A Theory of Political Transitions[*]

Daron Acemoglu[†]   James A. Robinson[‡]

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Abstract

We develop a theory of political transitions inspired in part by the experiences of Western Europe and Latin America. Nondemocratic societies are controlled by a rich elite. The initially disenfranchised poor can contest power by threatening social unrest or revolution, and this may force the elite to democratize. Democracy may not consolidate because it is more redistributive than a nondemocratic regime, and this gives the elite an incentive to mount a coup. Because inequality makes democracy more costly for the elite, highly unequal societies are less likely to consolidate democracy and may end up oscillating between regimes or in a nondemocratic repressive regime. An unequal society is likely to experience fiscal volatility, but the relationship between inequality and redistribution is nonmonotonic; societies with intermediate levels of inequality consolidate democracy and redistribute more than both very equal and very unequal countries. We also show that asset redistribution, such as educational and land reform, may be used to consolidate both democratic and nondemocratic regimes.

Keywords: democracy, dictatorship, inequality, political instability, redistribution.

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[†] Massachusetts Institute of Technology, Department of Economics, E52-371, Cambridge, MA 02319; e-mail: `daron@mit.edu`

[‡]University of California, Berkeley, Department of Political Science and Hoover Institute, Stanford University; e-mail: `jarobins@usc.edu`.

1 Introduction

Most Northern European countries extended the franchise during the late 19th and early 20th centuries, and succeeded in consolidating mass democracy. For example, in Britain, following the first tentative reforms of 1832, voting rights were significantly extended in 1867 and in 1884. They were further expanded in 1919, when universal male suffrage was introduced, and in 1928, when all women were allowed to vote. There were no reversals in this process of democratization. Although many less developed countries, most notably those in Latin America, also became democratic during the late 19th and early 20th century, they quickly reverted to nondemocratic regimes.[1] The recent history of many Latin American countries is therefore marred by oscillations in and out of democracy. In Argentina, for example, universal male suffrage became effective in 1912. But it was soon overthrown by a coup in 1930. Democracy was re-instated in 1946, but fell to a coup in 1955, re-created again in 1973, subverted again in 1976, and finally re-installed in 1983. Why has mass democracy been durable in many Northern European countries, and why has it been so hard to consolidate this set of political institutions in less developed countries such as those in Latin America?

This paper provides a framework for analyzing this question. We emphasize that in democratic societies the poor impose higher taxes on the rich than in nondemocratic societies. This makes the poor pro-democratic while simultaneously giving the rich an incentive to oppose democracy.[2] In nondemocratic societies, the poor are excluded from political power, but shocks, for example wars or depressions, may create a revolutionary threat (or at least costly social unrest).[3] The rich (elite) will try to prevent revolution

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[1] Before the mass democratization of the 19th century, Britain had elections with a very restricted franchise, while in Argentina, nondemocratic regimes have often been military dictatorships. We do not distinguish between these different types of non-democratic regimes. We also define any significant move towards mass democracy as "democratization".

[2] For example, Rodrik (1999) shows that democracies tend to have higher wages and higher labor share. In the context of Latin America, there are many examples of military coups specifically aimed at reducing redistribution (see Skidmore, 1967, Smith, 1978, Stepan 1978, and Wallerstein, 1980). For example, in Argentina, the labor share, which increased rapidly during the democratic regime of 1946-49, fell during the following dictatorship (e.g., Di Tella and Dornbusch, 1989, p. 6). There were similar increases in inequality in Brazil after 1964 when the left-wing President Goulart was deposed, and in Chile, the coup of 1973 was aimed in part at stopping and reversing the increasingly redistributive policies of Allende.

[3] Haggard and Kaufman (1995) document the importance of shocks and crises in regime changes. In Acemoglu and Robinson (1997), we provide evidence on the importance of wars and depressions in triggering social unrest from 19th century Europe.

by making concessions to the poor, for example in the form of income redistribution. Because the threat of revolution is often only transitory, current redistribution does not guarantee future redistribution. If this temporary redistribution is insufficient to prevent a revolution, as it will be in a very unequal society, the elite will be forced to make a credible commitment to future income redistribution. This is what extending voting rights achieves by changing the identity of the future median voter.

Democracies are not necessarily permanent because the elite may have an opportunity to mount a coup. The poor would like to commit to low levels of future taxation to prevent this. But since such commitments may not be credible, the elite may prefer to retake power. They are more likely to do so when, due to high taxes, democracy is relatively costly for them. Taxes will be high in turn when inequality is high. So inequality destabilizes democracy by making coups more attractive for the rich elite. As a result, a highly unequal society is likely to fluctuate in and out of democracy.[4] More generally, political instability is more likely when the stakes, economic gains from controlling political power, are greater, a view that can be traced to James Madison (1788).

In consolidated democracies, such as the OECD economies, the threat of coups is not important, so taxes are determined by the usual trade-off for the median voter between transfers and deadweight losses. There is little or no variability in the amount of redistribution. In contrast, in highly unequal economies, fiscal policy is more volatile, because as a society fluctuates between different regimes, the amount of fiscal redistribution changes.[5] Even if an unequal society prevents regime changes, the threat of coups will often limit taxes. More generally, while greater inequality in a consolidated democracy increases redistribution (e.g. Meltzer and Richards, 1981), an unequal society is less likely to be in the more redistributive fully-consolidated democratic regime.[6]

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[4]The connection between inequality and political transitions may account for why many Latin American countries, such as Argentina, Brazil, Peru, and Uruguay, have had difficulty in consolidating democracy, while the more equal European countries and Costa Rica have had more stable democracies. It is also in line with the correlation between inequality and political instability documented by Muller and Seligson (1987) and Alesina and Perotti (1996).

[5]This accords with some of the patterns observed in the data. For example, Gavin and Perotti (1997) show that fiscal policy in Latin America is much more variable than in Europe. They report that the standard deviation of the growth of transfers in Latin America between 1970 and 1995 was 22.4% as compared to 4.4% for industrialized countries.

[6]This may explain the lack of a well-defined monotonic relationship between inequality and redistribution in the data (e.g. Perotti, 1996). Our model is also consistent with the consensus view that "populist" policies are a result of high levels of inequality, and suggests an explanation for why these policies are often reversed radically by regime changes (e.g., Sachs, 1990): populist policies arise as a method of radical redistribution when the poor majority realize that democracy is not consolidated. Countries that consolidate democracy, such as Costa Rica and Colombia, are therefore less likely to follow populist policies. For example, Kaufman and Stallings (1991, p. 27) write "established democracies (Venezuela,

Our basic analysis suggests that high levels of inequality induce frequent regime changes. When, in addition to making concessions, the elite can use a repression strategy, this conclusion needs to be modified. Very high levels of inequality, which make democracy costly for the elite, may encourage them to use repression to prevent democratization. Therefore, low levels of inequality are necessary for a democracy to consolidate, and high inequality is likely to lead to some form of political instability (either regime changes or social unrest suppressed by repression).

Since the incentives to engage in or avoid fiscal redistribution, which are generated by underlying asset inequality, are a key factor in shaping regime dynamics, there is an important role for asset redistribution, e.g. educational and land reforms. Educational reforms that increase the earnings capacity of the poor and land reforms that achieve a more egalitarian distribution of assets may consolidate democracy because they are difficult to reverse, reduce the preferred amount of fiscal redistribution by the median voter, and make democracy less costly for the elite.[7] There is a danger in radical reforms, however, as their anticipation may make a coup more likely as in Guatemala in 1954, Brazil in 1964, and Chile in 1973.

Although the reasons for the changes in regimes are numerous, conflict between different social groups appears to be important in practice. In Acemoglu and Robinson (1997), we presented evidence suggesting that in Britain, France, Germany and Sweden democratization was in large part a response to the threat of revolution and social unrest. In Latin America, many instances of democratization appear to have been driven by the same factors.[8]

Our paper is related to the analyses of the political economy of redistribution (e.g., Meltzer and Richards, 1981, Persson and Tabellini, 1994, and Alesina and Rodrik, 1994, Bénabou, 1999) and to models of social conflict (e.g., Roemer, 1985, Grossman, 1991, Tornell and Velasco, 1992, Ades and Verdier, 1995, and Benhabib and Rustichini, 1995). There is a large political science literature on democratization, starting with the work of

Colombia and Costa Rica in our study) were also associated with orthodox macro policies... It was the transitional democracies (Peru, Argentina and Brazil) that followed populist policies."

[7]This may help to explain why democracy was consolidated in Costa Rica after 1948 and Venezuela after 1958, two countries that instituted land and educational reforms following democratization.

[8]Collier (1998) has recently argued that social pressure from the masses was the driving force behind the most recent democratizations in Peru, Uruguay, and Brazil. Similarly, in Argentina both the 1912 reforms, which institutionalized universal male suffrage, and the withdrawal of the military in 1973, which reinstated Peron, appear to have been a response to increasing social unrest (see Rock, 1987, Ch. 8 and circa p. 188). In Venezuela, the democratizations in 1945 and 1958 both happened in the context of a widespread uprising (see, e.g., Levine, 1989, p. 256, and Kolb, 1974, p. 175). The pattern also appears to be quite similar in Guatemala and El Salvador (see, for example, Paige, 1997).

Lipset (1959) and Moore (1966), which emphasizes the structural determinants of democracy (such as income level and class composition). More recent work has focused on the strategic interaction between regimes and their opponents, and on political rather than economic factors (e.g., Rustow, 1970, O'Donnell and Schmitter, 1986, Przeworski, 1991, Linz and Stepan, 1996). Therborn (1977) and Rueschemeyer, Stephens and Stephens (1992) share our emphasis on the actions of the disenfranchised poor as the key to understanding democratization, and in our previous work, Acemoglu and Robinson (1997), we also emphasized democratization as a commitment to future redistribution. The literature on coups is much less developed and focuses mostly on how purely political factors explain the persistence or collapse of democratic politics (for example, Dahl, 1971, and Linz, 1978). This contrasts with our focus on social conflict and redistribution (though O'Donnell, 1973, also discusses the importance of social conflict in the context of Latin American development strategies).

The paper proceeds as follows. In Section 2, we present our basic model of political development and study the determinants of transitions between regimes. In Section 3, we consider a simple extension of the model to discuss how the elite may use repression to avoid democratization. In Section 4, we extend the basic model to consider asset redistribution. In Section 5, we discuss how the possibility of making transfers group-specific increases political instability. Section 6 concludes.

2 The Basic Model

There are two groups of agents: the poor and the rich (the elite). The political state can be democratic or nondemocratic. In a democracy, the median voter sets the tax rate, and because the poor are more numerous, the median voter is a poor agent. In a nondemocratic regime, taxes are set by the rich. When the political system is nondemocratic, the poor can attempt a revolution, and the elite decides whether to establish democracy. When the system is democratic, the rich can mount a coup. The costs and benefits of coups and revolutions are stochastic, capturing the notion that some periods, such as those following wars or depressions, may be more conducive to social and political unrest. This also enables us to model the fact that those in power cannot commit to future tax rates, which will be determined in future political equilibria.

2.1 The Environment

We consider an infinite horizon economy with a continuum 1 of agents. A proportion λ of these agents are "poor", while the remaining $1 - \lambda$ form a rich "elite". Throughout the paper superscript p denotes poor agent and r denotes rich agent (or member of the elite). We will treat all poor agents as identical, and all members of the elite are also identical. Initially, political power is concentrated in the hands of the elite, but $\lambda > \frac{1}{2}$ so that if there is full democracy, the median voter is a poor agent.

There is a unique consumption good y, and a unique asset with total stock, h (which can be thought of as physical or human capital or land). We begin our analysis of the economy at time $t = 0$ where each poor agent has capital h^p and each member of the elite has $h^r > h^p$. These capital stocks are exogenous. To parametrize inequality, let $h^r = (1 - \theta)h/(1 - \lambda)$ and $h^p = \theta h/\lambda$ where $\lambda > \theta > 0$, so that a low level of θ corresponds to higher inequality. Without loss of any generality, we also normalize the aggregate stock of capital, h, to 1. The final good is produced from capital, and total output of an agent is $y_t^i = h^i$ for $i = p, r$.

All agents have identical preferences represented by $E_t \sum_{j=0}^{\infty} \beta^{t+j} c_{t+j}^i$, for $i = p, r$, where β is the discount factor and E_t is the expectations operator conditional on all information available at time t. Post-tax income is given by, $\hat{y}_t^i \equiv (1 - \tau_t)h^i + T_t^i$, where $\tau_t \geq 0$ is the tax rate on income, and $T_t^i \geq 0$ is the lump-sum transfer that an agent of group i receives from the state. For now, we simplify the analysis by assuming that taxes are linear and transfers cannot be person specific, hence $T_t^i = T_t$. Group-specific transfers will be discussed in Section 5. We also assume that it is costly to raise taxes: at tax rate τ_t, there is a deadweight cost of $C(\tau_t)$, where C is twice continuously differentiable with $C(0) = 0$, $C'(0) = 0$, $C'(\tau) \geq 0$ for all $\tau > 0$, and $C'' \geq 0$. If there were no costs of taxation, our general results would not be altered, but some of the comparative statics would not apply when the tax rate is at the corner, i.e. $\tau = 1$. To avoid keeping track of this case, we assume $C'(\tau) > 0$ and $C'(1) = \infty$, which ensure an interior tax rate. The government budget constraint implies $T_t = \tau_t \left[\lambda h^p + (1 - \lambda)h^r \right] - C(\tau_t) = \tau_t - C(\tau_t)$.

The λ poor agents are initially excluded from the political process but can attempt a revolution in any period $t \geq 1$. We assume that if a revolution is attempted and a fraction $\xi \leq 1$ of the poor take part, it always succeeds. However, in the course of the revolution, a proportion $1 - \mu > 0$ of the capital of the economy is destroyed. After a revolution, poor agents who have participated in the revolution take control of the output, μ, and share it among themselves. Therefore, when all poor agents take part in the revolution, each

receives μ/λ in every period, while the rich receive nothing. A low value of μ implies that a revolution is relatively costly. We assume that μ is stochastic and changes between two values: μ^h and $\mu^l = 0$ with $\Pr(\mu_t = \mu^h) = q$, independent of the previous realization. We assume that $q < 1/2$ so that the threat of revolution is relatively rare.

In a democracy, the elite have no special voting power (one-person-one-vote), but they can attempt a coup. After a coup, the political situation reverts back to the initial status quo with the elite controlling political power. We ignore the free rider problem among the elite, and assume that the cost of a coup for each member of the elite is φ, where $\varphi \in \{\varphi^h, \varphi^l\}$, $\varphi^h > \varphi^l > 0$ and $\Pr(\varphi_t = \varphi^l) = s$. Assume that $s < 1/2$ so that the coup threat, like the threat of revolution, is relatively rare. Only in state φ^l will the rich want to mount a coup, so we let $\varphi^h \to +\infty$.

If a coup is mounted, then $\mu = \mu^l$ at first so that there is no revolution immediately. Similarly, if democratization occurs, then democracy starts with the coup cost at φ^h, implying that a democracy has at least some window of opportunity before a coup can occur. Finally, in each nondemocratic period the elite have to decide whether or not to extend the franchise. If it is extended, then the economy becomes a democracy, and the median voter, a poor agent, sets the tax rate.

The timing of events within a period can be summarized as follows.

1. the state μ or φ is revealed.

2. the poor set the tax rate, τ, if we are in a democracy, and the rich set τ, otherwise.

3. in a nondemocratic regime, the rich decide whether or not to extend the franchise. In a democracy, they decide whether to mount a coup. If they extend the franchise or a coup takes place, the party that comes to power decides whether to keep the tax τ set at stage 2 or set a new tax rate.

4. the poor decide whether or not to initiate a revolution. If there is a revolution, they share the remaining output of the economy. If there is no revolution, the tax rate decided at 2 or 3 gets implemented.

5. incomes are realized and consumption takes place.

2.2 Analysis

The tax rate, τ^m, which maximizes the indirect utility of a poor agent in the absence of a coup threat, satisfies

$$\tau^m = \arg\max_\tau \langle (1-\tau)h^p + [\tau - C(\tau)] \rangle$$

where the term in square brackets is the lump-sum transfer, T. The first-order condition of this problem gives

$$C'(\tau^m) = \frac{\lambda - \theta}{\lambda} \tag{1}$$

where we used the fact that $h^p \equiv \theta/\lambda$. (1) implies that τ^m is uniquely defined and decreasing in θ. When inequality is higher, the maximum tax rate is also higher, and when $\theta = \lambda$, so that $h^r = h^p$, we have $\tau^m = 0$. Hence, in the case of complete equality, the median voter sets a zero tax rate and there is no redistribution.

All poor agents have the same preferences, and when it comes to whether or not to participate in a revolution, there is no "free-rider problem" because if an agent does not take part in the revolution, he can be excluded from the resulting redistribution.[9] So, we can treat all poor agents as one player. Also all members of the elite have identical preferences, and we can also treat them as one player in a repeated game. This economy can therefore be represented as a repeated game between the elite and the poor.

We will characterize the pure strategy Markov Perfect Equilibria of this game in which strategies only depend on the current state of the world. The state is one of (φ^l, D), (φ^h, D), (μ^l, E), or (μ^h, E), where E denotes elite in power (nondemocratic regime) and D denotes democracy. The actions of the elite consist of a decision to extend the franchise $\gamma = 1$ in state E, and a tax rate τ^e when $\gamma = 0$ (i.e. when franchise is not extended). Clearly, if $\gamma = 0$, the state remains at $(., E)$, and if $\gamma = 1$, it switches to $(., D)$. If the state is $(., D)$, the elite choose $\zeta = 1$, i.e. they mount a coup, or $\zeta = 0$, no coup. Following a coup, the elite also make a taxation decision. The actions of the poor consist of a decision to initiate a revolution, ρ, when the state is $(., E)$, and a tax rate τ^d when the state is $(., D)$. In state $(., E)$, the actions of the poor are conditioned on the current actions of the elite who move before the poor according to the timing of events above, while in state $(., D)$, the actions of the elite are conditioned on the actions of the poor. Then, a pure strategy Markov Perfect equilibrium is a strategy combination denoted $\{\sigma^p, \sigma^r\}$, such that

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[9]There could be a coordination problem whereby all poor agents expect others not to take part in a revolution, so do not take part themselves. However, since taking part in a revolution imposes no additional costs irrespective of whether it succeeds or not, it is a weakly dominant strategy, and we therefore ignore this coordination problem.

σ^p and σ^r are best-responses to each other for all possible states. We will characterize the Markov Perfect Equilibria by writing the appropriate Bellman equations.

In a democracy, the median voter is a poor agent (since $\lambda > 1/2$). Let $V^i(\varphi^h, D)$ be the value of an agent of type $i = p, r$ when there is democracy and when the cost of mounting a coup is φ^h. Similarly, let $V^i(\varphi^l)$ be the value of agent i when the cost is φ^l (in which case there may be a switch to a nondemocratic regime, as a result of a coup).

When the state is (φ^h, D), there are no constraints on the median voter, so he will choose the tax rate τ^m. The returns to poor and rich agents are:

$$V^i(\varphi^h, D) = h^i + \delta^i(\theta) + \beta \left[(1 - s)V^i(\varphi^h, D) + sV^i(\varphi^l) \right], \tag{2}$$

where $i = p, r$, and $\delta^i(\theta)$ is the net amount of taxation that a person of type i receives when the tax rate is τ^m. Hence, $\delta^i(\theta) = T^m - \tau^m h^i$, and from the assumption that the budget is balanced, $T^m = \tau^m - C(\tau^m)$. Note that, $\delta^r(\theta) < 0 < \delta^p(\theta)$, and $\frac{d\delta^r(\theta)}{d\theta} = \frac{\tau^m}{1-\lambda} > 0$ while $\frac{d\delta^p(\theta)}{d\theta} = -\frac{\tau^m}{\lambda} < 0$ by the Envelope Theorem. Intuitively, higher inequality raises the tax rate on the rich, while simultaneously increasing net transfers to the poor.

$V^i(\varphi^l)$ is the value to agent i in state (φ^l, D). In this state, the poor may reduce the tax rate below τ^m, say to a level τ^d, in an attempt to prevent a coup, yielding values

$$V^i(\varphi^l, D, \tau^d) = h^i + \Delta^i(\theta) + \beta \left[(1 - s)V^i(\varphi^h, D) + sV^i(\varphi^l, D, \tau^d) \right]. \tag{3}$$

where $i = p, r$, and $\Delta^i(\theta) = T^d - \tau^d h^i$. Clearly, $\Delta^p(\theta) \leq \delta^p(\theta)$, and $\Delta^r(\theta) \geq \delta^r(\theta)$ because $\tau^d \leq \tau^m$. After observing the tax rate τ^d, the elite decide whether to mount a coup, so

$$V^r(\varphi^l) = \max_\zeta \left\langle \zeta \left[V^r(\mu^l, E) - \varphi^l \right] + (1 - \zeta)V^r(\varphi^l, D, \tau^d) \right\rangle \tag{4}$$
$$V^p(\varphi^l) = \zeta V^p(\mu^l, E) + (1 - \zeta)V^p(\varphi^l, D, \tau^d),$$

where recall that $\zeta = 1$ implies a coup. A coup will take the society to the state (μ^l, E) where the elite are in power and there is no threat of revolution, thus they set $\tau = 0$. Hence, for $i = p$ or r, we have:

$$V^i(\mu^l, E) = h^i + \beta \left[(1 - q)V^i(\mu^l, E) + qV^i(\mu^h, E) \right]. \tag{5}$$

A coup in state (φ^l, D), $\zeta = 1$, is therefore optimal for the elite if

$$V^r(\mu^l, E) - V^r(\varphi^l, D, \tau^d) \geq \varphi^l \tag{6}$$

This is the *coup constraint*: a coup occurs if the gain to the rich of capturing political power and reducing taxation is greater than the cost of the coup, φ^l.

We can first determine a critical value of the cost of coup, $\widehat{\varphi}(\theta, q, s)$, such that as long as $\varphi^l > \widehat{\varphi}(\theta, q, s)$, a coup is never beneficial for the rich, even if the poor continue to tax at the rate $\tau = \tau^m$ in state (φ^l, D). This critical value is given by $\widehat{\varphi}(\theta, q, s) = V^r(\mu^l, E) - V^r(\varphi^l, D, \tau^m)$, where $V^r(\varphi^l, D, \tau^m) = \frac{h^r + \delta^r(\theta)}{1-\beta}$ is the return to the rich of always remaining in democracy with a tax rate $\tau = \tau^m$. Imposing $V^r(\mu^h, E) = V^r(\varphi^h, D)$ in (5),[10] we obtain this critical value as:

$$\widehat{\varphi}(\theta, q, s) = \frac{-\beta \delta^r(\theta)(1-q)}{1 - \beta(1-q)}. \tag{7}$$

When $\varphi^l > \widehat{\varphi}(\theta, q, s)$, the coup threat does not play a role, and democracy is fully consolidated. The tax rate, τ^m, is always determined by the usual trade-off for the median voter, balancing transfers against the deadweight losses of taxation. Observe that $\frac{\partial \widehat{\varphi}(\theta, q, s)}{\partial \theta} < 0$, which implies that a less unequal society is more likely to achieve a fully consolidated democracy. This is intuitive since a greater level of inequality makes democracy less attractive for the rich.

We can next determine the value of the cost of coup, $\overline{\varphi}(\theta, q, s)$, such that if $\varphi^l > \overline{\varphi}(\theta, q, s)$, the poor can stop a coup by setting a low enough tax rate in the state (D, φ^l) (or conversely, when $\varphi^l < \overline{\varphi}(\theta, q, s)$, even a policy of setting $\tau^d = 0$ does not stop a coup). Since the lowest tax rate that the poor can set is $\tau = 0$, $\overline{\varphi}(\theta, q, s)$ is given by $V^r(\mu^l, E) - V^r(\varphi^l, D, \tau^d = 0) = \overline{\varphi}(\theta, q, s)$.

Combining (2) and (3), and setting $V^r(\varphi^l) = V^r(\varphi^l, D, \tau^d)$, we can calculate the value of always remaining in democracy for the rich. From this, we define $V^r(\varphi^l, D, \tau^d = 0) = \frac{h^r + \beta(1-s)\delta^r(\theta)}{1-\beta}$ as the maximum value the median voter can credibly commit to give to a rich agent under democracy. Now, solving (2) and (5) with $V^r(\mu^h, E) = V^r(\varphi^h, D)$ and $V^r(\varphi^l) = V^r(\mu^l, E) - \varphi^l$, we obtain:

$$\overline{\varphi}(\theta, q, s) = \frac{-\beta \delta^r(\theta)(1 - s - q)}{1 - \beta(1-q)} \tag{8}$$

Expression (8) is intuitive. Recall that $\delta^r(\theta) < 0$ and $1 - s - q > 0$, so $\overline{\varphi}(\theta, q, s)$ is decreasing in q and s. If q is high, then elite control following a coup will be short lived because a revolutionary threat will reoccur quickly. This reduces the expected benefits from a coup. Similarly, if s is high, the coup constraint binds regularly, and because in this state the rich pay relatively low taxes, democracy is less costly to them. Also clearly, $\overline{\varphi}(\theta, q, s) < \widehat{\varphi}(\theta, q, s)$.

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[10]Note that $V^r(\mu^h, E) = V^r(\varphi^h, D)$ applies along the equilibrium path. Since the economy starts with the elite in power, we can only be in a democracy because the franchise was extended. Therefore, if a coup takes place, along the equilibrium path, democracy will occur again in the future when $\mu = \mu^h$.

More important for the focus of the paper is that $\frac{\partial \overline{\varphi}(\theta,q,s)}{\partial \theta} < 0$: higher inequality increases the threshold $\overline{\varphi}(\theta, q, s)$ and makes a coup more likely because in an unequal society the rich lose more under democracy.

If $\varphi^l > \overline{\varphi}(\theta, q, s)$, then democracy is semi-consolidated: the poor can avoid a coup by reducing the tax rate below τ^m in state (φ^l, D) and setting $\tau = \tau^d$ such that $V^r(\mu^l, E) - \varphi^l = V^r(\varphi^l, D, \tau^d)$. Although the society always remains democratic, the threat of a coup is still important and influences taxes: the tax rate τ^d is less than τ^m, which the poor would have set in the absence of this threat. This tax rate τ^d is given by the equation $(1 - \beta(1 - s - q))\Delta^r(\theta) + \beta(1 - s - q)\delta^r(\theta) + \varphi^l(1 - \beta(1 - q)) = 0$, where $\Delta^i(\theta) = T^d - \tau^d h^i$. Implicit differentiation shows that τ^d is increasing in θ: $\partial \tau^d / \partial \theta > 0$, so higher inequality reduces the tax rate that is required to prevent a coup.[11]

If $\varphi^l < \overline{\varphi}(\theta, q, s)$, even a strategy of setting $\tau = 0$ by the poor will not prevent a coup. In this case, the society will revert back to a nondemocratic regime when $\varphi = \varphi^l$. The poor would like to prevent such an outcome, and if they could, they would promise lower tax rates in the future. However, such promises are not credible because future tax rates are determined in future political equilibria, and once the threat of coup disappears, the tax rate will rise back to τ^m. Forward-looking elites, realizing this, prefer a coup, even though this is a costly outcome for the society.

Now consider the state (μ^h, E). If the poor did not attempt a revolution in this state, the elite would stay in power forever and set $\tau = 0$, so the poor would receive utility equal to $\frac{h^p}{1-\beta}$. In contrast, with a revolution in state $\mu = \mu^h$, they would obtain $V^p(R) = \frac{\mu^h}{\lambda(1-\beta)}$, the per-period return from revolution for the infinite future discounted to the present. Notice that only the value of μ^h at the time of the revolution matters, hence the per-period return is constant over time (and this also implies that in the state $\mu = \mu^l = 0$, a revolution will never occur). We now assume

Assumption 1: $\mu^h > \theta$,

which ensures that when $\mu = \mu^h$, the revolution threat is binding.

In case of a revolution, the rich lose everything, i.e. $V^r(R) = 0$. They will therefore attempt to prevent it at all costs. They can do this in two different ways. First, they can extend the franchise, $\gamma = 1$, giving the poor their return under democracy, $V^p(\varphi^l, D)$.

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[11]Notice that this equation can be written as

$(1 - \beta(1 - s - q)) \left[\frac{\tau^d(\theta - \lambda)}{1 - \lambda} - C(\tau^d) \right] + \left[\frac{-\delta^p(\theta)}{1 - \lambda} - \frac{C(\tau^m)}{1 - \lambda} \right] \beta(1 - s - q) + \varphi^l(1 - \beta(1 - q)) = 0$, where τ^m is the maximum tax rate defined by (1). Differentiating and noting that $d\delta^p(\theta)/d\theta < 0$ and $\partial \tau^m / \partial \theta < 0$, we obtain $\partial \tau^d / \partial \theta > 0$.

Second, they can choose to maintain political power, $\gamma = 0$, but redistribute through taxation. In this case, the rich impose a tax rate τ^e and give the poor return $V^p(\mu^h, E, \tau^e)$ where

$$V^i(\mu^h, E, \tau^e) = h^i + \eta^i(\theta) + \beta \left[qV^i(\mu^h, E, \tau^e) + (1-q)V^i(\mu^l, E) \right] \qquad (9)$$

and $\eta^i(\theta) = T^e - \tau^e h^i$. So the poor receive net income $(1 - \tau^e)h^p$ from their own earnings and transfer $T^e = \tau^e - C(\tau^e)$, giving them income of $h^p + \eta^p(\theta)$. If next period, we are still in state $\mu = \mu^h$, then redistribution continues. But, if in the next period the economy switches to $\mu = \mu^l$, redistribution stops. This captures the notion that the elite cannot commit to future redistribution, unless the future also poses an effective revolution threat. Also note that $\tau^e \leq \tau^m$, that is, the elite will not tax themselves at a rate higher than τ^m, since this is the rate that maximizes redistribution to a poor agent. If this tax rate is not sufficient to stop a revolution, then no tax rate $\tau^e \in [0, 1]$ will do so.

With either democratization or redistribution by the elite, the poor may still prefer a revolution. Thus, given the actions γ and τ^e of the elite, the value to the poor in the state (μ^h, E) is

$$V^p(\mu^h, E) = \max \left\langle V^p(R); \gamma V^p(\varphi^h, D) + (1-\gamma)V^p(\mu^h, E, \tau^e) \right\rangle.$$

Combining (5) and (9), we calculate the maximum utility that can be given to the poor without extending the franchise:

$$V^p(\mu^h, E, \tau = \tau^m) = \frac{h^p + (1 - \beta(1-q))\delta^p(\theta)}{1 - \beta} \qquad (10)$$

where we used the fact that to give maximum utility to the poor, the elite would set $\tau = \tau^m$, hence $\eta^i(\theta) = \delta^i(\theta)$. The poor compare (10) to $V^p(R)$. This defines a critical value of μ^h,

$$\overline{\mu}(\theta, q) = \lambda(1 - \beta(1-q))\delta^p(\theta) + \theta \qquad (11)$$

such that $V^p(\overline{\mu}(\theta, q), E, \tau = \tau^m) = V^p(R)$. For $1 > \mu^h > \overline{\mu}(\theta, q)$, a revolution is so attractive for the poor in state μ^h that even the maximum amount of redistribution by the rich cannot stop it. Democratization is therefore the only option left to the elite. Notice also that $\frac{\partial \overline{\mu}(\theta, q)}{\partial \theta} = 1 + \lambda(1 - \beta(1-q))\frac{\partial \delta^p(\theta)}{\partial \theta} > 0$, so high inequality reduces the revolution threshold because the poor are worse off in a nondemocratic regime.

For $\mu^h < \overline{\mu}(\theta, q)$, democratization can be avoided by redistributing to the poor in state (μ^h, E). In this case, the tax rate that the elite have to set in order to avoid revolution is

$\tau = \tau^e$, such that $V^p(\mu^h, E, \tau^e) = V^p(R)$. which is increasing in μ^h, and decreasing in θ (i.e. increasing in the level of inequality).[12]

Finally, we restrict attention to the area of the parameter space where democratization prevents a revolution, that is $V^p(\varphi^h, D) \geq V^p(R)$. Since democracy is not necessarily an absorbing state, the value function $V^p(\varphi^h, D)$ takes into account the future possibility of coups. The value to the poor of a semi-consolidated democracy is higher than that of a democracy subject to coups, so it suffices to ensure that the value to the poor of an unconsolidated democracy is greater than $V^r(R)$. Solving (2) and (5) simultaneously with $V^p(\mu^h, E) = V^p(\varphi^h, D)$ and $V^p(\varphi^l) = V^p(\mu^l, E)$, we obtain this sufficient condition as:[13]

Assumption 2:

$$\frac{(1 - \beta(1 - s - q))\theta + \lambda(1 - \beta(1 - q))\delta^p(\theta)}{1 - \beta(1 - s - q)} \geq \mu^h,$$

Now we can establish the following result (proof in the text):

Proposition 1: Suppose Assumptions 1 and 2 hold and the society starts in a nondemocratic regime. Then:

1. If $\mu^h < \overline{\mu}(\theta, q)$, then the society remains nondemocratic. When $\mu = \mu^l$, $\tau = 0$, and there is no redistribution. When $\mu = \mu^h$, $\tau = \tau^e$ where $V^p(\mu^h, E, \tau^e) = V^p(R)$. A higher level of μ^h or lower θ (higher inequality) increase both the amount of redistribution and the variability of fiscal policy.

2. If $\mu^h > \overline{\mu}(\theta, q)$ and $\varphi^l > \widehat{\varphi}(\theta, q, s)$, then we are in a fully consolidated democracy. The society switches to democracy the first time $\mu = \mu^h$, and remains democratic thereafter, and taxes are always given by $\tau = \tau^m$.

3. If $\mu^h > \overline{\mu}(\theta, q)$ and $\varphi^l < \widehat{\varphi}(\theta, q, s)$, but $\varphi^l > \overline{\varphi}(\theta, q, s)$, then we are in a semi-consolidated democracy. The society switches to democracy the first time $\mu = \mu^h$, and remains democratic thereafter. When $\varphi = \varphi^h$, $\tau = \tau^m$. When $\varphi = \varphi^l$, $\tau = \tau^d < \tau^m$ such that $V^r(\mu^l, E) - \varphi^l = V^r(\varphi^l, D, \tau^d)$. A lower φ^l reduces the amount of redistribution and increases the variability of fiscal policy. A lower level of θ (higher inequality) increases the variability of fiscal policy but may increase or decrease the overall level of taxation.

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[12]$\tau^e = \frac{\mu^h - \theta}{(\lambda - \theta)(1 - \beta(1-q))} + \frac{\lambda C(\tau^e)}{\lambda - \theta}$. So $\frac{\partial \tau^e}{\partial \theta} = -\frac{\frac{1}{1-\beta(1-q)} - \tau^e}{(\lambda - \theta) - \lambda C'(\tau^e)}$. Since $\tau^e < 1 < \frac{1}{1 - \beta(1-q)}$, and $(\lambda - \theta)/\lambda = C'(\tau^m) > C'(\tau^e)$ (by the convexity of C), we have $\frac{\partial \tau^e}{\partial \theta} < 0$.

[13]Assumption 2 will hold when democracy is sufficiently redistributive. This leads to an interesting trade-off: a highly redistributive democracy leads to political instability, but if the potential for redistribution is too limited, democratization does not prevent revolution.

4. If $\mu^h > \overline{\mu}(\theta, q)$ and $\varphi^l < \overline{\varphi}(\theta, q, s)$, then we are in an unconsolidated democracy. The society continuously switches regimes. In a nondemocratic regime, when $\mu = \mu^l$, the elite set $\tau = 0$, and when $\mu = \mu^h$, they extend voting rights. In a democracy, when $\varphi = \varphi^h$, $\tau = \tau^m$, and when $\varphi = \varphi^l$, there is a coup. A lower level of θ (higher inequality) increases both the level of redistribution and the variability of fiscal policy. The variability of fiscal policy is greater than in the other three cases, and there is less redistribution than in cases 2 and 3, and more than in case 1.

In the first type of equilibrium where $\mu^h < \overline{\mu}(\theta, q)$, a revolution is sufficiently costly that given the amount of inequality and the value of q,[14] the elite can avoid it by redistributing. Therefore, in state μ^l, the elite set $\tau = 0$, while in state μ^h, they redistribute by setting the tax rate τ^e, which is just enough to stop a revolution. In this equilibrium, there is never democratization and the amount of redistribution is relatively limited. More inequality nonetheless increases the level of redistribution in this regime because the rich are forced to choose higher taxes to prevent a revolution in the state (μ^h, E).

Now consider the case with $\mu^h > \overline{\mu}(\theta, q)$. When the economy transits into state μ^h, the rich can no longer maintain their political power via redistribution, and must extend the franchise. There are three types of equilibria depending on the value of φ^l. If $\varphi^l > \widehat{\varphi}(\theta, q, s)$, democracy, once created, is fully consolidated. When the state first moves from μ^l to μ^h, the elite are forced to extend the franchise. After this, the poor always set $\tau = \tau^m$. In this type of society, the amount of redistribution is at its highest level, there is very little or no fiscal volatility, and the threat of a coup plays no role once the society becomes democratic. We interpret this case as similar to the situation in most OECD countries. It is more likely to arise when θ is high, that is when the society is fairly equal.

The second possibility is that $\varphi^l < \widehat{\varphi}(\theta, q, s)$, but $\varphi^l > \overline{\varphi}(\theta, q, s)$. In this case, democracy is not fully consolidated; if the poor were to set a tax rate τ^m in the state (φ^l, D), a coup would occur. However, the poor can avoid a coup by setting a lower tax $\tau = \tau^d$ in state (φ^l, D), which is just sufficient to dissuade the elite from mounting a coup. Although the society always remains democratic, it is in some sense "under the shadow of a coup", as the threat of a coup keeps overall redistribution below the level

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[14]With q low, the revolution threat is transitory, thus the poor realize that they will only receive transfers for a short while and then transfers will cease. We might think of this as a non-credible promise of future redistribution by the elite. Unconvinced by this promise, the masses would attempt a revolution. The revolution is only prevented by franchise extension.

of a fully consolidated democracy.[15] In fact, we show below that higher inequality may reduce redistribution in a semi-consolidated democracy.

The final type of equilibrium involves $\mu^h > \overline{\mu}(\theta, q)$ and $\varphi^l < \overline{\varphi}(\theta, q, s)$. In this case, democracy is unstable: when the state moves to φ^l, a coup is relatively attractive for the elite, and cannot be halted by reducing taxes. As a result, the economy will stochastically fluctuate between democracy and elite control. More specifically, the economy starts with the elite in power and they set $\tau = 0$. Whenever the state moves to μ^h, they extend the franchise after which the poor set $\tau = \tau^m$. But as soon as the state goes from (φ^h, D) to (φ^l, D), they mount a coup, regain political power, and set $\tau = 0$. The variability of fiscal policy is therefore highest in this equilibrium, and the amount of redistribution is less than in cases 2 and 3, but more than in case 1. Higher inequality increases redistribution in this regime because it increases the tax rate when there is democracy, while there is never any redistribution during dictatorships. Notice that in this case, when the poor are in power, they set the maximum tax rate, fully anticipating that redistribution will eventually come to an end as a result of a coup. This result may help to explain the existence of highly redistributive, but relatively short-lived, populist regimes of Latin America (see, for example, Kaufman and Stallings, 1991, and Sachs, 1990, on populism).

There are four conclusions to be drawn from this analysis. The first links inequality to regime changes. A decrease in θ reduces $\overline{\mu}(\theta, q)$, and increases $\overline{\varphi}(\theta, q, s)$ and $\widehat{\varphi}(\theta, q, s)$. Therefore, societies with more initial inequality are more likely to switch between democracy and dictatorship, and less likely to have a fully consolidated democracy. So our results are in line with the empirical findings of a positive association between inequality and political instability (e.g. Muller and Seligson, 1987, and Alesina and Perotti, 1996).

The second conclusion pertains to the link between inequality and redistribution. To see this, fix the cost of coup φ^l, and define $\theta^H > \theta^L$ such that $\varphi^l = \widehat{\varphi}(\theta^H, q, s)$ and $\varphi^l = \overline{\varphi}(\theta^L, q, s)$. Moreover, suppose that $\mu^h > \overline{\mu}(\theta^L, q)$. When $\theta > \theta^H$, $\varphi^l > \widehat{\varphi}(\theta, q, s)$, so inequality is sufficiently low that democracy is fully consolidated. Now consider an increase in inequality (a reduction in θ). This will increase redistribution at first as in the standard models of voting over redistribution (e.g. Meltzer and Richards, 1981), since $\frac{\partial \tau^m}{\partial \theta} < 0$. However, as θ falls below θ^H, democracy is no longer fully consolidated, but semi-consolidated, i.e., $\varphi^l \in (\overline{\varphi}(\theta, q, s), \widehat{\varphi}(\theta, q, s))$. In this case, the poor are forced to reduce taxes from τ^m to τ^d in the state (φ^l, D), so overall redistribution falls. In fact,

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[15]Wantchekon (1998) argues this has been the case in El Salvador, and Weyland (1996) argues that the redistribution in democratic Brazil is restrained by the threat of military intervention. This result is also related to Ellman and Wantchekon (1998) and Wantchekon (1998) who analyze how the threat of conflict initiated by the loser of a democratic election affects the voting outcomes.

in a semi-consolidated democracy, the relationship between inequality and taxation is ambiguous. The average tax rate is $\tau^a = (1-s)\tau^m + s\tau^d$. τ^m is increasing in inequality while τ^d is decreasing. If the cost of taxation $C(\tau)$ is highly convex, then the second effect dominates and the average tax rate falls as inequality rises, though it is still more likely that taxation increases when inequality increases.[16] Intuitively, higher inequality makes a coup more attractive for the elite, so to prevent the coup, the poor have to reduce the tax rate substantially in the state φ^l, leading to lower redistributive taxation on average. As inequality increases further, we have $\theta < \theta^L$ so $\varphi^l < \overline{\varphi}(\theta, q, s)$, and democracy is now unconsolidated with lower overall redistribution than both in fully and semi-consolidated democracies. Therefore, there is a nonmonotonic relationship between inequality and redistribution, with societies at intermediate levels of inequality redistributing more than both very equal and very unequal societies.[17]

The third implication of our analysis is related to fiscal volatility. The relationship between fiscal volatility and inequality is likely to be increasing. Within each regime, higher inequality leads to more variability. Moreover, higher inequality makes Case 4, which has the highest amount of fiscal variability, more likely. This may explain why fiscal policy has been much more volatile in Latin America than in the OECD (Gavin and Perotti, 1997).

The final implication of our analysis is that the costs of redistribution will also have an impact on the equilibrium political system. Suppose that the cost of taxation becomes less convex, so that $C(\tau^m)$ is unchanged, but $C'(\tau^m)$ decreases. Since deadweight losses from taxation are now lower, the median voter will choose a higher level of taxation. However, as τ^m increases, so will $-\delta^r(\theta)$, so democracy becomes more costly to the elite, and hence less likely to be consolidated. This implies that in societies where taxation creates less economic distortions, for example in societies where a large fraction of the GDP is generated from natural resources, democracies may be harder to consolidate.

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[16]A sufficient condition for the average tax rate to fall as inequality rises is
$C''(\tau^m) > \frac{(1-s-\beta(1-s-q))\left[(1-\lambda)C'(\tau^p)-(\theta-\lambda)\right]}{\lambda s[(1-\beta(1-s-q))\tau^p+\beta(1-s-q)\tau^p]}$.

[17]Previous explanations of why high levels of inequality may not generate high levels of redistribution have emphasized different ideas. First, the rich may control more votes (Bénabou, 1999, Rodriguez, 1998). Second, the poor may view themselves as upwardly mobile and not vote for high redistribution (Wright, 1996, Bénabou and Ok, 1998). Third, if redistribution fulfills an insurance function and if insurance is a normal good, increasing inequality may reduce the demand for insurance and hence redistribution (Moene and Wallerstein, 1998). Finally, there may multiple dimensions on which citizens vote, splitting the constituency for redistribution (Roemer, 1998).

3   Repression

So far we have assumed that the rich can mount a coup in a democracy, but we have not allowed them to use repression when the society is nondemocratic in order to prevent social unrest. Such repression is observed in many cases, for example, in Indonesia in 1965 and in El Salvador in 1932. In this section, we will show that the possibility of repression will qualify some of our results. The main results of our analysis so far are:

1. democracies are more likely to consolidate in more equal societies.

2. frequent regime changes are more likely in more unequal societies.

In this section, we show that in very unequal societies, the elite may have so much to lose from democratization as to prefer a repression strategy to suppress revolution and prevent democratization. As a result, the relationship between inequality and regime changes is potentially nonmonotonic as well, but democratic consolidation continues to be more likely in a more equal society.[18]

To analyze these issues in the simplest possible way, suppose that the elite are in power, and we have $\mu^h > \overline{\mu}(\theta, q)$ and $\varphi^l > \widehat{\varphi}(\theta, q, s)$, so that if the society democratizes, it will remain so forever, and the rich will obtain $V^r(\varphi^l, D, \tau^m) = \frac{h^r + \delta^r(\theta)}{1-\beta}$. Assume also that the rich can hire an army with the sole purpose of suppressing revolutionary threats, at per period cost M for each member of the elite, and that this strategy completely avoids the threat of revolution.[19] It is clear that with this strategy the rich will have a return $V^r(\operatorname{Re} p) = \frac{h^r - M}{1-\beta}$. It follows immediately that the rich will find it beneficial to use repression if

$$M < -\delta^r(\theta) \tag{12}$$

This condition will be satisfied if inequality is sufficiently high, i.e., if $\theta < \theta^M$ where $\theta^M = \delta^{r^{-1}}(-M)$. Next, define θ^R such that $\mu^h = \overline{\mu}(\theta^R, q)$; so the elite cannot prevent a revolution with redistribution if $\theta < \theta^R$. This implies that when $\theta^R \leq \theta^M$, there will be no democratization: a level of inequality that is large enough to make democratization necessary will also make military repression desirable. More interestingly, if $\theta^R > \theta^M$, a society with $\theta \in (\theta^M, \theta^R)$ will democratize because social unrest cannot be prevented by redistribution and military repression is too costly. In contrast, if $\theta < \theta^M$, then

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[18]Political instability is more likely in more unequal societies also, as long as social unrest suppressed by repression is counted as "political instability".

[19]For example, the army may be financed by taxation, in which case M is the tax paid by each member of the elite for this purpose.

inequality is so high that the elite are willing to pay for military repression in order to prevent democratization.[20] Finally, if $\theta > \theta^R$, then there will be no democratization either, this time because the elite can prevent social unrest by redistribution.

It is still true that among the countries that democratize, those with greater inequality are less likely to consolidate democracy and will therefore oscillate between democracy and dictatorship. It is only those with $\theta \in (\theta^M, \theta^R)$ and $\varphi^l > \overline{\varphi}(\theta, q, s)$ that transit to and consolidate democracy. The second condition requires inequality to be low. Therefore, our main result that low levels of inequality are conducive to the consolidation of democracy continues to hold in this model with repression. Political instability, either in the form of frequent regime changes or repression, is also more likely when inequality is high.

4 Asset Redistribution

We now extend the model of Section 2 to allow for asset redistribution as well as fiscal redistribution. To simplify the analysis, we ignore the possibility of repression, and focus on the configurations of interest rather than giving a complete characterization of all the possible cases. Let us define θ_0 to be the initial distribution of assets and use θ for the distribution after redistribution has been undertaken.

Unlike fiscal redistribution, if asset inequality is reduced, it is permanent[21] and cannot be reversed, but it also has permanent costs. We model the costs by assuming that asset redistribution reduces the total stock of assets in the economy. If h is the initial stock, then the post-redistribution stock is $H(\theta)$, where H is a concave twice continuously differentiable decreasing function, i.e. $H'(.) < 0$ and $H''(.) < 0$, so asset redistribution reduces total resources. Also obviously $h = H(\theta_0) = 1$.

4.1 Asset Redistribution under Democracy

Recall that θ^L is defined by $\varphi^l = \overline{\varphi}(\theta^L, q, s)$ where $\theta^L > \theta_0$, and assume $\varphi^l < \overline{\varphi}(\theta_0, q, s)$ so that without any asset redistribution the economy would oscillate between regimes. Hence, for democracy to be (semi-)consolidated, inequality needs to be reduced, i.e. θ_0 needs to be raised to θ^L. Also assume that $\theta^R > \theta_0$ where $\mu^h = \overline{\mu}(\theta^R, q)$. We first assume

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[20]Notice that the formulation with a fixed cost of military repression is not essential for this result. Even if the degree of repression is variable, it will be the societies with greater inequality, where the elite have more to lose from democratization, that use more repression.

[21]For our general results, asset redistribution does not need to be permanent, it only needs to be harder to reverse than fiscal redistribution. In practice, it may be easier to reverse asset distributions than democracy, which is ultimately an empirical question.

that θ^R is very high, so we ignore it in this subsection.

Let $V^p(\varphi^h, D, \theta)$ be the present discounted value of a poor agent in a democracy when the cost of a coup is φ^h, there is democracy, and the distribution of assets is given by θ.

$$V^p(\varphi^h, D, \theta) = \theta H(\theta)/\lambda + \delta^p(\theta) + \beta\left[(1-s)V^p(\varphi^h, D, \theta) + sW^p(\theta)\right] \tag{13}$$

where $\delta^p(\theta)$ is defined as in the previous section and $h^p \equiv \theta H(\theta)/\lambda$. The continuation value, $W^p(\theta)$, after the coup cost transits to state φ^l, depends on θ relative to θ^L. If $\theta < \theta^L$, then the poor will be unable to stop a coup by redistributing, and therefore:

$$W_1^p(\theta) = \theta H(\theta)/\lambda + \beta\left[(1-q)W_1^p(\theta) + qV^p(\varphi^h, D, \theta)\right] \tag{14}$$

On the other hand, if $\theta > \theta^L$, coups can be stopped, so:

$$W_2^p(\theta) = \theta H(\theta)/\lambda + \Delta^p(\theta) + \beta\left[(1-s)V^p(\varphi^h, D, \theta) + sW_2^p(\theta)\right] \tag{15}$$

where $\Delta^p(\theta) = \tau^d(1-h^p) - C(\tau^d)$ is defined as in the previous section (and $\Delta^p(\theta) = \delta^p(\theta)$ if $\varphi^l > \widehat{\varphi}(\theta, q, s)$).

Solving (13) and (14) simultaneously (i.e. imposing $W^p(\theta) = W_1^p(\theta)$), we obtain that if $\theta < \theta^L$:

$$V_1^p(\theta) = \frac{\theta H(\theta)/\lambda + \delta^p(\theta)}{1-\beta} - \frac{\beta s \delta^p(\theta)}{(1-\beta)(1-\beta(1-q-s))} \tag{16}$$

which is the value function that applies when coups occur along the equilibrium path.

When $\theta > \theta^L$, we solve (13) and (15) (i.e. $W^p(\theta) = W_2^p(\theta)$) to obtain the value function when coups are avoided as:[22]

$$V_2^p(\theta) = \frac{\theta H(\theta)/\lambda + (1-\beta s)\delta^p(\theta) + \beta s \Delta^p(\theta)}{1-\beta} = V_1^p(\theta) + X > V_1^p(\theta), \tag{17}$$

where $X \equiv \frac{\beta s}{1-\beta}\left[-\frac{C(\tau^d)}{\lambda} + \frac{\varphi^l(1-\beta(1-q))(1-\lambda) - \beta(1-s-q)C(\tau^m)}{\lambda(1-\beta(1-s-q))}\right] > 0$.

To determine equilibrium asset redistribution, let $\theta' = \arg\max V_1^p(\theta)$, bearing in mind that we might be at a corner solution with $\theta' = \theta_0$ where no asset redistribution is chosen. Also, let $\theta'' = \arg\max V_2^p(\theta)$. Then:

1. If $\theta'' > \theta^L$, the masses will redistribute assets up to θ''. Intuitively, in this case, the level of redistribution that the poor prefer ignoring the coup constraint also prevents coups. This case is illustrated in Figure 1.

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[22]Observe that $\lambda\delta^p(\theta) + (1-\lambda)\delta^r(\theta) = -C(\tau^m)$ and $\lambda\Delta^p(\theta) + (1-\lambda)\Delta^r(\theta) = -C(\tau^p)$. Combining these with the equation that determines τ^d in footnote 11, we obtain $\Delta^p(\theta) = \frac{\varphi^l(1-\beta(1-q))(1-\lambda)}{\lambda(1-\beta(1-s-q))} - \frac{C(\tau^p)}{\lambda} + \frac{\beta(1-s-q)}{(1-\beta(1-s-q))}\left[-\frac{C(\tau^m)}{\lambda} - \delta^p(\theta)\right]$. Substituting in (17), we obtain $V_2^p(\theta) = V_1^p(\theta) + X$.

2. If $\theta'' < \theta^L$, and $V_1^p(\theta') > V_2^p(\theta^L)$, then the poor will redistribute to θ', and coups will occur along equilibrium path.

3. Otherwise, the level of redistribution will be θ^L. This case, illustrated in Figure 2, is probably the most interesting one for our purposes as it illustrates that the poor may choose a high level of redistribution in order to prevent coups.
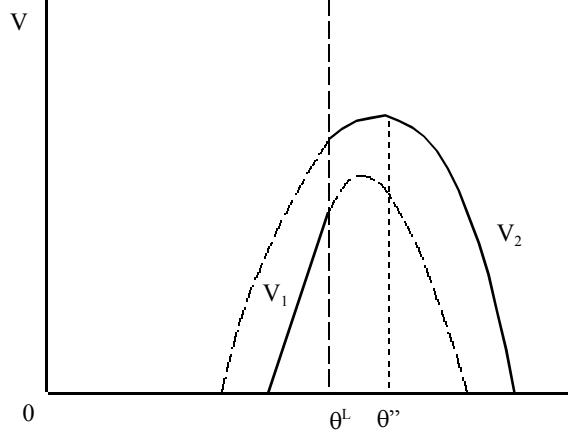

Figure 1:

An increase in φ^l increases the gap between $V_1^p(\theta)$ and $V_2^p(\theta)$ (i.e. raises X in (17)), making coups less attractive for the elite. This reduces the concessions that the poor have to make to defend democracy. Therefore, it makes them more willing to choose a higher level of asset redistribution to consolidate democracy. Also, an obvious comparative static pertains to the level of inequality: if $\theta_0 \geq \theta^L$, there will not be a motive to redistribute assets in order to consolidate democracy. So we may expect asset redistribution to emerge as a method of consolidating democracy especially in relatively unequal democratic regimes that are expected to be threatened in the future.

Overall, therefore, the main implication of this analysis is that asset redistribution can help to consolidate democracy. Whenever the choice of the poor is θ^L or greater, coups no longer occur along the equilibrium path because asset redistribution has changed the level of inequality permanently, and makes coups less attractive for the elite.
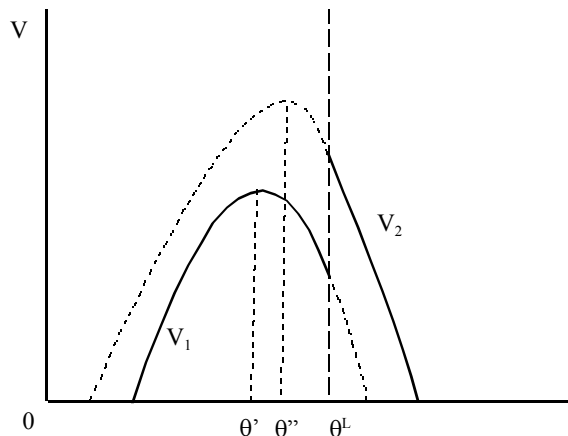
19

Figure 2:

In practice, asset redistribution appears to have played such a role in a number of instances. In Acemoglu and Robinson (1997), we argued that educational expansion in 19th century Britain and France was in part a result of democratization, and Engerman, Mariscal and Sokoloff (1998) argue the same for Latin America. In Britain and France, these and other policies reduced inequality and there were no significant reversals in the process of democratization. In Costa Rica, the educational and land reforms that reduced both earnings and land inequality after the democratization in 1948 appear to have helped with the consolidation of democracy (see Yashar, 1997, for this argument, and Vilas, 1995, for some numbers).[23] The situation in Venezuela after the return to democracy in 1958, which led to a land reform redistributing 19.3 percent of agricultural land,[24] also provides some support to this view (see Powell, 1971).

4.2 Anticipated Asset Redistribution and Political Instability

We have so far illustrated the role of asset redistribution in consolidating democracy. Since asset redistribution is permanent and costly to the elite, the anticipation of such

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[23]Chalker (1995) writes that "the most remarkable egalitarian measure in Costa Rica occurred in the 1960's and 1970's when the concentration in income distribution was reduced. Interestingly this was an outcome, rather than a cause of, democratic politics."

[24]See Table 10.2 in Cardoso and Helwege (1992).

redistribution may also make a coup more attractive.

We will now analyze this using a simple extension of our model. Suppose that $\varphi^l > \overline{\varphi}(\theta_0, q, s)$ (i.e., $\theta > \theta^L$) so that democracy is (semi-)consolidated without asset redistribution. Consider the first period of democracy, in the state with φ^h. The poor may want to redistribute assets, this time not to consolidate democracy but to increase their incomes. However, we assume that there is a one period delay between the legislation and the implementation of asset redistribution. For example, land reforms involve administrative delays. If, during this period, the state switches from (φ^h, D) to (φ^l, D), then the rich may mount a coup to avoid asset redistribution before it is implemented. To simplify the analysis, we assume that during the process of asset redistribution (i.e. in both the period of legislation and implementation), there will be no fiscal redistribution.

To analyze this case, first write the value to the rich after asset redistribution changes inequality to $\widehat{\theta}$ as $\widehat{V}^r(D)$,

$$\widehat{V}^r(D) = \frac{(1 - \widehat{\theta})H(\widehat{\theta})/(1 - \lambda) + \beta(1 - s)\delta^r(\widehat{\theta}) + \beta s \Delta^r(\widehat{\theta})}{1 - \beta}$$

(whether the state is (φ^l, D) or (φ^h, D) does not matter as there is no current fiscal redistribution).

Suppose now that asset redistribution is legislated in the state (φ^h, D), then the value to the rich is

$$\widetilde{V}^r(\varphi^h, D) = \frac{(1 - \theta_0)H(\theta_0)}{1 - \lambda} + \beta\left[(1 - s)\widehat{V}^r(D) + s \max\left\{\widehat{V}^r(D), \widehat{V}^r(\mu^l, E) - \varphi^l\right\}\right]$$

This value function takes into account that if, during the period of administrative delay, the state switches to φ^l, the rich may mount a coup. The value to the rich in the state (μ^l, E) is

$$\widehat{V}^r(\mu^l, E) = (1 - \theta_0)H(\theta_0)/(1 - \lambda) + \beta\left[(1 - q)\widehat{V}^r(\mu^l, E) + q\widetilde{V}^r(\varphi^h, D)\right]$$

Solving these equations, the critical value, $\widetilde{\varphi}^l$, at which $\widehat{V}^r(D) = \widehat{V}^r(\mu^l, E) - \widetilde{\varphi}^l$, is

$$\widetilde{\varphi}^l = \frac{-(1 + \beta q)\left[\kappa^r(\widehat{\theta}) + \beta(1 - s)\delta^r(\widehat{\theta}) + \beta s \Delta^r(\widehat{\theta})\right]}{1 - \beta(1 - q)}$$

where $\kappa^r(\widehat{\theta}) \equiv (1 - \widehat{\theta})H(\widehat{\theta})/(1 - \lambda) - (1 - \theta_0)H(\theta_0)/(1 - \lambda) < 0$ is the loss for the rich as a result of asset redistribution. In the case where $\varphi^l < \widetilde{\varphi}^l$, the elite would mount a coup following asset redistribution legislation, if the cost of the coup were to change to φ^l.

Define $\kappa^p(\widehat{\theta}) \equiv \widehat{\theta}H(\widehat{\theta})/\lambda - \theta_0 H(\theta_0)/\lambda$ similarly, then we can notice that $\kappa^p(\widehat{\theta}) + \beta(1 - s)\delta^p(\widehat{\theta}) + \beta s \Delta^p(\widehat{\theta})$ is the discounted average per-period transfer to the poor, hence $\kappa^p(\widehat{\theta}) +$

$\beta(1-s)\delta^p(\widehat{\theta}) + \beta s \Delta^p(\widehat{\theta}) \geq \kappa^p(\theta) + \beta(1-s)\delta^p(\theta) + \beta s \Delta^p(\theta)$ for any θ since $\widehat{\theta}$ is chosen optimally. Since taxation and asset redistribution are costly, this in turn implies that $\kappa^r(\widehat{\theta}) + \beta(1-s)\delta^r(\widehat{\theta}) + \beta s \Delta^r(\widehat{\theta}) < \kappa^r(\theta_0) + \beta(1-s)\delta^r(\theta_0) + \beta s \Delta^r(\theta_0) < \beta\delta^r(\theta_0)(1-s-q)$. Hence, $\widetilde{\varphi}^l > \overline{\varphi}^l$ as defined by (8). So, there exist values of $\varphi^l \in (\overline{\varphi}^l, \widetilde{\varphi}^l)$ such that without asset redistribution, democracy is consolidated, but if, during the period of administrative delay after asset redistribution, the cost of a coup switches to φ^l, the elite will attempt a coup. If s, the probability that the cost of the coup switches to φ^l, is low enough, the masses may prefer to enact asset redistribution despite its potentially destabilizing effects. Therefore, the main conclusion of this subsection is that asset redistribution, which is generally in the interest of the poor and often useful in consolidating democracy, may create a temporary period of instability for a democracy.

A number of coups in Latin America appear to have been motivated by a desire to prevent radical land reform. For example, in Brazil, a central aim of the coup in 1964 was to prevent the attempt by the left-wing President Goulart to by-pass the veto of the Congress and use other means to push through agrarian reform (see, for example, Skidmore, 1967, and Wallerstein, 1980). Similarly, most scholars argue that the agrarian reform after 1952 in Guatemala was the main motivation for the coup of 1954 (Handy, 1984, Trudeau, 1993), and that the increasing radicalization of Allende's policies, especially on land reform, precipitated the coup of 1973 in Chile.[25] The same is true in Venezuela, where the 1948 land reform law was immediately repealed by the incoming military government (see Dorner, 1992, p. 47, and Powell, 1971).

4.3 Asset Redistribution in Nondemocratic Regimes

The rich may also wish to undertake asset redistribution in order to stop a revolution or democratization. Therefore, our analysis in this subsection will reveal another strategy for the elite when faced with the threat a revolution, in addition to democratization and repression. We continue to assume $\mu^h > \overline{\mu}(\theta_0, q)$,[26] but suppose that $\varphi^l > \widehat{\varphi}(\theta_0, q, s)$ so that democracy, if created, will be fully consolidated. We also assume that redistribution away from the poor is not possible, i.e. $\theta \geq \theta_0$.

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[25]See Valenzuela (1989). Brown (1989, p. 236) writes "a second generation of [agrarian] reform was clearly gaining momentum in the latter part of Allende's administration - a fact that was not lost on counterreform elements that ultimately supported Pinochet's coup d'état." Of the land originally expropriated by Allende's government, 43% was returned to previous owners or excluded from the reform by other means, see Jarvis (1989, p. 249).

[26]Hence, $\theta^R > \theta_0$, so that the level of inequality that prevents democratization is less than the initial level.

The value function for the rich when the state is μ^l and inequality is equal to θ is:

$$V^r(\mu^l, E, \theta) = (1-\theta)H(\theta)/(1-\lambda) + \beta\left[(1-q)V^r(\mu^l, E, \theta) + qW^r(\theta)\right] \qquad (18)$$

where $h^r \equiv (1-\theta)H(\theta)/(1-\lambda)$ and $W^r(\theta)$ is their return after the state switches to μ^h.

If $\theta < \theta^R$, then democratization would take place in the state (μ^h, E). The assumption $\varphi^l > \widehat{\varphi}(\theta_0, q, s)$ also ensures that $\varphi^l > \widehat{\varphi}(\theta, q, s)$ for any $\theta \geq \theta_0$, so democracy, once created, will always be fully consolidated. Our above analysis then implies that the return to the rich under a consolidated democracy is $W_1^r(\theta) = \frac{(1-\theta)H(\theta)/(1-\lambda)+\delta^r(\theta)}{1-\beta}$. Hence, using $W^r(\theta) = W_1^r(\theta)$ in (18), we find that when $\theta < \theta^R$, $V_1^r(\mu^l, E, \theta) = \frac{(1-\theta)H(\theta)}{(1-\beta)(1-\lambda)} + \frac{\beta q \delta^r(\theta)}{(1-\beta)(1-\beta(1-q))}$ is the value function of the elite when they cannot prevent democratization. In this case, the elite may wish to undertake asset redistribution in order to reduce $\delta^r(\theta)$ depending on whether asset or fiscal redistribution is more costly to them. In what follows, we assume that asset redistribution is sufficiently costly that the elites will not do this, so $\arg\max V_1^r(\mu^l, E, \theta) = \theta_0$.[27]

In contrast if $\theta \geq \theta^R$, democratization can be avoided by redistributing to the poor when the revolution threat arises. The continuation value of the elite in state (μ^h, E) is:

$$W_2^r(\theta) = (1-\theta)H(\theta)/(1-\lambda) + \eta^r(\theta) + \beta\left[(1-q)V^r(\mu^l, E, \theta) + qW_1^r(\theta)\right] \qquad (19)$$

Solving (18) and (19) with $W^r(\theta) = W_2^r(\theta)$, we obtain

$$V_2^r(\mu^l, E, \theta) = \frac{(1-\theta)H(\theta)/(1-\lambda) + \beta q \eta^r(\theta)}{1-\beta} \qquad (20)$$

Whether the elite will choose asset redistribution is determined simply by comparing $V_1^r(\mu^l, E, \theta_0)$ and $V_2^r(\mu^l, E, \theta^R)$. If $V_1^r(\mu^l, E, \theta_0) < V_2^r(\mu^l, E, \theta^R)$, then the elite prefer to prevent democratization and will choose the minimum redistribution sufficient to prevent democratization, that is $\theta = \theta^R$. Otherwise, they will choose not to redistribute, so $\theta = \theta_0$.

The main implication is that the elite may choose to redistribute assets in order to prevent democratization.[28] Two cases appear to fit this implication nicely. In a 1949 reform, South Korea redistributed 50% of the agricultural land in Korea. Haggard (1990, p. 55) argues that the reforms were aimed at defusing rural insurrections and counteracting the destabilizing spillovers from land reform in North Korea. Taiwanese land reforms

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[27]Formally, $\frac{-H(\theta_0)+(1-\theta_0)H'(\theta_0)}{(1-\beta)(1-\lambda)} + \frac{\beta q \delta^{r\prime}(\theta_0)}{(1-\beta)(1-\beta(1-q))} \leq 0$.

[28]This result is related to previous analyses of land reform, such as Grossman (1993) and Horowitz (1993), which argue land reform can prevent revolution, though these papers do not compare asset and fiscal redistribution. Also in contrast to these papers, asset redistribution in our economy may prevent not only a revolution but also democratization.

of 1949-1953 that redistributed 24.6% of the land (Ho, 1978, p. 163) also appear to have been an attempt to defuse rural protest (see Amsden, 1985). In the words of Ch'en Ch'eng, the governor of Taiwan at the time of the reforms, "...the situation on the Chinese mainland was becoming critical and the villages on the island were showing marked signs of unrest and instability. It was feared that the Communists might take advantage of the rapidly deteriorating situation" (quoted in Haggard, 1990, p. 82). Interestingly, until very recently both South Korea and Taiwan remained relatively nondemocratic, especially compared to other countries with similar per capita income levels.

It can also be observed that asset redistribution as a method of preventing democratization is more likely to emerge when $\delta^r(\theta)$, the transfers away from the rich in a democracy, are larger. This result may help explain why asset redistribution emerged in South Korea and Taiwan, where the threat of communism made social unrest very costly to the elite, but not in the Philippines, where the threat was less serious.

Finally, although we have modeled assets redistributed by the elite as equally divided among all the poor, a more appealing interpretation may be a strategy of co-opting, whereby the elite redistribute assets selectively to groups among the poor who are important for the threat of revolution and who can be persuaded to switch sides with such transfers. This is equivalent to our formulation, but this interpretation may fit the example of Mexico in the 1930s better, where small groups of peasants that supported the ruling party were given land.

5   Targeted Transfers and Political Instability

Our analysis so far has assumed that transfers are not targeted to a particular group. This assumption is clearly unrealistic in many settings. In practice, transfers are often means-tested and taxes are non-linear. Perhaps more importantly, groups with diverse political interests are often geographically or ethnically segmented, making transfers to only one group quite easy. It is straightforward to extend our analysis to allow for this possibility. In particular, suppose that when group i is in power, it can allocate a fraction α^i of all tax revenue to itself (where $\alpha^p \geq \lambda$ and $\alpha^r \geq 1 - \lambda$ are parameters taken as given). This changes the equations in Section 2 in an obvious manner and also raises the possibility that even the rich may choose a positive level of taxation when in power in order to tax the poor and transfer some of the resources to themselves.

The key equations from Section 2 are modified as follows. The poor will now set a

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tax rate τ^m given by

$$C'(\tau^m) = \frac{\alpha^p - \theta}{\lambda}$$

when they are not constrained by the threat of a coup, and the rich will set a tax rate, τ^{nd}, satisfying

$$C'(\tau^{nd}) = \frac{\alpha^r - (1 - \theta)}{1 - \lambda}$$

when they are not constrained by the threat of revolution (and if $\alpha^r < 1 - \theta$, $\tau^{nd} = 0$).

When the state is (φ^h, D), the returns to poor and rich agents continue to be given by equation (2) in Section 2, with the only difference that now, $\delta^p(\theta) = \frac{\alpha^p}{\lambda}T^m - \tau^m h^p$, and $\delta^r(\theta) = \frac{1-\alpha^p}{1-\lambda}T^m - \tau^m h^r$.

In the state, (φ^l, D), the poor may once again change their redistributive strategy in order to prevent a coup. With targeted transfers, however, they can do better than setting $\tau^d = 0$: they can tax all income at the rate τ^{nd} and target a fraction α^r of the redistribution to the rich (exactly as the rich will do when they have power). Therefore, the maximum transfer that the poor can make to the rich is $\chi^r(\theta) = \frac{\alpha^r}{1-\lambda}T^{nd} - \tau^{nd}h^r \geq 0$ (if $\chi^r(\theta)$ were negative, $\tau = 0$ would be better).

The value functions in the nondemocratic regime will also change because in the state (μ^l, E) the rich will now tax at the rate τ^{nd} and redistribute a fraction α^r of the revenues to themselves. Hence:

$$V^i(\mu^l, E) = h^i + \chi^i(\theta) + \beta\left[(1 - q)V^i(\mu^l, E) + qV^i(\mu^h, E)\right] \qquad (21)$$

where $\chi^r(\theta) = \frac{\alpha^r}{1-\lambda}T^{nd} - \tau^{nd}h^r$ is as defined above, and $\chi^p(\theta) = \frac{1-\alpha^r}{\lambda}T^{nd} - \tau^{nd}h^p$. The coup constraint is still given by equation (6), and the critical value for the cost of a coup is now found to be

$$\overrightarrow{\varphi}(\theta, q, s) = \frac{\beta(1 - s - q)(\chi^r(\theta) - \delta^r(\theta))}{1 - \beta(1 - q)} \qquad (22)$$

Expression (22) differs from (8) because it has the additional term $\chi^r \geq 0$ in the numerator, and also because with targeted transfers, the cost of democracy to the rich, $-\delta^r$, is higher. As a result, $\overrightarrow{\varphi}(\theta, q, s)$ is greater than $\overline{\varphi}(\theta, q, s)$. More generally, both an increase in α^p and in α^r raise $\overrightarrow{\varphi}(\theta, q, s)$, making coups more likely, because they raise the stakes (α^p raises $-\delta^r$ and α^r raises χ^r). With targeted transfers, controlling the power to tax is more valuable; the rich are forced to make greater net transfers to the poor in a democracy and are able to receive net transfers in a nondemocratic regime. Therefore, the rich are willing to pay a greater cost to regain power. This result also puts one of our basic results from Section 2 into perspective; greater inequality increases political

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instability because it increases the stakes in the political game, giving greater incentives to each group to fight to regain power (a point also emphasized by Madison, 1788).

A similar argument implies that the critical value for μ^h, $\overrightarrow{\mu}(\theta, q)$, is now lower (i.e., less than $\overline{\mu}(\theta, q)$ as given by (11) in Section 2). So, when the government can direct transfers, political power has more economic value, and oscillations between different regimes are more likely. This implies that politics will be more unstable in countries, such as many in Africa, where ethnic or geographic segregation of different groups makes targeted transfers possible.

This extension also emphasizes that our model can be applied to political conflict between any two groups, rather than only between the rich and the poor. For example, the two parties can be thought of as rural vs. urban interests in conflict over transfer of resources to urban areas, or two ethnic groups, with the one in power transferring resources from the other group, and the group out of power contesting political power.

6 Conclusions

In this paper, we have developed a simple theory of political transitions. Our theory emphasizes the role of the threat of revolution and social unrest in leading to democratization and the desire of the rich elite to limit redistribution in causing switches to nondemocratic regimes. Inequality emerges as a crucial determinant of political instability as it encourages the rich to contest power in democracies, and also often encourages social unrest in nondemocratic societies. Therefore, inequality is generally conducive to frequent regime changes. However, in very unequal nondemocratic societies, the rich may choose a repressive strategy in order to prevent democratization and revolution. In all cases, democracy is more likely to be consolidated if the level of inequality in the society is limited, and inequality is likely to lead to political instability, either in the form of frequent regime changes or repression of social unrest.

Inequality is also likely to lead to fiscal volatility, as the redistributive regime changes with the political system of the society. Nevertheless, inequality does not necessarily lead to more redistribution. Unequal societies switch between regimes and in nondemocratic regimes, there is no redistribution. Our theory suggests that asset redistributions may be used to stabilize both democratic and nondemocratic regimes, but the anticipation of a radical asset redistribution, such as a land reform, may destabilize an otherwise consolidated democracy because the elite may mount a coup specifically to avoid the reforms.

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