliminate the capricious capacity of a ruler to confiscate wealth, and to develop third-party enforcement of contracts" (p. 51). In general, autocracies cannot credibly commit *not* to expropriate citizens' wealth.

The question remains how democratization comes about. For North (1990), although economic exchange typically involves contracts reached within the existing set of political institutions, democratization occurs because occasionally "the players find it worthwhile to devote resources to altering the more basic structure of the polity to reassign rights" (p. 47). When self-interested socioeconomic actors seek to change the rules of the game, by changing the

regime itself, the outcome depends on the relative bargaining strength of the relevant actors (Knight, 1992)—a process we detail below. Put as simply as possible, rising economic groups' newfound wealth improves their ability to successfully change the regime so as to prevent expropriation.

This approach differs fundamentally from those of both Boix and A&R: Here, democratization is not about whether the median voter is going to soak the rich; it is about whether *all* citizens, but particularly rising economic groups, can obtain impartial protections against violations of contracts and property rights. Democracy is a way to "prevent significant extraction of social surplus by the leader" (Olson, 1993, p. 574), and democratization occurs both because rising economic groups have more to lose from expropriation under autocracy and because their new wealth makes them a greater political threat.

Our approach also differs in terms of how we conceptualize economic inequality. Both Boix and A&R treat inequality homogeneously. That is, neither differentiates the political impact of land inequality versus income inequality. This distinction is theoretically critical because overall inequality can be a function of an unequal distribution of a fixed resource like land or can result from the growth of new economic sectors. Differential growth rates between a relatively stagnant agricultural sector and a growing industrial sector, for example, tend to increase income inequality, *holding the distribution of land constant*. If income and land inequality are not necessarily correlated with each other and if land and income inequality have different effects on democratization, then the redistributivist approach cannot provide an adequate basis for understanding the relationship between economic and political change.

We agree that land inequality should be negatively associated with democratization. Because land is more or less fixed in supply, high land inequality means the elite will be wary of higher taxation or even expropriation of their fixed asset under democracy (as in Ziblatt, 2008). But expropriation can go both ways. Greater equality of land distribution also means more people have a vested interest in preventing an autocratic state from expropriating *their* land or raising their taxes—and hence more people who desire democratic constraints on government.

As far as income inequality, we depart from conventional wisdom and suggest that inequality rather than equality generates pressures to liberalize. Historically, the onset of sustained economic development has tended to *increase* overall economic inequality, largely because it has increased income inequality in nonagricultural sectors of the economy (Kuznets, 1955).[2] Economic development under autocracy thus often means that new

but politically disenfranchised economic groups grow in size and wealth—groups that that have relatively more to lose and that desire the safeguards of contracts and property rights that democracy provides—as income inequality increases.

As a disenfranchised group grows wealthier, as Levi (1988, p. 15) notes, autocrats' relative bargaining power declines. Autocrats want to tax or expropriate the resources of these rising economic groups. Given this, as out-groups grow wealthier they perceive an increase in expected economic losses from expropriation or taxation of their wealth. Yet at the same time their increased wealth enhances their relative bargaining power because economic resources can translate into mobilization and political pressure. As Bates and Lien (1985) note, resource-rich citizens will demand political concessions in return for tax compliance. Out-groups will thus mobilize, investing in protection against expropriation by the state. This is the engine that drives our theoretical model.

Two contrasting historical examples illustrate the dynamic of our argument about income inequality. First, consider China in 1880. At that time the vast majority of China's 370 million citizens were poor, and equally so. Only a tiny slice of society—approximately 2% of the population—could be considered middle or upper class, and very little intragroup inequality existed among commoners (Milanovic, Lindert, & Williamson, 2007). One might reasonably consider Imperial China a highly inegalitarian society. However, China at this time had a Gini coefficient of 0.24, an extraordinarily low figure in comparative perspective. China may have been inegalitarian, but it was an extremely equal society in terms of income distribution.

Now consider the United Kingdom in 1867, the year of the Second Reform Act. At a similar point in history, the United Kingdom was far wealthier on a per capita basis than China, growing much more rapidly, *and far more unequal*. The United Kingdom's Gini coefficient of income inequality that year was 0.50—well above the world historical average—and this inequality was precisely because of the growth of the working class and bourgeoisie. By 1867 the United Kingdom was the world's most industrialized economy, with a highly differentiated occupational structure and with well-established urban middle classes. In contrast, China was deep in a centuries-long economic funk (Pomeranz, 2000). Moreover, far greater intergroup inequality of incomes existed in the United Kingdom than in China. The wealthy landed elite continued to earn a disproportionate share of national income, but the middle classes were rapidly outdistancing the truly poor. Partly for these reasons, the United Kingdom democratized in the latter half of the 19th century, whereas China has yet to democratize.

The question thus turns on the source of increasing income inequality, hence the need to differentiate the economy into sectors and explain why different sectoral growth rates can have different political effects. Land inequality may very well retard democracy, but economic development under autocracy has typically meant that although many remain mired in poverty, some proportion of the population is also growing far wealthier, producing an *increase* in income inequality. These newly wealthy citizens are more eager, willing, and able to fight to protect their economic interests. In contrast, relatively low levels of income inequality are associated with fewer demands for political change. We now develop these theoretical intuitions formally to precisely lay out the logic of our argument.

3. A Model of the Political Effects of Land and Income Inequality

Once we understand that high real-world income inequality is commonly associated with the emergence of a sizeable middle class that is outdistancing the poor and that expropriation of the middle class's wealth is more of a threat under autocracy than democracy, the argument that inequality makes democratization less likely—whether in general, as per Boix, or past some "middling" threshold, as per A&R—falls apart.[3] In this section we develop a formal model of this argument, which shows that democratization tends to follow from increased income inequality deriving from industrial sector growth. That is, under autocracy the growth of an urban middle class is associated with both rising inequality *and* pressures for democracy. Inequality in land, however, has the reverse effect. Greater land equality means greater demand for expansion of democratic protections, to eliminate the autocratic state's caprice.

The key distinctions between our model and A&R's and Boix's are (a) we assume that autocracies are more expropriative than democracies, which means that the tax system is regressive for all but the incumbent elite, (b) we assume inequality differs both within and across sectors of the economy, and (c) we examine the role of three groups: the elite, the bourgeoisie, and the masses. Like any formal model, ours makes several simplifying assumptions. However, ours are more historically appropriate than those of redistributive models. First, they incorporate intersectoral competition between wealthy groups, which both Boix and A&R downplay.[4] Second, they allow us to separate out the effects of land inequality from inequality generated by industrial production. Finally, they generate unexpected theoretical insights regarding the relationship between inequality and democratization,

ultimately implying that demands for regime change follow a contractarian rather than a redistributive logic.

Consider an economy with two sectors: agriculture and industry. A change in aggregate societal inequality could come from three sources: (a) a change in the distribution of land, holding the amount of land constant; (b) a change in the distribution of the income from industrial production, holding the level of industrial production constant; or (c) a change in the relative productivity of the industrial versus the agricultural sector, because of technological innovation in industry, for example. In the last case, industrial output relative to agricultural production increases, meaning disproportionate wealth accrues to those who derive income from industry: We call this differential sector growth "intersectoral inequality."

We divide society into three groups, in descending order of initial wealth: a landed elite that composes a small proportion of the population but that controls a disproportionately large share of the land, an industrial bourgeoisie that composes a slightly larger proportion of the population and that controls little land but obtains a disproportionately large share of industrial output, and the masses, which compose the vast majority of the population and which receive a disproportionately small share of income from both land and industrial output. We normalize population to equal one, with the elite's share being $\sigma_E = \beta$ of the population, the bourgeoisie having $\alpha_B = (1 - \beta)\pi$, and the masses having $\sigma_M = (1 - \beta)(1 - \pi)$. The land sector is fixed to a total output of 1, and the elite controls a share γ of the land, with the remaining $1 - \gamma$ split between the bourgeoisie and the masses according to their population shares, as defined by π. For fixed population shares an increase in γ implies more land going to the elite; thus, γ is *land inequality.*

In contrast to land, the industrial sector can vary in size and produces k industrial output, the income from which is distributed only between the bourgeoisie and the masses, with shares respectively of φ and $1 - \varphi$, where φ represents *industrial inequality*. Wealth derived from industrial-sector growth relative to land (an increase in k, or *intersectoral inequality*) accrues to both the masses and the bourgeoisie but disproportionately to the latter. Increases in any of these measures will increase overall inequality, defined as the average income of the elite and bourgeoisie over that of the masses.[5] Individuals in the elite consequently earn $\gamma/\sigma_E = Y_{Ei}$ and the elite as a whole earn $\gamma = Y_E$. Individuals in the bourgeoisie earn $[(1 - \gamma)\pi + \phi k]/\sigma_B = Y_{Bi}$ and the group earns $(1 - \gamma)\pi + \phi k = Y_B$. Individuals in the masses earn $[(1 - \gamma)\pi + (1 - \phi)k]/\sigma_M = Y_{Mi}$ and the group earns $(1 - \gamma)\pi + (1 - \phi)k = Y_M$.

We now move to the political story. Under autocracy, the elite controls the state and the other two groups are excluded from power. The elite cannot

credibly commit not to set a high tax rate of t_A on the other two groups' income, distributing the proceeds to itself. t_A is not simply the tax rate—it reflects the possibility of expropriation by the elite, occurring with some probability proportional to t_A. This reflects the contractarian concern about expropriation by autocratic rulers and means that tax systems in autocracies are effectively regressive—even for the bourgeoisie. This assumption departs sharply from redistributivist models, which assume that autocratic elites set the tax rate at zero.[6]

In contrast, we assume that any democratic system has a progressive tax structure, in which the government spends taxes on public goods g. Total taxes are tY where Y is average income and this is spent fully on g. Each individual receives $V_i(g)$ in utility from the public good, where $V(.)$ is an increasing concave function. In a partial democracy, the bourgeoisie controls political decision making and chooses its optimal tax rate t_P^* which comes from maximizing individual utility $U_{Bi}(t_p) = (1 - t_p) Y_{Bi} + V_i(t_p Y)$ and is set such that $V_i'(t_p^* Y) = Y_i/Y$. Hence the bourgeoisie benefits from partial democracy by choosing its preferred mix of taxes and public goods, and the elite is worse off than under autocracy where it paid zero taxes.

The game played between the elite and the bourgeoisie involves two stages: In the first the elite decides whether to peacefully grant partial democracy. If it retains autocracy, in the second stage the bourgeoisie can choose to rebel. The bourgeoisie wins a rebellion with probability $p_B(Y_B, Y_E)$, which is increasing in the income of the bourgeoisie and decreasing in the income of the elite. If the bourgeoisie wins it imposes partial democracy, and if it loses autocracy remains. Individuals on both sides pay a cost of fighting, respectively c_{Bi} and c_{Ei}.[7] The bourgeoisie rebels if the expected individual utility of rebellion R_i is greater than zero: $R_i = P_B[(t_A - t_p) Y_{Bi} + V_i(t_p Y)] - c_{Bi}$. To see how various forms of inequality affect the bourgeoisie's decision whether to rebel, we take the derivative of this function with respect to γ, φ, and k and use $V_i'(t_p^* Y) = Y_i/Y$.

Land inequality

$$\frac{\partial R_i}{\partial \gamma} = \frac{\partial p_B}{\partial \gamma}\left[(t_A - t_P) Y_{Bi} + V_i(g)\right] - p_B\left[\frac{\pi}{\sigma_B}(t_A - t_P)\right] < 0$$

Industrial inequality

$$\frac{\partial R_i}{\partial \phi} = \frac{\partial p_B}{\partial \phi}\left[(t_A - t_P) Y_{Bi} + V_i(g)\right] + p_B\left[\frac{k}{\sigma_B}(t_A - t_P)\right] > 0$$

Intersectoral inequality

$$\frac{\partial R_i}{\partial k} = \frac{\partial p_B}{\partial k}\big[(t_A - t_P)Y_{Bi} + V_i(g)\big] + p_B\left[\frac{\phi}{\sigma_B}(t_A - t_P) + \frac{Y_{Bi}}{Y}t_P\right] > 0$$

Beginning with land inequality, bourgeois rebellion is less likely under higher land inequality. First, land inequality increases the wealth of the elite vis-à-vis the bourgeoisie, thereby lowering the probability that the bourgeoisie will prevail in rebellion. We call this the *probability effect*. Second, because the bourgeoisie is relatively poorer when land inequality is higher, it has less income to be expropriated. This means that the bourgeoisie has fewer incentives to rebel because the benefits of setting taxes at its preferred rate under democracy are smaller. In contrast, if land equality were low, the bourgeoisie would own more land and would thus have reason to be more concerned about the elite expropriating or taxing it under autocracy. We call this the *taxation effect*. Combining these two effects, the bourgeoisie is less likely to rebel and push for regime change under high land inequality.

Now consider industrial inequality and its effect on income inequality. Growing inequality within the industrial sector means not only that the bourgeoisie grows wealthier relative to the masses but also that the bourgeoisie grows relatively wealthier relative to the elite. This improves the bourgeoisie's probability of winning a rebellion. Increased wealth also means that the bourgeoisie wants to control tax rates, giving it powerful incentives to rebel.[8]

Finally, greater intersectoral inequality makes bourgeois rebellion more likely, for three similar reasons: the *probability effect*—industrial growth enriches the bourgeoisie, increasing its probability of victory; the *taxation effect*—a richer bourgeoisie prefers to set taxes rather than face autocratic expropriation; and a *public goods effect*—industrial growth increases average incomes through the rising incomes of both the bourgeoisie and the masses, which for a given level of taxation increases the potential supply of public goods under democracy. In summary, high land inequality reduces the incentives for and chances of successful bourgeois rebellion and partial democratization, whereas high income inequality increases these chances.

If the bourgeoisie does not rebel then the elite simply retains autocracy. However, if the bourgeoisie rebels, then the elite must decide whether to grant partial democracy and permit a peaceful transition. The elite will grant partial democracy if the utility from doing so $G_i = (1 - P_B)\,[(1 - t_p)\,Y_{Ei} + V_i\,(tY) - t_A\,(Y_B + Y_M)\,/\,\sigma_E] + c_{Ei}$ is greater than zero. We now examine the effects of

changes in the inequality measures on the benefits of granting partial democracy.

Land inequality

$$\frac{\partial G_i}{\partial \gamma} = -\frac{\partial p_B}{\partial \gamma}\left[-t_P Y_{Ei} + V_i(g) - \frac{t_A Y_B + Y_M}{\sigma_E}\right] + (1 - p_B)\left[\frac{\partial t_P}{\partial \gamma}(Y_{Bi} - Y_{Ei}) + \frac{t_A - t_P}{\sigma_E}\right] < 0$$

Industrial inequality

$$\frac{\partial G_i}{\partial \phi} = -\frac{\partial p_B}{\partial \phi}\left[-t_P Y_{Ei} + V_i(g) - \frac{t_A Y_B + Y_M}{\sigma_E}\right] + (1 - p_B)\left[\frac{\partial t_P}{\partial \phi}(Y_{Bi} - Y_{Ei})\right] > 0$$

Intersectoral inequality

$$\frac{\partial G_i}{\partial k} = -\frac{\partial p_B}{\partial k}\left[-t_P Y_{Ei} + V_i(g) - \frac{t_A Y_B + Y_M}{\sigma_E}\right] + (1 - p_B)\left[\frac{\partial t_P}{\partial k}(Y_{Bi} - Y_{Ei}) + \frac{t_A}{\sigma_E} + t_P \frac{Y_{Bi}}{Y}\right] > 0$$

The effects of land inequality, industrial inequality, and intersectoral inequality are all qualitatively similar to those for the bourgeoisie's choice whether to rebel. For high land inequality, the elite will prefer not to grant partial democracy because they are more likely to prevail in a rebellion and they lose more by paying (any amount of) taxes under partial democracy.[9] For increased industrial inequality the opposite holds. Here the elite is more likely to grant partial democracy because (a) they are more likely to lose the rebellion that occurs if they maintain autocracy and (b) higher industrial inequality reduces the bourgeoisie's preferred tax rate in partial democracy, making partial democracy less costly for the elite. Finally, increased intersectoral inequality also makes granting partial democracy more likely because (a) the elite is more likely to lose the rebellion, (b) the bourgeoisie's preferred tax rate in partial democracy becomes lower, and (c) greater average income because of industrial growth means higher public goods provision. In short, when income inequality is high—or land inequality is low—the elite actually have relatively stronger incentives to offer political concessions.

Thus far we have assumed that the costs of organizing are too high for the masses to enter the game and credibly threaten the elite. We now consider the possibility that the bourgeoisie and masses might ally to jointly

overthrow the elite. The benefit for the bourgeoisie of joining with the masses, producing "full democracy," where the masses control tax setting (choosing t_D^*), as compared to continued autocracy can be written as $R_i^J = P_J [(t_A - t_D) Y_{Bi} + V_i (t_D Y)] - c_{Ji}$, where we assume that $p_J > p_B$, $c_{Ji} < c_{Bi}$, and $t_D > t_P$. The advantages to the bourgeoisie of joint rebellion include a higher probability of victory and lower costs of fighting; the disadvantage is that the tax rate will be higher than it prefers.

Our three equations above have similar predicted effects on the probability the bourgeoisie will choose rebellion once one brings the masses into the story. Provided that $t_A > t_D$ (that autocracies expropriate more than democracies), high land inequality always reduces the likelihood that the bourgeoisie will ally with the masses to rebel jointly because the bourgeoisie's probability of winning is low and it has few resources to expropriate in the first place. Conversely, if land inequality is low, the probability of victory increases, as does the fear of continued losses under autocracy because of expropriation by the elite.

For industrial inequality, the probability effect vanishes. This is because changes in industrial inequality merely alter the distribution of resources between the bourgeoisie and the masses—a change in industrial inequality does not change these two groups' relative wealth vis-à-vis the elite and thus does not change the probability of victory under joint rebellion. However, as industrial inequality increases, the bourgeoisie must also consider the trade-off between the benefits of reduced threat of expropriation relative to the costs of taxation under democracy. As the bourgeoisie grows relatively wealthier from industrial growth, under autocracy it becomes a target for expropriation by the elite—but it also becomes a target for taxation by the masses under democracy. The bourgeoisie's decision ultimately depends on its comparison of existing expropriation under autocracy with expected taxation under democracy.

Finally, increased intersectoral inequality should increase the probability of joint rebellion. Here both the bourgeoisie *and* the masses grow wealthier vis-à-vis the elite—hence their probability of victory is higher. Furthermore, as the masses become richer, their preferred level of taxation will actually decrease (for a given level of industrial inequality), though not to the level preferred by the bourgeoisie. Hence increased intersectoral inequality should also promote joint rebellion. Increased intersectoral (and industrial) inequality should promote joint rebellion and full democracy; increased land inequality should retard both. However, the predicted effects are weaker than in the case of solo bourgeois revolt and partial democratization.[10]

In sum, we expect both partial and full democratization to be negatively associated with land inequality and positively associated with industrial and intersectoral inequality, although our model's expectations are stronger for partial than for full democratization. Our model highlights intraelite political competition rather than positing a game in which the masses confront a monolithic elite. This setup is more historically appropriate than Boix's or A&R's models, which do not differentiate between the industrial and landed sectors or between segments of the wealthy. The bottom line is that when a politically disenfranchised group grows wealthier, its incentives to demand at least partial democracy grow—in contractarian terms because it has more to fear from autocratic expropriation and it has the resources to credibly threaten autocratic stability. Such situations are of increasing, not decreasing, inequality. Our theoretical and empirical predictions thus sharply differ from the redistributivist approach.

4. Testing the Argument

Our approach implies that land and income inequality affect democratization differently. In this section we test these propositions on two different measures of democracy, using a variety of estimation techniques and two different sources of data on income inequality. Few empirical explorations of the impact of inequality on democratization exist. Boix (2003), for example, uses actual income inequality data for only the 1950 to 1990 period. For the pre-1950 era he directly measured only land inequality and used proxies for income inequality. For their part, A&R (2006) rely on case studies and do not conduct quantitative tests.[11]

We explore two different measures of our dependent variable: the dichotomous measure of regime transitions Boix (2003) employed and the 21-point Polity scale. For the former, Boix and Rosato (2001) classified countries yearly as democratic or not going back to 1800, based on whether 50% or more of adult males had the vote or not; a regime transition occurs when a country expands the franchise anywhere beyond this threshold.

For income inequality, we use Bourguignon and Morrisson's (BM) (2002a) data set that covers 55 countries from 1820 to 1992 and Babones and Álvarez-Rivadulla's (BAR) (2007) broader post-WWII data set. For the BM data, we calculated the Gini coefficient from their estimates of the income distribution. BM's estimates are the sole cross-national estimates of income inequality for the pre-1945 period currently available. These data have been cited hundreds of times, yet they have several shortcomings. For example, some countries' estimates are shared with other countries that share economic

structures. Given this, there is likely to be measurement error for at least some countries.[12] We explore techniques for mitigating the shared data problem below. Despite their problems, the BM Gini coefficients do correlate highly (.843) with Deininger and Squire's (1996) "high quality" Gini measures for the postwar era.

To check the robustness of our results using the BM data, we also use the BAR data, which build on Deininger and Squire (1996) and cover 126 states from 1955 to 2004. Although this data set's coverage allows us to explore regime change only in the postwar era, these data offer greater reliability and far broader country coverage for recent years. Together, the BM and BAR data sets provide the broadest range of both time periods and countries available for empirical analysis of income inequality. To the extent that statistical results are similar across these two samples, our argument about the political effects of inequality gain credibility.

For land inequality we adjust Vanhanen's (2003) *family farms* measure, which Boix used. The family farms variable is based on the proportion of all cultivable land worked by families, but this leaves open the possibility that most of the rural population does not live on a "family farm," even if families farm most of the cultivable land. Even with a high proportion of family farms, the relative density of the rural population in areas *not* farmed by families might be high. We therefore adjust family farms by the relative size of the rural population.[13] Our *rural inequality* variable is thus (1 – family farms) (1 – *urbanization*), where urbanization, taken from Vanhanen, is the percentage of urban inhabitants as a proportion of the national population. As rural inequality increases, the probability of democratization should decline.

In the formal model we distinguished among three types of inequality: land inequality, industrial inequality, and intersectoral inequality. Using Gini coefficients of income inequality does not directly distinguish industrial from intersectoral inequality. However, our model predicts similar effects of industrial inequality and intersectoral inequality on (overall) income inequality. Thus, holding rural inequality constant, using an aggregate measure of income inequality operationalizes the joint effect of industrial inequality and intersectoral inequality.

As further controls—and again following Boix—we use Vanhanen's (2003) measure of *educational attainment*, the average of the percentage of literate adults and the number of students per 100,000 population; we also control for per capita income in 1990 U.S. dollars, from Maddison's (2006) estimates. Following Boix, we linearly interpolated all independent variables to fill in the time series. In the remainder of this section, we test our argument

on both measures of democracy, using first the BM data and then the BAR data.

4.1. Long-Term Historical Analysis

We first test our argument using the BM data, which cover 55 countries from 1858 to 1993. Table 1 begins by estimating the effect of various variables of interest on the probability of a democratic transition using the dichotomous Boix–Rosato (2001) measure of regime transition. Models A through C use the dynamic probit estimation technique (with robust standard errors), employed by both Przeworski et al. (2000) and Boix (2003), which estimates the probability of a transition from autocracy to democracy (and vice versa) in a given year.[14] (We focus on the direct effects of the independent variables as opposed to the coefficients on the interacted terms, which are relevant only for questions of democratic consolidation or collapse.)

Model A includes the BM income inequality variable, GDP per capita, rural inequality, and Vanhanen's (2003) knowledge index as well as time trend variables to control for a secular increase over time in the number of democracies.[15] Both income and rural inequality are signed as predicted and are significant at the 1% level. Yet although Model A uses robust standard errors, it does not account for potential serial correlation of errors across countries that share BM inequality data—that is, for the possibility that the effects of inequality on democratization may not be independent within these groups. In Model B, we thus adjust the standard errors by clustering them within these BM groups. This accounts for any potential serial correlation caused by countries sharing income inequality data. The estimates remain robust to this clustering effect, addressing concerns about the "groupedness" of the BM data.[16]

The estimated effects of inequality are substantively large: Moving from the 3rd to the 97th percentile on income inequality makes democratization between 4 and 6 times likelier (from a 1% to a 5% chance in a given year). A similar increase in rural inequality makes democratization between 8 and 12 times less likely (from a 9% to a 1% chance). Even moderate changes have a substantial impact because the model results reflect probabilities of regime change *in a given year*, so over time the cumulative probability of transition increases.

Model C adjusts for another potential concern: endogeneity. It is possible that regime type could affect income inequality (rather than the reverse), for example by permitting (or repressing) the development of trade unions or altering property rights. We approach this problem by using the regional level of income inequality—excluding the country concerned—as an instrument for a country's level of inequality. (These two measures are correlated

Table 1. Historical Data Analysis 1858 to 1992

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I
	Binary	Binary	Binary	Polity	Polity	Polity	Polity	Binary	Polity
	Probit	Probit	Probit IV	Fixed FX	Fixed IV	PCSE	PCSE IV	Probit	Fixed FX
Gini	2.730***	2.730**	3.083*	1.395*	2.246**	1.885***	2.422**	16.607*	−6.415
	(0.891)	(1.235)	(1.805)	(0.834)	(0.996)	(0.729)	(1.142)	(9.201)	(5.956)
GDP per capita	0.178***	0.178***	0.185***	−0.013	−0.001	0.053***	0.066***	0.192***	−0.012
	(0.055)	(0.055)	(0.056)	(0.014)	(0.017)	(0.019)	(0.022)	(0.050)	(0.017)
Vanhanen knowledge (VH)	0.001	0.001	−0.001	−0.009**	−0.009**	0.003	0.000	0.000	−0.010**
	(0.006)	(0.006)	(0.006)	(0.004)	(0.004)	(0.003)	(0.003)	(0.005)	(0.005)
Rural inequality (RI)	−1.406***	−1.406***	−1.413***	−0.526**	−0.471*	−0.691***	−0.844***	0.032	−0.577
	(0.346)	(0.386)	(0.359)	(0.252)	(0.264)	(0.252)	(0.292)	(0.914)	(0.818)
Gini sq.								−15.848	9.394
								(10.776)	(7.459)
RI sq.								−1.254	0.025
								(0.801)	(0.700)
Dem × Gini	−2.998	−2.998*	−3.256					−7.013	
	(1.878)	(1.564)	(2.304)					(15.112)	
Dem × GDP	−0.035	−0.035	−0.041					−0.060	
	(0.072)	(0.080)	(0.071)					(0.085)	

(continued)

17

Table 1. (continued)

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I
	Binary	Binary	Binary	Polity	Polity	Polity	Polity	Binary	Polity
	Probit	Probit	Probit IV	Fixed FX	Fixed IV	PCSE	PCSE IV	Probit	Fixed FX
Dem ×VH	-0.009	-0.009	-0.007					-0.007	
	(0.012)	(0.015)	(0.012)					(0.016)	
Dem × RI	0.005	0.005	0.053					-2.150	
	(0.783)	(0.920)	(0.807)					(2.852)	
Dem × Gini sq.								4.496	
								(17.367)	
Dem × RI sq.								2.235	
								(2.948)	
Lagged DV	5.736***	5.736***	5.735***	0.927***	0.925***	0.938***	0.931***	7.030*	0.927***
	(1.093)	(1.102)	(1.213)	(0.008)	(0.006)	(0.008)	(0.009)	(3.871)	(0.008)
Constant	-15.046	-15.046	-30.225	233.561***	220.653**	72.402	82.402	30.690	217.279**
	(136.292)	(253.014)	(137.511)	(90.541)	(91.795)	(117.986)	(125.311)	(253.256)	(90.882)
Observations	4,769	4,769	4,552	4,838	4,617	4,838	4,617	4,769	4,838

Robust standard errors are in parentheses. Models B and H cluster standard errors by Bourguignon and Morrisson group. Models D, E, and I include country fixed effects. Models F and G include panel-corrected standard errors (PCSEs) adjusted for AR1 autocorrelation.
*p < .1. **p < .05. ***p < .01.

18

at .78.) Although this is not an ideal, randomized instrument, it is substantively exogenous to a country's level of democracy. In Model C we find that using the regional instrument strengthens the relationship between inequality and democratization, though not surprisingly—given the nature of the instrument—the statistical significance of the relationship is somewhat weaker.[17]

Models D through F use the Polity score as the dependent variable, and we therefore shift to linear estimation techniques. This lets us employ country fixed effects, which control for time-invariant attributes of states that might be correlated with both inequality and the propensity to democratize and which help isolate the effects of *changes* in inequality from the *level* of inequality. Our formal model examined the political consequences of economic changes *within* a society, hence fixed effects analyses (not statistically viable for the probit models above) are an important check on the theory's validity. We also use a pooled model to estimate both between- and within-country effects of inequality. Model D shows a borderline significant effect for income inequality even in the presence of country fixed effects. This implies sizeable *long-run* effects of inequality (calculated using the lagged dependent variable): a 0.1 shift over time in the Gini coefficient or the rural inequality measure (both of which range from 0 to 1) produces changes of +1.92 and –0.72 points, respectively, in a country's Polity score.

Model E finds a more robust result and substantively larger effect of income inequality (a 3-point change in the Polity score from a 0.1 long-term increase in income inequality) when one includes country fixed effects and the regional inequality instrument. (Rural inequality becomes marginally less robust in this model.) Models F and G are pooled models with panel-corrected and autocorrelation-adjusted standard errors and dummy variables for each BM inequality group. Here we again see large and robust effects of income and rural inequality on the Polity score. Thus, the effects appear to operate *within* countries as changes in inequality and in the pooled model as a function of both changes *and* levels of inequality.

One critique of using the Polity score is that movements along the index may not be comparable—a shift from –10 to –5 (full to partial autocracy) is not the same as a move from +5 to +10 (partial to full democracy). Our model implies that income inequality should have a greater effect on transitions from autocracy to partial democracy than to full democracy. To test this, we developed a series of 20 threshold variables, one for each point along the Polity index. If a country has a Polity score below a threshold for a particular year it receives a 0, otherwise it receives a 1. We then estimated 20 dynamic probit models as in Model B but using the threshold variables and their

interactions with the independent variables rather than the Boix–Rosato dummy. Table 2 reports the estimated effect of a shift from .35 to .55 on the Gini index on the probability of transition from below to above each threshold. We find positive and robust effects of a shift in income inequality on transitions across thresholds ranging from –6 to +2. However, income inequality has a smaller and less robust effect on the probability of transitions across higher thresholds of the Polity score. This supports the hypothesis that income inequality matters more for transitions to partial than to full democracy.

4.2. Postwar Empirical Analysis

We now test our hypotheses using the BAR data, which run from 1955 through 2004. This data set includes 126 countries, with inequality estimates specific to individual countries, greatly improving data quality. In what follows we replicate the analysis of both binary and continuous measures of regime transitions. However, our expectations differ somewhat for this period, in which Polity shows fewer transitions from autocracy to partial democracy than in the earlier era. Most transitions shifted from full autocracy to full democracy or from partial democracy to full democracy. Given the results of our formal model, which imply income and/or land inequality are more likely to affect transitions to partial but not full democracy, we have reason to believe that the relationship between both income and land inequality should be weaker in the more recent historical period. Finding robust effects of inequality even in a data set limited to this time period would thus powerfully confirm our theoretical claim.

Table 3 presents results. Models A and B use the dichotomous measure of democracy, with Model B instrumenting for income inequality using the regional level of inequality.[18] In both models our results parallel those in the previous section. In Model A the results are less robust than with the BM data: Income inequality is significant at the 10% level, but rural inequality is not significant. Model B, however, shows a highly robust and substantial effect of income inequality on democracy when the regional instrument is employed (and here rural inequality is significant at the 10% level). We extend this analysis in Table 4, which like Table 2 uses the Polity score threshold dummy variables but now with the BAR data. And again the strongest effect of income inequality is on transitions to partial democracy: Income inequality has a positive and robust effect only on transitions across thresholds from −6 to +5 on the Polity score, with larger effects at lower thresholds in this range.

Table 2. Estimated Impact of Move From 5th to 95th Percentile on Income Inequality on Annual Probability of Regime Transition Using Bourguignon and Morrisson Data

Polity threshold	−9	−8	−7	−6	−5	−4	−3	−2	−1	0
First difference	3.621	−4.868	1.518	11.973**	9.193**	9.855**	7.267**	5.757**	5.166**	4.167
Standard error	20.587	9.034	6.192	4.228**	3.379**	3.449**	2.897**	2.422**	2.375**	2.237
Polity threshold	1	2	3	4	5	6	7	8	9	10
First difference	3.220	3.893**	3.013	2.916	2.538	2.114	1.562	0.947	0.077	−1.492
Standard error	2.069	1.938**	1.828	1.749	1.565	1.489	1.253	1.117	1.030	0.783

Values are percentages. First differences are changes in estimated probability of transition from a score below the threshold to a score equal to or above the threshold. All estimates come from dynamic probit analyses as in Model B of Table I.

**$p < .05$.

21

Table 3. Contemporary Data Analysis 1955 to 2004

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I	Model J
	Binary	Binary	Polity	Polity	Polity	Polity	Polity	Polity	Binary	Polity
	Probit	IV Probit	Fixed FX	Fix AR1	Fixed IV	PCSE	PCSE IV	PCSE	Probit	Fixed FX
Gini	1.271*	11.170***	1.442*	3.150**	2.665	2.339***	5.195***	1.387*	9.807*	-5.822
	(0.751)	(3.560)	(0.852)	(1.411)	(4.774)	(0.666)	(1.921)	(0.720)	(5.112)	(6.335)
GDP per capita	0.040	-0.015	-0.075***	0.022	-0.073***	0.040**	0.045**	0.021	0.051	-0.073**
	(0.029)	(0.034)	(0.026)	(0.019)	(0.022)	(0.017)	(0.022)	(0.018)	(0.032)	(0.028)
Rural inequality (RI)	-0.372	-0.500*	-1.004**	-3.013***	-0.971**	-1.684***	-1.721***	-1.383***	1.319	-0.853
	(0.349)	(0.299)	(0.393)	(0.428)	(0.445)	(0.499)	(0.498)	(0.493)	(1.671)	(1.363)
Vanhanen knowledge (VH)	-0.003	-0.000	-0.026**	0.001	-0.025***	0.010**	0.008*	0.011**	-0.002	-0.026***
	(0.005)	(0.004)	(0.010)	(0.006)	(0.007)	(0.005)	(0.005)	(0.005)	(0.005)	(0.010)
Dem × Gini	-0.082	-7.942***							-14.007	
	(1.169)	(2.976)							(10.914)	
Dem × GDP	0.040	0.000**							0.032	
	(0.042)	(0.000)							(0.045)	
Dem × RI	-1.488**	-0.272							-3.043	
	(0.749)	(0.901)							(3.001)	
Dem × VH	0.002	-0.001							0.001	
	(0.008)	(0.006)							(0.008)	
Lagged DV	4.011***	6.162***	0.867***	0.846***	0.867***	0.841***	0.840***	0.834***	7.430***	0.867***
	(0.778)	(0.685)	(0.015)	(0.009)	(0.008)	(0.016)	(0.017)	(0.017)	(2.442)	(0.015)
Communism								-1.037***		
								(0.279)		
Gini sq.									-9.331	8.184
									(6.017)	(6.914)

(continued)

Table 3. (continued)

	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H	Model I	Model J
	Binary	Binary	Polity	Polity	Polity	Polity	Polity	Polity	Binary	Polity
	Probit	IV Probit	Fixed FX	Fix ARI	Fixed IV	PCSE	PCSE IV	PCSE	Probit	Fixed FX
Dem × Gini sq.									15.324	
									(12.085)	
RI sq.									−1.788	−0.200
									(1.787)	(1.283)
Dem × RI sq.									1.604	
									(3.404)	
Constant	−17.921**	−19.723***	−86.714***	−0.128	−87.070***	−16.973*	−18.815**	−25.689***	−18.566**	−85.313***
	(8.700)	(7.184)	(18.391)	(0.665)	(13.034)	(9.087)	(9.123)	(9.351)	(9.054)	(18.612)
Observations	3,828	3,827	3,860	3,734	3,859	3,860	3,532	3,860	3,828	3,860

Robust standard errors are in parentheses. Models A, B, F, G, H, and I have region dummies. Models C, D, E, and J have country fixed effects. Models G and H contain dummies for Islamic majority and oil-exporting status.
*p < .1. **p < .05. ***p < .01.

23

Returning to Table 3, using a continuous measure of democracy (Models C through G), the predicted effects of both income and rural inequality are generally robust. Model C incorporates country fixed effects, and Model D adds an AR1 error term. In both specifications (which consider only within-country changes in inequality and democracy), increases in income inequality are associated with increases in the Polity score. Model E uses the regional instrument and here does not find a statistically significant effect. This may be because this instrument is weaker in the BAR data set or because changes in income inequality in a region do not affect a specific country's Polity score—even though changes in a country's level of income inequality *do* matter.[19] In Models C to E, rural inequality is negatively signed and robust, meaning within-country declines in rural inequality strongly foster democratic transitions.

Models F, G, and H are pooled models, with panel- and autocorrelation-corrected standard errors, and include region dummies as well as controls for two variables typically considered to correlate with autocracy: oil exporter status and Muslim majority population (data from Przeworski et al., 2000). In Model F, both income and rural inequality show a robust effect, in the expected direction. We find similar effects in Model G, which uses the regional inequality instrument. Model H also adds a dummy for whether the country was or had previously been a communist regime (Przeworski et al., 2000). Here we find that the estimated effects of income inequality are smaller and less robust, whereas the communism dummy is highly significant and negatively correlated with regime transition. This finding suggests (not surprisingly) that autocratic systems that manage to politically "endogenize" equality tend to last longer, countering the political effect on regime type of any increase in inequality because of economic change. Arguably, communist dictatorships lasted as long as they did *because* they endogenized equality and prevented the rise of rival economic groups seeking political representation.

4.3. Linear Effects or an "Inverted U"?

So far we have discussed only the linear impact of income and land inequality. However, A&R argued that inequality has an "inverse U-shaped" effect on democratization. We operationalized their hypothesis using a quadratic specification of both income and land inequality and tested the argument on the dichotomous and continuous measures of democracy in Models H and I of Table 1, using the BM data. In no case is the squared term for income or rural inequality statistically significant at the 5% level.[20] We also tested this hypothesis with the BAR data; results are reported in Table 2, Models I and J. Again we find no "inverted U-shaped" effect: The coefficients on the squared

Table 4. Estimated Impact of Move From 5th to 95th Percentile on Income Inequality on Annual Probability of Regime Transition Using Babones and Álvarez-Rivadulla Data

Polity threshold	−9	−8	−7	−6	−5	−4	−3	−2	−1	0
First difference	−27.950	−13.086	−5.561	7.193**	6.946**	7.680**	5.170**	4.886**	4.543**	3.924
Standard error	47.671	12.965	8.043	3.893**	3.466**	3.275**	2.824**	2.747**	2.327**	2.138

Polity threshold	1	2	3	4	5	6	7	8	9	10
First difference	4.061**	4.241**	5.237**	5.017**	4.112**	2.167	2.010	0.679	0.355	−0.767
Standard error	1.944**	1.939**	2.014**	2.002**	1.878**	1.566	1.385	1.200	0.792	0.562

Values are percentages. First differences are changes in estimated probability of transition from a score below the threshold to a score equal to or above the threshold. All estimates use dynamic probit analysis.
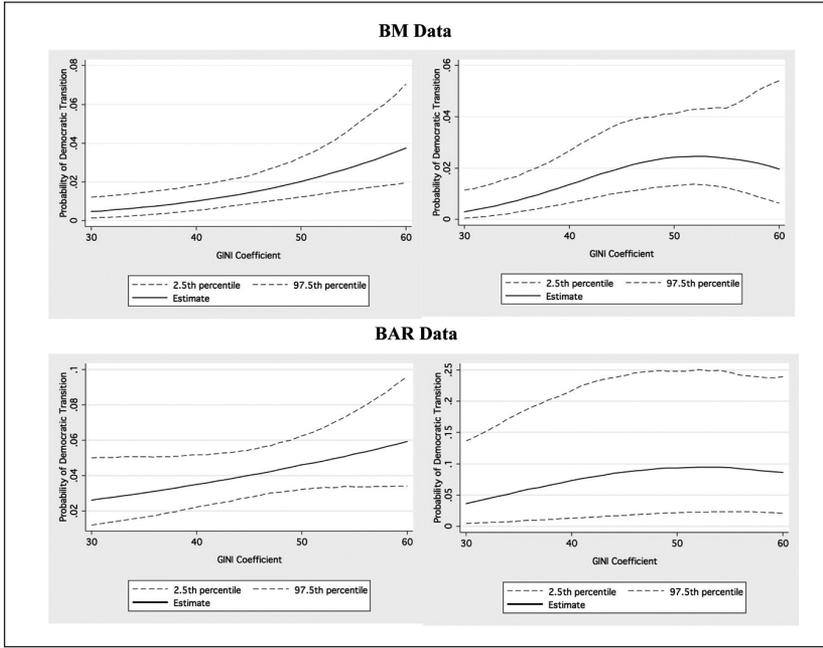**p < .05.

25

Figure 1. Linear versus quadratic estimations and democratic transitions

terms are not robust. Indeed, in the fixed effects model the coefficients are exactly the opposite of what A&R would predict.

Figure 1 helps visualize the differences between the linear and quadratic models, contrasting the predicted probabilities and 95% confidence intervals of democratization at different levels of income inequality for the BM data (Model B vs. Model H of Table 1) and the BAR data (Model A vs. Model I of Table 2). In the linear models the confidence intervals are narrow and always support a monotonically increasing probability of democratization with respect to income inequality. In contrast, the quadratic models exhibit only a slight inflection, with uncertain confidence intervals that show no robust "downward slope" after the inflection.

A&R's theory suggested that countries with "middling" levels of inequality should have the *highest* probability of democratizing. Note, however, that the predicted probability of democratization using the quadratic function *continues to increase well past the mean value of Gini*—up to approximately 0.53 using the BM data, which is in the 75th percentile for autocracies. This

means that even using the quadratic term, autocracies with quite high levels of inequality have *higher* probabilities of transitioning to democracy than autocracies with "middling" levels of inequality, a finding that does not square with A&R's theory. Even at a Gini of 0.55—the 97th percentile of the distribution for autocracies—the probability of transitioning to democracy in the quadratic model with the BM data is exactly the same as at the average for autocracies, 0.46. In short, autocracies with "middling" levels of inequality— of either land *or* income—do *not* have higher probabilities of democratizing than autocracies with high levels of inequality. We find no empirical support for this key prediction of A&R's theory, in contrast to the strong support for our linear hypothesis.

Taken together, our empirical tests support the notion that income and land inequality have separate and powerful independent political effects on democratization, regardless of a country's other attributes. We even found decent evidence in support of our argument for the more recent time period, even though our model gave us reason to believe the results would be weaker. These results call into question the theoretical utility of the redistributivist approach to understanding regime change and instead lend support to our contractarian argument, which highlights the importance of political disputes among competing elites rather than conflict between the elite and the median voter.

5. Conclusion

For decades scholars have debated modernization theory's fundamental hypothesis linking economic development to the emergence of democracy. More recently scholars have sought to identify a relationship between the *distribution* of wealth and democratization. We suggest that recent research on this question, with Boix and A&R at the forefront, has taken a problematic theoretical turn. Beginning from different premises, we derive different conclusions.

Democratization is not about whether the median voter is going to soak the rich; it is about whether citizens can obtain impartial protections from the state against expropriation. This notion draws inspiration from classics of political philosophy and from recent political economy scholarship. Our findings also speak to "modernization theory" hypotheses that relate economic growth to "endogenous democratization." Aggregate country wealth does not drive democratization. Rather, the distribution of the fruits of development matters. Equality of landholding plus inequality of income leads to democracy; departing from this pattern tends to lead to alternate political outcomes. Land equality combined with income inequality is precisely the scenario that gives rise to

greater demands for credible commitments on the part of the state. As ever larger groups of citizens come to hold assets or earn more income, they will seek insurance against expropriation or violations of contracts.

Our empirical results thus call into question the skepticism of Przeworski et al. (2000) regarding the importance of inequality for regime change and challenge the theories of both Boix and A&R. Both Boix and A&R draw on a model of redistributive politics derived from Meltzer and Richard (1981). Meltzer and Richard's argument is problematic as a basis for a theory of transitions from *autocracy* because its predictions about the level of redistribution under *democracy* lack empirical support (Perotti, 1996). The Meltzer–Richard model also requires taxation to be progressive, even though there is no empirical or theoretical reason to believe that autocracies are so constrained: Incumbent autocratic elites can impose regressive taxation on rising economic elites who lack political voice and keep the proceeds. The Meltzer–Richard model thus makes overly restrictive assumptions about who can expropriate from whom under autocracy.

Both Boix and A&R focus on the intentions of the autocratic elites as constituting the "supply" side of democracy. Yet the Meltzer–Richard model was designed for application in *existing* democracies, meaning that the model assumes the supply of regime type as given. This makes the appropriateness of the model for the study of transitions to democracy somewhat dubious; one must assume that incumbent elites have internalized the median voter model in their valuation of the benefits of democracy versus autocracy. In the spirit of scholars with different methodological predilections, for example Moore (1966), Rueschemeyer, Stephens, and Stephens (1992), and Collier (1999), our approach gives relatively greater weight to the "demand" side of democratization, focusing on the decisions of nonincumbent elites—principally but not necessarily exclusively a rising middle class—who stand to benefit from regime change because of reduced threat of expropriation. This theoretical focus highlights the fact that the political implications of inequality can differ across economic sectors. Distinguishing the political impact of the societal distribution of different sorts of economic assets makes it possible to reconcile—more satisfactorily than existing approaches to "endogenous democratization" permit—modernization theory's emphasis on economic growth with a focus—à la Barrington Moore—on political struggles between competing elites.

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Notes

1. We agree that asset specificity may matter in the way Boix (2003) and Acemoglu and Robinson (A&R, 2006) suggest, but we focus on the effects of inequality *within* economic sectors with different degrees of asset specificity.
2. We assume the left-hand side of the Kuznets curve (income inequality increases with initial growth) holds historically, although the right-hand side (inequality then declines) may not.
3. Real-world Gini coefficients never exceed around .7, or go below .2 (Milanovic et al., 2007).
4. Boix's model does not include sectoral differences, though he does incorporate a middle class distinguished by income. A&R do examine sectors but assume that landed and industrial elites belong to the same political group and hence do not compete with one another.
5. Increases in land and/or industrial inequality always increase overall inequality; intersectoral inequality will increase overall inequality provided $\varphi > \gamma + \pi (1 - \gamma)$.
6. Autocracies do spend on public goods (e.g., Magaloni, 2006), but such spending nevertheless tends to be regressive (see, e.g., Ansell, 2010; Wintrobe, 1998).
7. We assume the masses' individual cost to rebellion exceeds individual income.
8. The taxation effect depends on t_A being larger than t_P: taxes or expected expropriation of the bourgeoisie being higher under autocracy than under partial

democracy. Even if this were not so the probability effects could still outweigh the tax effects, sustaining the results.

9. A small positive effect comes from the reduced land income of the bourgeoisie and masses under autocracy, reducing the benefits of expropriation for the elite.

10. One possibility remains: The masses could revolt and expropriate the elite *and* bourgeoisie. The history of social revolutions suggests that the threat of mass revolt ought to make the bourgeoisie wary of joint rebellion. However, high income inequality—especially industrial inequality—should lower the threat of revolution. Inequality means a wealthier bourgeoisie vis-à-vis the masses, making it more likely the bourgeoisie would prevail in a struggle with the masses. It is noteworthy that social revolutions resulting in autocracy have occurred in states such as Russia and China with a small bourgeoisie, relatively *low* income inequality, and relatively *high* rural inequality—precisely the conditions we argue lower the likelihood of democratization.

11. Houle (2009) uses the ratio of income accruing to capital as a proxy for inequality. This does not distinguish among different forms of inequality.

12. The effect of measurement error is typically to bias coefficients toward zero, which means that any significant result is actually evidence in our favor.

13. Our results are substantively similar if we retain the family farms variable.

14. We were able to replicate Boix's results nearly exactly. However, Boix's analysis suffers from high missingness, including only 69% of the number of cases we explore in the long-term historical analysis and only 27% of the number of cases we explore in the postwar period.

15. The time trend is created using the year and its square; results are similar if we use year dummies instead. Time trends also control for waves of democratization.

16. Results are robust to adding dummies for each Bourguignon and Morrisson (BM) group, though doing so is problematic in a probit model. A gompit model with country fixed effects also generates robust results.

17. We obtain more robust results using the 20-year lag of inequality as an instrument. Moreover, a Wald test fails to reject the null that the BM Gini variable is exogenous.

18. Regional inequality is a weaker instrument in the Babones and Álvarez-Rivadulla (BAR) data (which cover more countries and have "larger" regions) than in the BM data, with a .51 correlation with country-level inequality.

19. Using the 5-year lag of inequality as an instrument, we obtain robust results. Furthermore, a Wald test fails to reject the null that the BAR Gini variable is exogenous.

20. The linear model offers a much superior fit according to standard model diagnostics, including the Akaike and Bayesian information criteria and likelihood ratio tests.

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