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DEMOCRACY AND INEQUALITY

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Abstract

This paper offers an analytical model that, departing from a set of simple yet reasonable assumptions about the preferences of social agents (individuals) and their alternative political strategies, establishes the conditions for stable democracies. These conditions are the existence of a certain degree of equality in economic and social conditions and the level of factor mobility. In uncovering the role that economic (and political) equality plays in the success of democracies, the paper accommodates the well-know correlation between development and democracy while at the same time providing for a richer explanation of it. I build the baseline model in two steps. First, I describe the distributional consequences of different political regimes employing a positive model of taxation. Second, I show that these different outcomes inform the strategies of the actors to determine the voting mechanism. I then explore several fundamental extensions of the model. I define the conditions under which trade openness leads to a democratic solution and examine the role that economic growth plays in the introduction of democracy -- the positive impact of growth is conditional on the presence of organizations that allow for credible commitments among the poor. I then explore the impact of proportional representation and federalism on democracy. The paper includes a test of the model employing a cross-section time-series data set that covers about 50 countries mostly in the period 1965-90 as well as longitudinal data for the last century and a half.

1. THE PROBLEM[*]

Arguably, the existence of a strong correlation between democracy and economic development stands out as the best established empirical generalization in comparative politics to date (Lipset 1959, Jackman 1973, Bollen 1979, Burkhart and Lewis-Beck 1994, Przeworski and Limongi 1997). Nonetheless, this finding is impaired by two key problems: first, the considerable theoretical underdevelopment of the causal mechanisms that lie behind this empirical association; and, second, a substantial selection bias in the sample under analysis.

The causal mechanisms linking economic development and the presence of a democratic regime are still today very thinly articulated – in the words of Rueschemeyer, Stephens and Stephens, they "remain, in effect, in a black box" (1992: 29). In the quantitative research that has correlated democracy and development, the increasing likelihood that democracy will appear in developed countries has been alternatively attributed to the functional match between democracy and social modernization (Cutright 1963; indirectly, Lerner 1958), the effects that development have on the political culture and values of political agents (Lipset 1959:83, 86ff.; Bollen 1979; Inglehart 1997, chapter 6), the growth of a middle class acting as a strong moderating force, and, finally, the decline of an unequal distribution of resources with the passing away of agrarian economies (Lipset 1959: 83-84). Still, these explanations, which are

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generally cast in rather imprecise terms, have been posited as mere theoretical conjectures and have not been subject to any direct testing. In addition, they cannot account for any short-term dynamics in the processes of transition to (or away from) democracy – a failure likely to be due to how ill-defined their causal model is.

Parallel to the quantitative approach to the economic basis of democracy, a strand of qualitative historical research has similarly engaged in exploring the foundations of democratic regimes. Moore (1966) and, more recently, Luebbert (1991) and Rueschemeyer, Stephens and Stephens (1992) explain the occurrence of democratic regimes as a function of a particular pattern of social forces, the latter then varying for each author: democracy has been attributed to a particular balance between peasants and landlords, the size of the middle classes, or the strength of the working class. Although these authors probe more deeply into the causes of democracy than quantitatively-oriented researchers, they are clearly lacking in what, for the lack of a better word, we may term as theoretical microfoundations. That is, they sidestep the issue of explicitly modeling the preferences and incentives of actors engaged in struggles over the determination of the political regime. Accordingly, they offer another type of correlation analysis – although probably of a more sophisticated kind than the one advanced by quantitative research.

The studies on democracy and development suffer from a second, this time empirical, problem: their sample is affected by a notable selection bias. Their domain of analysis is restricted to contemporary cases (at most going back to late nineteenth century observations). Notice, however, that once this restriction is relaxed, the hypothesis that development matters for democracy cannot account for the presence of (at least partially) democratic episodes in societies that predate the phenomenon of economic modernization: some Greek city-states, the attempts made during the last period of the Roman Republic, several cities and territories (such as Swiss cantons) in the late Middle Ages, and the agrarian democracies of the early nineteenth century (the NE states in the US, Norway, Switzerland).

2. OUTLINE OF THE SOLUTION

The purpose of this paper is to offer an analytical model that, departing from a set of simple yet reasonable assumptions about the preferences of social agents (individuals) and their alternative political strategies, accommodates (part or most of) the insights of the existing empirical research on the relation between democracy and development. In providing microfoundations to this well-established fact, the paper uncovers the role that economic (and political) inequality, which is partly correlated with development, plays on the choice and stability of a particular political regime.

The solution is built upon the following propositions. First, democracy consists of a mechanism for the aggregation of all the individual preferences about the ideal distribution of (economic and political) assets among those individuals governed by this institutional mechanism. (By contrast, a restricted democracy or an authoritarian regime consists of an aggregation of the preferences of fewer persons than all the individuals bound by the decision derived from this mechanism). Second, even though the choice of a democratic (or non-democratic) government precedes the actual process of voting about the distribution of assets, it is informed by the outcomes each political agent anticipates will take place under each alternative political regime. Third, each political agent will accordingly support a constitutional arrangement that maximizes his assets resulting from the voting process – unless the costs of supporting that system of government outmatch his expected benefits. Fourth, as a result of the calculation of actors, and depending on their position and resources, it is possible to predict under what conditions either a democratic or an authoritarian regime will prevail. Thus, I show that democracy becomes more likely as the distribution of political and economic assets (in the initial, pre-constitutional stage of the game) is more balanced or equal – and, this is, in turn, partially related to the process of development. Moreover, it is also possible to observe how, as development takes place, the stakes of the political game decline (irrespective of the level of inequality in society) and the chances of democracy increase.

The paper is organized as follows. Section 3 presents the baseline model in two steps. It first describes the distributional consequences of different political regimes. It does so employing the well-known positive theory of taxation developed, among others, by Meltzer and Richards (1981). It then examines how these different outcomes inform the strategies of different actors toward the choice of the voting mechanism itself and it solves, for different levels of inequality and different mixes of assets in the economy, the different political equilibria that will occur. Sections 4 to 6 explore some fundamental extensions of the model. More specifically, they consider how changing trade patterns, the rate of economic growth, and the existence of organizations that credibly commit to restrain the behavior of certain sets of voters in a democratic system affect the likelihood of having a democratic regime. Finally, section 7 explores the empirical validity of the model using both econometric evidence for the 1950-90 period as well as historical data for previous time periods.

3. MODEL

3.1. The Initial Distribution of Assets and the Demands for Redistribution

To examine how a political regime is chosen, consider first an economy composed of n individuals. For each individual i, $\{i=1,...,n\}$, the income is $y_i = y_i\ (l,\ k,\ t)$, where l is the labor endowment, k is the capital endowment and t is the tax rate. Each individual has one unit of labor, l_i=1. By contrast, capital (at this point broadly understood as both physical and human capital) varies across individuals, k_i ? 0. The capital endowment, k, positively determines individual income, ?y_i/?k_i > 0. As a result of different capital endowments across individuals, the overall income distribution will be unequal and skewed to the top -- the median income (y_m) will be lower than the average income (y_a).

The tax rate affects income negatively, ?y_i/?t < 0. As the tax rate increases, devoting time to leisure rather than work as well as directly consuming the accumulated capital (rather than directing it to productive activities) becomes more attractive. As a result, for a certain level of the tax rate, total tax rate revenue will decline.

The state taxes economic agents with a linear tax t on their income y_i, and then distributes the resulting revenues equally among all individuals, so that $t\,y_a$ is given to each i, where y_a is the average income or

.

The public budget is always balanced, that is, the expenditure on transfers equals total revenue:

(1)

The utility of each agent i depends on his initial income (affected by the individual's capital endowment) and the net transfer received from the government (that is, the lump-sum received from the state minus the portion of the taxed income directed to finance the redistributive program):

(2)

The net transfer received from the government will depend on the income of the individual in relation to the average income. Whenever i's income is lower than the average income, i receives a positive transfer from the government; otherwise, i suffers a net loss.

From the structure of i's utility function, the policy-maker derives the tax rate that maximizes i's welfare. If taxes are set through simple majority rule and preferences are related to pre-tax individual income (and hence single-peaked), the tax rate will correspond to the ideal tax rate of the median voter, t_m, which will be the tax rate that maximizes the well-being of the last voter needed to form a majority.

Maximizing (2) with respect to t, subject to the budget constraint, gives us the ideal tax rate of the median voter, t_m:

(3)

Two key results follow from (3). On the one hand, given an unequal and skewed income distribution (an outcome, again, of a varying k across individuals), the median voter will always vote for (or will be promised by politicians) a tax to redistribute income from the high-income voters to himself, so $t_m > 0$. More importantly, the level of the tax rate will depend on the difference between the average income and the income of the median voter. The larger the difference, that is, the more unequal the overall income distribution, the more interested in redistribution the median voter will become and the higher the tax rate will be.

On the other hand, the extent to which equalization takes place will be constrained by the sensitivity of incomes to the tax rate. Since a tax rate of 1 would remove all incentives to work and invest, and therefore would reduce output to 0, the tax rate that the median voter approves always stops short of fully equalizing incomes across voters. More generally, the median voter will increase the tax rate up to the point at which the available amount of transfers declines. This point will depend on the sensitivity of taxpayers to taxes. As the sensitivity increases, that is, as the fall in incomes due to a tax increase accelerates, tax rates will be set at lower levels. Critically for the discussion that follows about the likelihood of a democratic regime, the elasticity of income to taxes depends on the type of capital in the economy. Capital assets can be thought of as differing in their asset specificity. If rich individuals (those richer than the median voter) derive their income from highly specific or highly immobile types of capital, such as land or natural resources, which are highly inelastic to tax increases, fiscal pressure can reach quasi-expropriatory proportions. By contrast, if most capital is mobile, that is, if it can exit without costs, taxes will be constrained to be low.

3.2. Equality of Conditions and the Choice of Political Regime

So far, I have laid out a stylized model to highlight the distributional consequences of any political regime. Under a system characterized by universal suffrage and full participation, the tax covaries with the dispersion of income in each society (constrained by the tax elasticity of income). But, naturally, as participation goes down among the least well-off voters, due to either a restrictive franchise or differential turnout rates among voters, the tax rate declines. Anticipating the consequences of different constitutional regimes on their net income, political agents will favor different political regimes.

I explore now how different underlying economic structures lead to different constitutional choices. In this subsection I discuss the role of income inequality. Simply put, a democratic outcome becomes possible when the inequality of conditions among individuals narrows to the point that the imposition of an authoritarian regime ceases to be attractive to any party. In the following subsection, I consider the second critical result of the model. There I show that democracy becomes more likely as the proportion of immobile capital declines in any given economy.

Consider the following model. Assume that the economy described above consists now of only three types of individuals, poor, middle and rich. Each individual that is 'poor' can be denoted as p and has an income y_p. This income, y_p, is the same for all $i=p$. The sum of all poor individuals can be denoted as P and the sum of the income held by them is Y_P. In turn, each agent pertaining to the middle type or class can be denoted as q and has an income y_q. The sum of all middle class individuals can be denoted as Q and the sum of the income they hold is Y_Q. Finally, each rich person can be denoted as r and has an income y_r. The sum of all rich individuals is R and the sum of income they hold is Y_R. Any poor individual has an income lower than any rich person, and a middle class agent has an income in between the other two types, so that, $y_p < y_q < y_r$.

Before any voting takes place, the individuals in this setting have to decide who will vote.[1] Three regimes are possible: an authoritarian regime, where only the rich vote; a limited democracy, in which both the rich and the middle class vote; and a full democracy or universal suffrage regime, where everybody is entitled to vote.[2] The preference ordering of the agents is determined by the returns each one anticipates under each regime. The 'poor' are always favorable to universal suffrage. Since $y_p < y_a$, fully democratic elections translate into a positive transfer to P. The rich are, instead, opposed to any extension of the franchise since $y_a < y_r$. They should rationally attempt to restrict the franchise to themselves. Middle class individuals prefer, in turn, a restrictive democracy (in which only R and Q vote) to both a regime controlled by R and a universal suffrage system. Whether they prefer a universal democracy to an authoritarian system (with only R voting in the latter) will depend on whether their income is above y_a (a case in which they would incur a negative transfer under full democracy) or below y_a (in which full democracy plays to their advantage).

Each class incurs costs in advancing its most preferred solution. Generally speaking, denote the individual cost for each rich person of excluding the other agents as w_r and the total cost (for all the rich or upper class) as W_R. Denote W_Q as the cost the middle class incurs to impose a restrictive democracy and W_P as the cost the poor bear to secure a universal-suffrage regime. In those circumstances in which two (contiguous) classes may find to their advantage to oppose the third class, the former two share the cost of repression: this can be denoted as W^* (with $W^* < W$ always for each separate class). Finally, under certain conditions (shown below), one class may abstain in the determination of the regime, leaving the other two fighting each other: in these cases, denote the cost to R fighting Q as W^Q_R; the cost

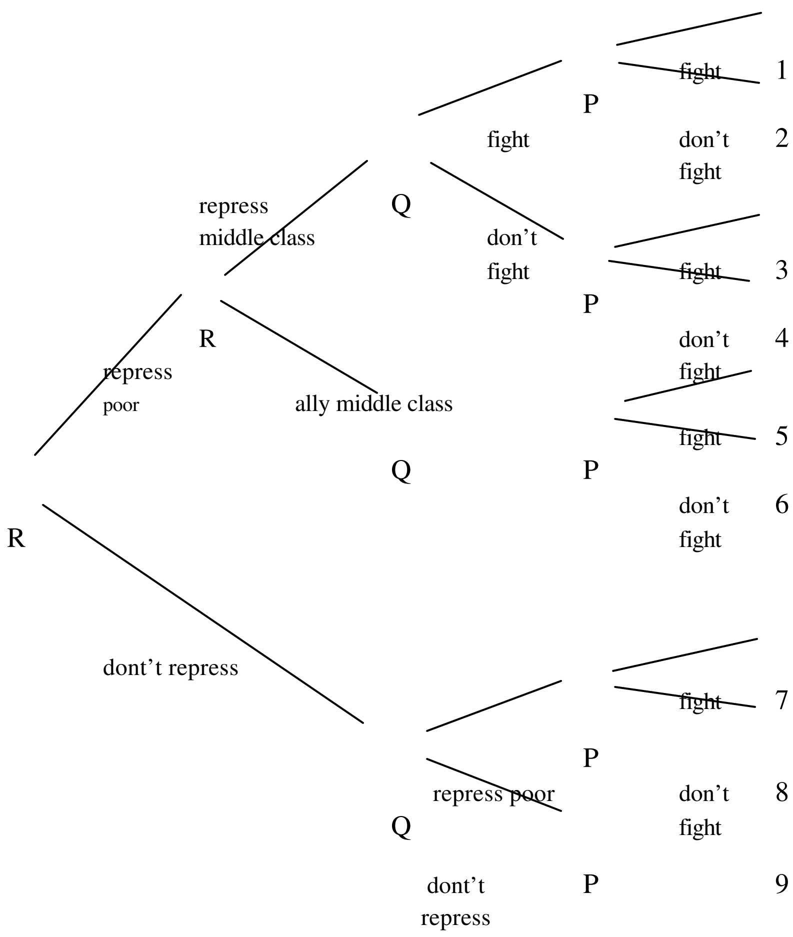
[1] By assumption, they have no option to exit or secede.

[2] The model excludes, at this point, expropriation of the rich by Q and/or P as well as expropriation of both the rich and the middle class by P given the assumption about the sensitivity of income to taxes. If the economy is such that (i) incomes are not sensitive to taxes, (ii) production can be arranged in a way that income (and effort) is (are) not sensitive to taxes, (iii) the poor disregard completely the effects of taxes, expropriation – communism – can occur.

to the middle class of fighting R alone as $W^R{}_Q$; the cost to the middle class of figthing P alone as $W^P{}_Q$; and the cost to the poor of fighting the middle class alone as $W^Q{}_P$.

To examine the set of possible outcomes and the conditions underlying them, consider the following game. Nature determines the number of poor, middle and rich as well as their respective income level -- that is, P, Q, H, Y_P, Y_Q and Y_R. Each agent (or class) decides sequentially as follows. First, the rich must decide whether they repress the other agents or not. Should they decide to go for a repressive strategy, they must in turn consider whether to repress both the middle class and the poor (to sustain a fully authoritarian regime in which only R decides) or to ally the middle class against the poor (therefore introducing a limited democracy of R and Q). After the rich move, the middle class responds. If R decides to repress Q, Q may either fight R or acquiesce to the authoritarian regime. If R decides to coopt Q, the middle class simply joins R -- since, as pointed above, a restrictive democracy is strictly preferred by Q to both an authoritarian regime and universal suffrage. If the rich decide to repress no one, Q may either repress P or not. The last move corresponds to the poor. If neither R nor Q repress, a system of universal suffrage is peacefully established. In all other circumstances, that is,

Figure 1. Outcomes and actors' payoffs.



	Payoff of R	Payoff of Q	Payoff of P
1	$a(Y_R-W_R)+(1-a)(Y_R-T-W_R)$	$a(Y_Q-W^{*}_{Q})+(1-a)(Y_Q+T-W^{*}_{Q})$	$a(Y_P-W^{*}_{P})+(1-a)(Y_P+T-W^{*}_{P})$
2	$\text{ß}(Y_R-W^{Q}_{R})+(1-\text{ß})(Y_R-T^{*}-W^{Q}_{R})$	$\text{ß}(Y_Q-W^{R}_{Q})+(1-\text{ß})(Y_Q+T^{*}-W^{R}_{Q})$	Y_P
3	$?(Y_R-W_R)+(1-?)(Y_R-T-W_R)$	$?(Y_Q)+(1-?)(Y_Q+T)$	$?(Y_P-W^{R}_{P})+(1-?)(Y_P+T-W^{R}_{P})$
4	Y_R-W_R	Y_Q	Y_P
5	$d(Y_R-T^{*}-W^{*}_{R})+(1-d)(Y_R-T-W^{*}_{R})$	$d(Y_Q+T^{*}-W^{*}_{Q})+(1-d)(Y_Q+T-W^{*}_{Q})$	$d(Y_P-W_P)+(1-d)(Y_P+T-W_P)$
6	Y_R-T^{*}	Y_Q+T^{*}	Y_P
7	$e(Y_R-T^{*})+(1-e)(Y_R-T)$	$e(Y_Q+T^{*}-W^{P}_{Q})+(1-e)(Y_Q+T-W^{P}_{Q})$	$e(Y_P-W^{Q}_{P})+(1-e)(Y_P+T-W^{Q}_{P})$
8	Y_R-T^{*}	$Y_Q+T^{*}-W^{P}_{Q}$	Y_P
9	Y_R-T	Y_Q+T	Y_P+T

whenever at least one class decides to repress the poor, P must decide whether to rebel or to acquiesce. Depending on the previous moves of R and Q, the pattern of alliances will be different for P – alone against the other two classes, allied with the middle class against the rich, just fighting the rich (with the middle class taking a passive position), or just fighting the middle class (with the rich abstaining).

Figure 1 summarizes the game and the payoffs of each class for each alternative scenario. To understand the notation, consider three cases (out of the nine outcomes it describes). If both the rich and the middle class decide to accept fully democratic elections, elections occur, a tax is levied from all and then redistributed in equal parts (outcome 9 in Figure 1). As a result, each rich individual ends with his income minus the net transfer, y_r - t, or Y_R - *?* for the whole class of rich. (For the sake of simplicity in notation, T represents here the net transfer). Each poor person gets the net transfer so that her disposable income is y_p + t (and Y_P + *?* for the whole class of poor). The middle class gets as well a net transfer $Y_Q \pm$ *?* (whether it is positive or negative will depend on Q's income relative to the average income).

If the rich class decides to maintain an authoritarian regime and both the poor and the middle class acquiesce to the action of the rich, outcome 4 takes place. The rich keep their income minus the fraction devoted to sustain the non-democratic regime $Y_R - W_R$ while the middle class and the poor keep their incomes Y_Q and Y_P respectively.

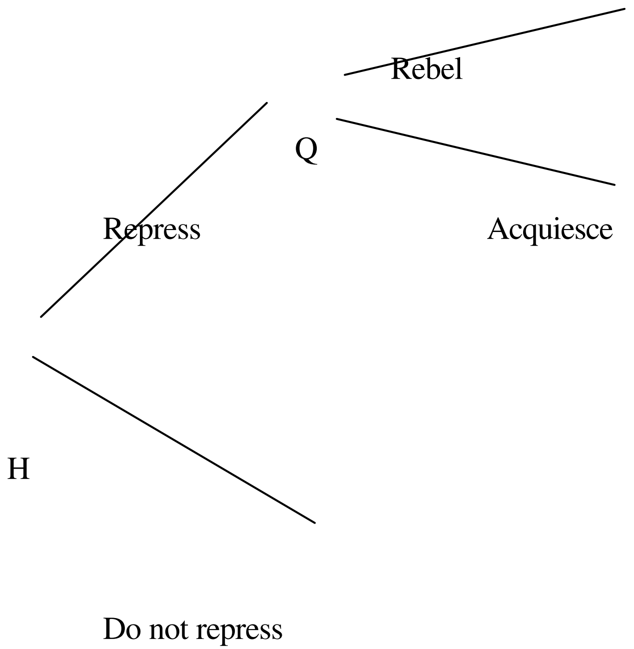
If the rich repress and one or both of the other parties rebel, the outcome will depend on the strength of the contending parties. Consider the case in which R is confronted by both Q and P (outcome 1 in Figure 1). Denote a as the proportion of political resources (physical and human resources to exercise repression or rebel) controlled by the rich -- that is, a = (resources$_R$ / (resources$_R$ + resources$_Q$ + resources$_P$)). In turn, $1-a$ represents the joint resources of the middle class and the poor. Then, the middle class will obtain its income minus the cost of war given a and its income plus the transfer minus the cost of war given $1-a$, that is, $a\ (Y_Q - W^*_Q) + (1 - a)\ (Y_Q +\ ?\ - W^*_Q)$, where W^*_Q denotes the cost of war for Q when it shares it with P. Similarly, the poor will obtain their income minus the cost of war times the rich's resources a and its income plus the transfer minus the cost of war times $1\text{-}a$ – that is, $a\ (Y_P - W^*_P) + (1 - a)\ (Y_P + \ ? - W^*_P)$.

(A similar notation is employed for the other possible scenarios. T^* represents the net transfer under a restrictive democracy. In turn, ß,?, d and e (which substitute a) represent the resources of each side depending on the pattern of alliances: β represents the resources of the rich relative to the middle class; ? denotes the resources of the rich against the poor; d represents the resources of both the middle class and the rich vis-a-vis the poor; and e stands for the resources of the middle class against the poor.)

Table 1. Alternative Actions and Outcomes with Two Actors.

		The Middle Class	
		Engage in war $(1 - \beta)?\ ^* > W^*_Q$	Acquiesce $W^*_Q > (1 - \beta)?\ ^*$
	Always Repress $?^* > \beta?\ ^* > W_R$	Rich: repress Middle: rebel Outcome: Varies as a function of each side's resources	Rich: repress Middle: acquiesce Outcome: Authoritarianism
The Rich Class	Respond conditional on poor's behavior $T^* > W^*_R > \beta?^*$	Rich: do not repress Middle: (threaten to) rebel Outcome: Limited democracy	Rich: repress Middle: acquiesce Outcome: Authoritarianism
	Always avoid repression $W^*_R > T^* > \beta?\ ^*$	Rich: Do not repress Middle: Do not rebel Outcome: Limited democracy	Rich: Do not repress Middle: Do not rebel Outcome: Limted democracy

Figure 2. Outcomes and actors' payoffs when poor never fight.



	Payoff of the rich (R)	Payoff of the middle (Q)
Repress, Rebel	$\beta\ (Y_R\ -\ W^Q{}_R) + (1\text{-}\beta)\ \ (Y_R - ?\ * \text{-}\ W^Q{}_R)$	$\beta\ (Y_Q\text{-}\ W^R{}_Q) + (1\text{-}\beta)\ \ (Y_Q\ +\ ?*\ -\ \ W^R{}_Q)$
Repress, Acquiesce	$Y_R\ -\ W^Q{}_R$	Y_Q
Do not repress	$Y_R\ -\ ?\ *$	$Y_Q\ +\ ?\ *$

Solving the model by backward induction, the reaction of the rich and the middle class vary according to which strategy the poor are anticipated to follow among the four alternative patterns of behavior: that they never rebel (whenever $(1\text{-}a)T < W^*_P$, that is, when even the shared cost of rebellion against R exceeds the probability of getting T); that they only rebel when the middle class rebels (whenever $(1\text{-}a)T > W^*_P$ and $(1\text{-}?)T < W^R_P$); that they rebel against R yet not against the joint alliance of Q and R (whenever $(1\text{-}a)T > W^*_P$ and $(1\text{-}?)T < W^R_P$ but $(1\text{-}d)T < W_R$); and that they always rebel (whenever $(1\text{-}d)T > W_R$). To understand the basic logic of the model, consider first the case in which the poor never rebel, and in which, therefore, the struggle is limited to R and Q. After discussing this case, I then report the results when all three actors may fight and draw general conclusions about how different distributions of endowments lead to different political regimes.

The poor never rebel. Figure 2 shows the set of possible strategies in this case (which correspond to cases 2, 4 and 6 in Figure 1). Table 1 then summarizes the conditions that lead to different strategies as well as their outcomes for this reduced game.

Consider first how the middle class will act. If the rich follow a repressive strategy, the middle class will rebel whenever its chance of establishing a democracy (and the corresponding transfer) outmatches the cost of war – that is, $(1\text{-}\beta)\ ?\ ^* > W^R_Q$.[3] Otherwise, it will acquiesce. If the rich do not repress, a restrictive democracy is established – Q's best possible outcome.

[3] The proof is simple. The middle class engages in war if $\beta\,(Y_Q - W^R_Q) + (1\text{-}\beta)\ (Y_Q + ?\ ^* - W^R_Q) > Y_Q$. Solving this expression leads to $(1\text{-}\beta)\ ?^* > W_Q$.

Given that the middle class' strategy is conditional on how the rich act, let us now explore how the rich behave. If the middle class never rebels, the rich will not repress if the cost of repression is higher than the total cost of transfer, that is, $W_R >\ ?*$. Limited democracy will then take place. Otherwise, that is, if $T > W^Q_R$, the rich will engage in the necessary repression to impose an authoritarian regime. If the middle class rebels, the rich will only repress if $ß?\ * > W^Q_R$.[4] If both parties engage in a war, the outcome depends on the balance of power of the two classes, that is, on the size of ß.

The solution of the game clarifies the parameters that are relevant to a democratic or an authoritarian regime:

(1) Whether the conflict happens and, if it does, who wins, depends on the resources (ß) available to each agent as well as the cost of war to repress the contending side.

(2) More interestingly, the game hinges on the distribution of assets across agents as well as the sensitivity of agents to taxes, since both affect the size of $T*$. As the level of transfers, $?*$, becomes larger, the possibility of conflict increases. More is at stake for both parties and a democratic arrangement will not be easily accepted by the upper class. Since the size of $T*$ is a function of the variance of the income distribution, inequality of conditions is negatively correlated with the probability of democratization and democratic survival. As the middle class grows richer and closer to the upper class, it will be in the interest of the latter to coopt the former.

(3) Finally, the probability of democratization is also affected by how sensitive agents are to taxes. As their sensitivity increases, the tax rate voters can impose declines. Accordingly, the probability of a democracy goes up since the cost of repression will be higher than the cost of paying the tax. Again, this insight is fully developed in subsection 3.2.

[4] Again, the proof is simple. The rich engage in war if $ß\ (Y_R - W^Q_R) + (1\text{-}ß)\ \ (Y_R - ?* - W^Q_R) > Y_R\text{-}T*$. Solving this expression leads to $ß?* > W^Q_R$. (Whenever this hold, T* ? W^Q_R holds.)

A game of three actors. Observe now the solution to a game that includes the possibility that the poor may fight. This is again the game as presented in Figure 1. Its backward-induction solution is summarized in Table 2.

Table 2. Alternative Actions and Outcomes with Three Actors

(A) If *P* never fights when *R* represses

		The Middle Class	
		Engage in war $(1 - \beta)? * > W^R_Q$	Acquiesce $W^R_Q > (1 - \beta)? *$
The Rich	$\beta T* > W*_R$	Rich: repress Middle: rebel Outcome depends on resources	Rich: repress Middle: acquiesce Outcome: Authoritarian
	$T* > W*_R > \beta T*$	Rich: do not repress Middle: rebel Outcome: Limited democracy	Rich: repress Middle: acquiesce Outcome: Authoritarian
	$W*_R > T* > \beta T*$	Rich: do not repress Middle: rebel Outcome: Limited democracy	Rich: do not repress Middle: acquiesce Outcome: Limited democracy

(B) If *P* fights only if *Q* responds fighting to *R*'s repression

		The Middle Class	
		Engage in war $(1 - a)?* > W*_Q$	Acquiesce $W*_Q > (1 - a)? *$
The Rich	$T* > W*_R$	--------	Rich: repress Middle: acquiesce Outcome: Authoritarian
	$W*_R > T*$	--------	Rich: do not repress Middle: acquiesce Outcome: Limited democracy
	$T* - (1 - a)\, T < W_R$	Rich: coopt middle class Outcome: Limited democracy	--------
	$T* - (1 - a)\, T > W_R$	Rich: fight middle and poor Middle and poor: respond Outcome: Authoritarian or Universal suffrage depending on resources	--------

(C) If P fights against R if Q abstains but not if R and Q repress

The Rich	$T* - (1 - ?)\, T > W_R$	Rich always fight the poor without offering an alliance to middle class Oucome: Authoritarian or full democracy depending on resources

$W_R > T^{*} - (1 - ?)\,T$ Rich always coopt middle class to establish restrictive democracy

(D) If P always fights (and therefore Q never fights when R represses)

The Rich	The Middle Class: Represses P when R doesn't $e(?^{*} - T) > W^{P}_{Q}$	The Middle Class: Does not repress P when R doesn't $W^{P}_{Q} > e(?^{*} - T)$
$(d\text{-}e)\,(T\text{-}T^{*}) > W^{*}_{R}$	Rich: coopt middle class Middle: ally rich Poor: rebel Outcome: Full or limited democracy depending on resources	Rich: coopt middle class Middle: ally rich Poor: rebel Outcome: Full or limited democracy depending on resources
$e\,(T\text{-}T^{*}) > W^{*}_{R} > (d\text{-}e)(T\text{-}T^{*})$	Rich: abstain Middle: repress Poor: rebel Outcome: Full or limited democracy depending on resources	Rich: coopt middle class Middle: ally rich Poor: rebel Outcome: Full or limited democracy depending on resources
$W^{*}_{R} > e\,(T\text{-}T^{*}) > (d\text{-}e)(T\text{-}T^{*})$	Rich: abstain Middle: repress Poor: rebel Outcome: Full or limited democracy depending on resources	Rich: abstain Middle: abstain Poor: do not rebel Outcome: Full democracy

I describe here the main results of the analysis. As discussed before, whenever the poor abstain from fighting, contestation takes place between the upper and middle classes. To summarize again the main findings of that game, as the middle class' resources grow, the chance for a limited democracy goes up. Likewise, as the income differences between the two classes diminish, democracy is less resisted by the rich.

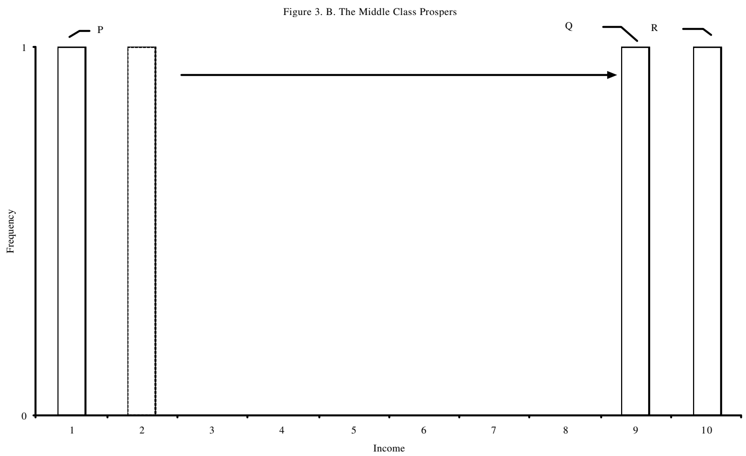
From authoritarianism to limited democracy: the role of the middle class. If the poor are anticipated to rebel, either jointly with the middle class or alone, the upper class has to consider now the whole set of political strategies: an authoritarian regime, coopting the middle class to oppose *P* or even accepting universal suffrage. Whether *R* will continue to impose an authoritarian regime depends on the resources of *P* and *Q*. But, more interestingly, it hinges on the distribution of assets among the classes -- and the tax consequences of that distribution.

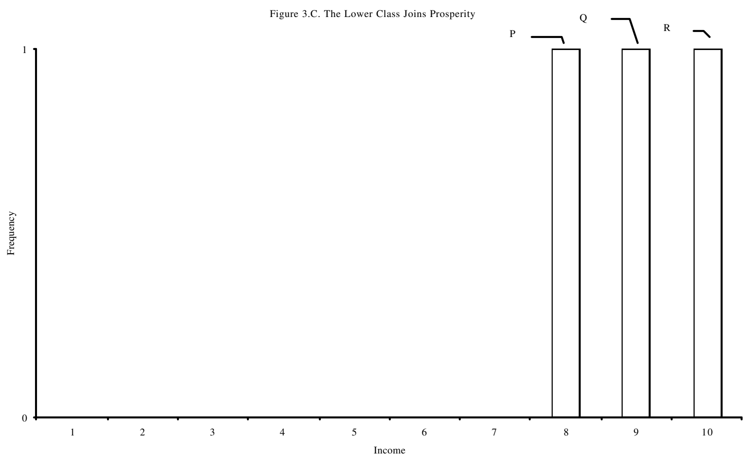
To understand how different distributions lead to different political outcomes, consider first the case in which *P* fights conditional on the decision of *Q* to fight or not (case B in table 2) and *Q* is indeed willing to rebel against *R*. In this case, *R* may either coopt *Q* (and in this instance *P* will acquiesce) or confront both *Q* and *P*. *R*'s choice will depend on its assessment of the difference between paying T^* (the transfer in a limited democracy) and a probability a of paying T (the transfer in a universal democracy) and then comparing this difference to the full cost of war W_R. Whenever $T^*- (1- a)\, T > W_R$, that is, whenever it is more costly to coopt the middle class than to confront it, the upper class will accordingly end up fighting both the poor and the middle class. Conversely, if $T^*- (1- a)\, T < W_R$, the rich will offer an alliance to the middle class.

The direction of the inequality in the expression (and hence *R*'s choice) will hinge on the distribution of assets in the economy. In a society in which the upper class is well ahead in assets relative to the other two classes, such as the one described in Figure 3.A, $T^*- (1- a)\, T > W_R$ will be likely to hold. Notice, however, that as the middle class becomes richer and more similar to the upper class (a scenario depicted in Figure 3.B) T^* will decline. Given that $T > T^*$ for the rich, the left-hand side of the expression will become negative and therefore the cost of war will grow larger than the difference between the two regimes. *R* will be well advised to switch to a strategy of cooptation of the middle class. In other words, the transition from an authoritarian regime to a system of limited democracy will take place as a middle class emerges as a separate sector, equal in wealth to the upper class. This process has a close resemblance to the political development of Europe in the course of the 19th century: as the bourgeoisie made its way into the economic and social scene, a system of limited democracy became predominant across that continent.

From limited democracy to universal suffrage. Notice also from the previous discussion that the middle class is not a 'natural' ally of the poor. In purely redistributive terms, a system of limited democracy is always a dominant strategy for the middle class. Accordingly, whenever the rich offer an alliance to the middle class to establish a restricted democracy, the latter always responds favorably.

Figure 3. Changing Income Distributions





The other side of this fact is that universal suffrage will only be introduced after the poor have amassed the resources to impose it -- directly through a civil war or by dissuading the other parties to abstain from repression. Full franchise will be established, in the first place, in those instances (explored above) in which *R* prefers fighting both subordinate classes (rather than coopting the middle class) and the confrontation ends with the defeat of the upper class.

More commonly, full democracy only takes place whenever the poor are willing to fight, that is, whenever $(1\text{-}d)T > W_R$. The chances of establishing a democracy continue to depend on the distribution of wealth. Whenever $W^P{}_Q < e(?^*\text{-}\ T)$, that is, whenever the cost of repression is lower than the difference between the transfer obtained in a limited regime and a universal democracy (remember that T*>T for the middle class always), the middle class represses the poor. (It does alone or jointly with the rich as a function of conditions spelled out in Table 2, section D.)

It is only whenever $W^P{}_Q > e(?^*\text{-}\ T)$ that the middle class may decide not to repress the poor -- it definitely does not when the rich do not participate in any repression. From the inequality, it is clear that democracy becomes more likely when the differences between *Q* and *P* decline in a way that reduces the gap between *T** and *T* to a minimum. The comparative costs of repression dissuade the middle class from imposing a restricted suffrage.[5] This process of income equalization, in which the poor catch up with *Q* and cease to be a threat, is described in Figure 3.C.

To sum up, the transition from an authoritarian regime (in the hands of the upper class) to universal democracy hinges on the distribution of resources. With just a minority in possession of most resources, a democratic outcome is implausible. As the distribution of economic assets changes, the

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[5] Naturally, as the poor become closer to the middle class in income per capita, it is also to the rich's advantage to abstain from any repressive strategy (since $W^*_R > \mathrm{e}\,(T\text{-}T^*) > (d\text{-}e)\,(T\text{-}T^*)$ now).

regime gradually opens up to new voters. Universal suffrage is only feasible after a considerable amount of equalization has already taken place.

3. 3. Capital Mobility and the Choice of Political Regime

As already discussed in subsection 3.1, besides the level of inequality, the tax rate is critically affected by the sensitivity of income to increasing fiscal pressure. As the tax elasticity of income goes up, the equilibrium tax rate declines. This has immediate political consequences. Political conflict over taxation will drop and the likelihood of democracy will rise. In short, the mobility of capital is positively correlated with the success of democracy.

To see that this is indeed the case, remember that in the economy modeled above, higher levels of capital accumulation translate into higher income levels. Thus, the tax approved by voters can be thought of as a tax levied on capitalists and then transferred to labor (that is, those agents with a lower capital/labor ratio). As the tax is increased, capitalists decide to divert their resources away from investment. The pace at which they will depends on how mobile capital is – that is, on the cost of shifting it from its present use to an alternative one. The mobility (or asset specificity) of capital has then very different effects on the incentives of actors and on the final political outcome.

At low levels of mobility, which occurs in cases of land holding (in plantations or mines) or high asset specificity, capitalists have a direct and strong interest in tutoring the state. The reason is simple. Since capital is hardly sensitive to taxes, voters have a high incentive to impose heavy taxes (that is, t will approximate 1). As a result, capital will invest considerable effort in blocking democracy -- since the costs of not doing so are so high. In other words, the lack of alternative uses to the holders of capital make them particularly interested in shaping policy. It is better for capital to incur a certain cost W to block democracy than suffer quasi-confiscatory taxes.

As capital mobility increases, capital becomes automatically more sensitive to taxes. Accordingly, democracy has a better chance of succeeding. Since voters know that an excessively higher tax would encourage capital to flee, they agree on a lower tax rate than the tax approved under conditions of low capital mobility. With t declining, at a certain point, $W > t$, that is, the cost for capital of capturing the state becomes larger than the fraction paid in taxes, and any resistance from capital to democracy disappears.

The process of economic development is, to a considerable extent, the story of a shift from highly immobile fixed assets to progressively more mobile capital, that is, from societies that rely on the exploitation of mines and agricultural land to economies based on manufacturing industries and human-capital-intensive businesses. It is not strange that the academic literature has found democracy to be well correlated with the level of development in the last decades. Development, or higher levels of per capita income, simply proxies for an expansion of economic agents holding more tax-elastic (i.e. less taxable) types of capital -- a phenomenon that in turn eases the intensity of the fiscal conflict between laborers and owners of capital.

The positive impact of capital mobility on democracy can, in fact, be used to account for the emergence of democratic or quasi-democratic structures in earlier historical periods. The dominance of semi-democratic mechanisms in commercial Athens and of a harsh tyrannical system in Sparta in the 5th century B.C. covary with the type of capital assets in each society. In the face of growing and generalized pressures from absolutist kings to collect revenue, proto-parliamentarian regimes endured in the 16th and 17th centuries precisely in those European areas that had high concentrations of commercial capitalists -- along the Flanders-North Italy axis (Tilly 1990). Similarly, high levels of mobility may well account for the predominance of democratic arrangements in 19th-century frontier societies: the abundance of available capital made it cheaper for pioneers to move to new lands than to fight over already colonized areas.[6] Finally, it may not be purely coincidental that the latest wave of democratization has come hand in hand with the intensification of capital mobility across the globe. As taxable assets have

[6] I am grateful to Erik Gartzke for suggesting this point to me.

become more mobile, the need to impose repressive regimes has declined across the board. Notice also that the model explains why growing capital mobility, democratization and some growing dissatisfaction with democracy are taking place at the same time. The reason is straightforward. Capital mobility enhances the likelihood of a democratic outcome yet at the same time lowers taxes to what many voters may consider unsatisfactory levels.

Four additional empirical insights can be gained as well from the relationship between capital mobility, tax pressure and the choice of political regime I just spelled out.

Type of Dictatorship (and the Corruption of Left-Wing Dictatorships). To simplify the discussion I have assumed so far that, in places with highly immobile capital, capitalists will always control the state. To be precise, the model only predicts that authoritarianism will prevail in countries with highly immobile resources. It does not necessarily forecast, however, who will govern or, to use standard terms, which will be the ideological sign of the regime. Both a right-wing tyranny (in which a traditional elite owns the resources and crushes the masses) and a left-wing dictatorship (in which the assets have been completely nationalized by the majority) may prevail. As shown before, the outcome will depend on the resources available to each party. But it also depends on a second condition -- how fixed assets are exploited.

There is a critical issue to be explored here. Consider an economy with a highly immobile capital controlled by a minority. If, as shown before, equality of conditions is central to democracy, can the majority expropriate the fixed assets, divide them in roughly similar shares, and thus establish the underlying social conditions that would lead to a stable democratic regime? In other words, can left-wing revolutions in countries exporting primary commodities result in constitutional regimes? The answer hinges on the extent to which the exploitation of those fixed assets exhibit economies of scale. If there are no economies of scale, the fixed assets that constitute the core of the economy can be certainly divided equally across the population without any efficiency losses. Thus, it would be possible for a revolutionary agent or party, or even for an international board, to stage a coup and engineer a transition to an egalitarian and thus democratic arrangement.

Yet, if the exploitation of the fixed asset exhibits substantial economies of scale, there will be a strong tendency to avoid any egalitarian distribution of capital. To maximize output, the new political authority would rather push for the complete centralization of the ownership and management of the asset (like oil). If that is the case, the root of the problem would persist. Over time, a split in society between the political elite, who manages and eventually secures de facto ownership of the assets, and the rest of the population will be likely to reappear. This division will reproduce the old, pre-revolutionary economy where capital owners were pitted against the laborers. The only difference will be that the role of 'new capitalists' will be played by the revolutionary elite. The very tensions that led to the expropriation of the old owners will emerge again and violence will flare up inevitably. To sum up, in economies with fixed assets and economies of scale, 'left-wing' dictatorship go through a natural process of corruption until they become 'right-wing' regimes of the old sort again. Recurrent cycles marked by sudden revolutions and authoritarian governments characterize this type of countries -- the common pattern of most subSaharan African states and many Middle Eastern countries.

Democracy is close to impossible in those cases. The solution to this type of political system may lie in fostering the emigration of the population to other countries and putting the management of those assets (oil, mines) under an international board controlled by democratic regimes.

Wealthy Dictatorships. As stressed above, high per capita income is related to democracy only to the extent that the former originates in relatively mobile (and productive) kinds of capital, such as money or most types of human capital. For this very reason, the model predicts that high-income countries that base their prosperity on fixed natural resources, such as oil, should remain authoritarian, in spite of their wealth. This insight actually solves one of the most troubling paradoxes of any recent empirical analysis on the relationship between development and democracy: although the probability of a democratic regime has been found to increase with per capita income, the literature has also detected a set of extremely wealthy yet authoritarian regimes -- mainly oil-exporting countries. For the period 1950-90, countries with a per capita income over $8,000 and exporting no oil had a probability of at least 0.8 of being a democracy. By contrast, high per capita income countries whose export revenues from oil amounted to 50 per cent or more of total trade revenues had a probability of 0.3 of being a democracy in the same period. Przeworski and Limongi (1997) attempt to remedy this anomaly in the modernization theory of democracy by differentiating between exogenous and endogenous theories of democratization.[7] A simpler and more robust solution is to acknowledge that wealthy dictatorships are the direct consequence of a strong concentration of fixed natural resources.[8] Given the model of this paper, it is not surprising that the owners of the latter systematically resort to a dictatorship to avoid being expropriated.

Capital Mobility and Level of Violence. Since the predominance of fixed natural assets substantially increases the stakes of the political game, generalized violence, either through state repression, riots or open civil wars, should be more common in areas with high levels of immobile capital.

Cross-Sectoral Alliances. Variation in the specificity of different types of capital further enriches our understanding of the choice of political regimes in the following way. In the discussion about how capital mobility may enhance the likelihood of a democratic outcome, I simply assumed that the type of capital (in terms of its specificity) varied across countries -- with some nations rich in oil or land and others abundant in human capital. But, naturally, one can think of different types of capital coexisting within any single territory. This may in turn lead to a definite change in the type of game described in

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[7] As a matter of fact, they also decide to exclude oil-exporters from their sample. I thank Lisa Wedeen for pointing this out to me.

[8] The result is more robust for the following reason. In Przeworski and Limongi (1997), the rate at which democracies break down declines with income -- in line with modernization theory. But the rate at which authoritarian regimes break down is not randomly distributed (the result one should expect for the exogenous theory of democratization to hold), but rather grows with income till middle levels of income and then falls precipitously. This specific pattern of authoritarian breakdown requires a certain causality story -- the closest seems to be the changing structure of types of capital.

subsection 3.2 (with the lower, middle and rich classes strategizing about the choice of regime) and in which everything was basically determined by the per capita income of each class.

Whenever capital mobility is not positively correlated with income, the political interests and strategies of each class of capitalists do not correspond with the predictions of subsection 3.2. Consider, for example, an economy with three types of actors: L, that is, a working class that bases its income on labor; K_T, a class of well-to-do farmers; and K_B representing an extremely wealthy commercial bourgeoisie. If either there are no differences in the level of mobility between land and commercial capital or the level of mobility grows with income, alliances will be struck along incomes lines: L will oppose K_B while K_T will play the game as a pivotal actor (either repressed or coopted by the commercial bourgeoisie). This prediction collapses if commercial capital is much more sensitive to taxes than land. In spite of generating most of the wealth, commercial capital should expect a much lower tax rate than K_T under a democracy. This in turn should lead to a very likely alliance between labor and the bourgeoisie against the farming class -- in other words, to the formation of a rural-urban cleavage of the kind that emerged in many European countries in the 19^{th} century. In short, the model of the paper allows us to theoretically accommodate the formation of cross-class coalitions among social segments that had opposing interests in pure income terms.

4. FIRST EXTENSION. TRADE AND DEMOCRACY

Using a rather simple set of assumptions, the previous section mainly showed that, first, as equality increases, the impact of redistribution becomes milder relative to the costs of a repressive strategy and democracy becomes more likely. It then showed how factor mobility, more particularly capital mobility, increases the chances of democratization.

In this section and the following two, I consider several important extensions to the model in section 3. First, I consider how trade and democracy are related. Second, I introduce the concept of growth or dynamic considerations into the model. I found economic growth to be a necessary but not sufficient condition to generate a democratic outcome: whether it does is conditional on certain societal structures being in place. Finally, I turn to discuss the role that institutions, in the sense of constitutional arrangements, may play in ensuring the success of democracy.

Consider now the ways in which the international economy, in its dimension of trade openness, affects the choice of different political regimes. Trade openness can be predicted to favor a democratic outcome conditional on what factors or sectors are abundant in a given economy.

Predictions over the impact of trade openness are extremely mixed in the literature. On the one hand, trade liberalization has been seen as generally incompatible because it imposes considerable losses on key economic sectors. Trade openness has been recently pursued either by authoritarian regimes or by policymakers that are sufficiently isolated from public opinion (Fernandez and Rodrik 1991; Haggard 1990; Stokes 1999). Yet, on the other hand, the fact that trade and democratic regimes came hand in hand in such disparate periods as 19th-century England or Ancient Greece has not gone unnoticed by some authors (Rogowski 1989).

In the context of the model employed in this paper, it is easy to show that trade openness affects the choice of a political regime conditional on the distribution of factors in the economy. To see the varying effects of trade, assume two types of countries, A and B. In both countries, there are two types of agents: skilled workers, who used a relatively well-developed technology, and therefore earn high wages; and unskilled workers, who operate a bad technology, and receive low wages. Countries vary, however, in the distribution of types. Whereas in country A skilled workers are the scarce factor (and unskilled workers are the abundant factor), in country B skilled workers constitute the abundant factor. In country A, unskilled workers, who are the abundant factor, clearly benefit from an expansion in trade. As the demand for them goes up, their wages increase and wage compression takes place. With inequality declining, previous redistributive tensions ease and the probability of democracy goes up. In country B, by contrast, any decline in tariffs hurts the poor class. As the demand for skilled workers, who are the abundant factor, increases, wage dispersion goes up, political pressures for redistribution grow and an authoritarian backlash becomes more likely.

To sum up, trade affects the choice of political regime depending on the distribution of factors in a given economy in the following way. Whenever the poor class constitutes the abundant factor in the economy, trade openness leads to a process of wage compression that eases redistributive tensions and hence favors the introduction of democracy. Conversely, whenever the poor class is the scarce factor in the economy, trade openness reduces its income, intensifies income inequality and makes authoritarianism more likely to take place.

Similarly, notice that, by the same logic, labor outflows (of unskilled workers) will drive up domestic wages, diminish distributional tensions in the countries of origin, and therefore precede a democratic transition. In Denmark, Norway and Sweden, strong migratory flows to the United States led to a significant reduction in wage inequality in the late 19^{th} century (O'Rourke and Williamson 1999), probably paving the way to very peaceful franchise extensions in the early decades of the 20^{th} century.

5. SECOND EXTENSION. ECONOMIC GROWTH AND CREDIBLE COMMITMENT

Growth Considerations. Although equality of conditions is important, the dynamic path of the economy is equally central to the survival of democracy. Following Franzese's (1997) abridged rendition of Alesina and Rodrik's (1994) model of redistributive taxation, we can represent the impact of the tax rate t on (savings and capital accumulation and therefore on) the growth rate ? as follows:

? = ? (t); with ?'<0, ?''<0 (4)

That is, as the tax rate increases, the growth rates declines and it does at a faster pace as the tax rate become higher. In a dynamic model, with a given growth rate, we can now represent the utility of any agent as:

(5)

That is, the utility of any individual *i* in the dynamic path equals the present value of the net disposable income in each period conditional on the growth rate (itself affected by the tax rate).

Consider now how this changes the calculations of the agents involved in the choice of a constitutional regime. When we introduce the possibility of growth (and this is affected by the tax rate), the chances of a democratic regime are likely to increase. For the sake of simplicity, consider here two types of agents only, *P* and *R*, with *a* representing the share of political resources in the hands of *R*. In a dynamic scenario, the poor, *P*, do not merely weigh their gains in one period but over an infinite number of periods. (Similarly for the rich. I focus, however, on *P*, since it is their behavior that matters here.)

The key insight in (5) is that the growth rate is endogenous to the tax rate: as the tax rate declines, the growth rate increases. Accordingly, in an infinite or sufficiently long number of periods, the class of *P* may be willing to reduce *t* from the value it would take if only one period was played to maximize its welfare. *P* would reduce *t* to the level in which any losses in transfers accruing from that reduction would be more than compensated by a faster growth rate. Naturally, the decision to reduce *t* will be too a function of the discount rate d=1/(1+r). For d sufficiently close to unity, the incentives to reduce *t* would be high.

What is important to us, however, is the ways in which these intertemporal calculations affect the choice of political regime. More precisely, we are interested in the particular set of cases in which the class of *R* is willing to impose a repressive regime, that is, whenever $at > w_r$. For all other situations, that is, those in which the rich do not engage in repression, the decision to reduce *t* (relative to its one-shot value) to maximize growth may have important economic consequences. But it does not have any political effects. The change of *t* does not alter the calculations of agents on the regime to be established.

Again, that is not the case when the constitutional regime is up for grabs. In this case, *P* weighs what it would get if t was set at the level of the one-stage game:

$$d^t\ (1+?(t))^t\ [a\ (y_p(t) - w_p) + (1\text{-}a)\ (y_p(t) + t - w_p)] \qquad (6)$$

and what it would get for a lower t, t*<t,

$$d^t\ (1+?(t^*))^t\ [y_p(t^*) + t^*)] \qquad (7)$$

Whenever there is a value *t* * for which (7)>(6), *P* will commit to it. The condition under which (7) is preferable to *P* is that the t* is such that the rich are better off accepting democracy rather than following a confrontational or authoritarian path:

$$d^t\ (1+?(t))^t\ [a\ (y_r(t) - w_r) + (1\text{-}a)\ (y_r(t) - w_r - t)] \quad < d^t\ (1+?(t^*))^t\ [y_r(t^*) - t^*)] \qquad (8)$$

The introduction of growth considerations has a clear interest for our predictions of a democratic outcome. First, in economies in which poor individuals discount heavily, their incentives to promise non-punitive taxes are relatively low and a democracy will be less likely.

More importantly, the type of production structure and the corresponding growth rate in each society will lead to very different political outcomes. In economies in which the productivity rate is relatively low, mainly agrarian societies, the possibility for sacrifices among the lower classes are almost non-existent. Their discount rate should be extremely low for them to commit to a low tax. And even then, it is most likely that the commitment of laborers to minimal transfers would not be deemed credible by their landlords. (I take up the question of credible commitment later). With a very low growth rate, the game between both sides of societies just reproduces the zero-sum nature of the original model. Only very equal agrarian societies can successfully establish a real democratic regime – that is, a regime in which elections are contested by parties that mobilize voters without resorting to coercive or manipulative strategies (patronage and so on). The historical evidence conforms to this result. Democratic regimes were successfully introduced in the relatively egalitarian peasant societies of Scandinavia and the Northeastern states of the USA in the 19^{th} century. But they were extremely implausible in both Eastern Europe and the American South at that time.

As growth rates become potentially higher, a temporal sacrifice for the sake of future gains becomes much more likely. Unless they are extremely myopic, the poorer segments of society now entertain the possibility of accepting a lower tax, knowing that their income will be much higher in the future. As a result, democracy is more easily accepted by the moneyed classes. Thus, industrialization, even if it may lead (temporarily or even permanently) to a wider disparity of incomes, enhances the chances of a democratic regime. A democracy with low or moderate taxes can exist since workers and capitalists can more easily split total income in the future.

The Need for Credible Commitment. Still, the benefits of a high growth rate constitute a necessary but not sufficient condition to boost the chances of democracy. The emergence of a democratic regime under conditions that would result in a dictatorship in a one-period game relies on the continuing 'cooperation' of P and R. It is only because the poor choose t^* and forego some immediate benefits that the rich find it to their advantage to accept a democratic regime. Should the poor decide to impose a higher tax ($t > t^*$) once in office, the rich would return to a repressive strategy. Again, the poor decide to restrain themselves once they calculate they are better off in a temporal path. The democratic equilibrium relies on the repeated interaction of both sides over an infinite number of draws.

The interest that the poor may have in following a self-restraining tax strategy would be, however, undermined if they lack any sort of institution or organization to coordinate among themselves and comply with their promise. I have assumed throughout that P is composed of a set of agents with infinite lives. This is clearly not the case. Once we allow for individuals with limited lives and thus with some uncertainty about whether they will still be alive in the next period, the equilibrium that results from successive iterations may well collapse. If P cannot credibly commit to a low-tax strategy in the future, there will be in turn no incentive for R to accept a democratic system. Thus, an institution (or set of institutions) that ensures that workers will comply with their promise is required to make this pact a successful one. Strong unions and parties, that discipline voters and that, qua institutions, have a substantial interest in the future (their discount rate d is, as it were, lower than that of an individual), increase the chances of democratic success.[9] Similarly, the presence of well-structured social democratic forces rather than radical left-wing (i.e. communist) parties should ease the transition to democracy.

Integrating (and Amending) the Literature on Post-War Consensus. This discussion accommodates one of the central insights of the literature on postwar consensus – as stated in Przeworski and Wallerstein (1986) and, more recently, in Eichengreen (1996). It also underlines recent work showing that broad social compacts have been central to successful transitions to the market economy in former communist regimes (Bresser Pereira, Maravall and Przeworski 1993).[10] The combination of social peace and sustained growth of the postwar period in Europe can be seen as a result of having a set of institutions that bound together capital and labor to overcome what had been a very fragile political environment in the interwar period in most European countries. Domestic structural conditions in the late 1940s were not that different from those in the 1920s, yet no democratic breakdowns happened after WWII. The institutional arrangements that were put in place in several small economies in the mid-1930s and then in Austria and in medium-sized nations after the war guaranteed the success of a capital-labor bargain that stabilized Europe in the third quarter of the 20th century.

[9] This paragraph borrows from Franzese's discussion of time-inconsistency problems in the choice of welfare states (1998: 8) as well as from an animated discussion we had while sharing a pizza (a better symbol, in the US, than a cake, of what political economy is all about).

[10] It can also put in a theoretical context the fact that powerful yet moderate social democratic parties have been important contributors to the success of a peaceful transition to democracy, ceteris paribus (Luebbert 1991).

Nonetheless, the model developed so far challenges in one important respect the conclusions of the institutionalist interpretation of the postwar consensus. According to this approach, institutions are *always* needed to sustain both democratic peace and high growth rates. By contrast, it is apparent that in the model in this paper institutions to lock in cooperative outcomes are only necessary (to the success of democracy) in one case: whenever both parties are balanced enough to fight over the constitutional regime. Whenever P is too weak, no promise of moderation followed by an institutional arrangement would make R deviate from the authoritarian path. Similarly, when P is so powerful that the upper classes automatically decide to accept democracy, there is no incentive for P to commit to lower taxes to achieve a democratic regime (again, a different matter is whether P may still be interested in a lower tax to boost the growth rate). Institutions are therefore beneficial in what we may call 'transitional' stages of political development. In the transition from a stage of development in which a powerful class of capitalists (or landowners) can hardly be challenged to a period in which growing middle classes and increasingly well organized lower classes make democracy irresistible, societies may face a period of relatively balanced contenders, considerable turbulence and relative indeterminacy in the political outcomes. In that scenario, the existence of institutional bargains may ease the transition to democracy. Democratic outcomes are empirically less predictable at medium levels of development simply using measures of per capita income (Huntington and Domínguez 1975).[11] According to the model discussed here, we should find that the success of democracy at those intermediate levels is strongly tied to the presence of particular institutions, such as unions, churches, etc. that facilitate a bargain among actors and monitor their commitment to it.

[11] This seems to be the case from the data in Przeworski and Limongi (1997, especially table 1). At medium levels of development, regime crises are common – about 1 every thirty years (versus 1 every 100 years in very underdeveloped and highly developed countries) – and the ratios between transitions to authoritarianism and to democracy are relatively similar. In very underdeveloped countries, crises are leading to an authoritarian outcome. In developed countries, most transitions end in a democratic outcome.

Notice that my treatment of a dynamic bargain among different political agents explains why the (relative) breakdown of certain institutions, like corporatism, that were pervasive in Europe two decades ago does not threaten democracy or even the welfare state arrangements, as some institutionalists seem to claim. It does not precisely because, under the existing balance of power among groups, those institutions have now become superfluous to the maintenance of civil peace. Their very success has led to their default – at least in the sense that actors had little interest now in investing in superfluous institutions.

6. THIRD EXTENSION. INSTITUTIONS

In line with the recent formal literature that stresses the equilibrium-inducing role of institutions, the presumption has been that a 'well-written' constitution contributes in a substantial manner to secure democratic stability. The truth of the matter is, however, that formal models have been only used to account for varying equilibria within already well-established democratic regimes. No explicit theories have been advanced to link certain institutions to the stability of regime. That institutions matter has been only explored empirically – witness the recent debates on the impact of presidentialism (Linz and Valenzuela 1994, Shugart and Carey 1992) or the much older one on proportional representation and the breakdown of democracies in interwar Europe (Hermens 1941). In addition, controls for non-institutional variables have been mostly absent.

Given a relatively tight model about the underlying distribution of interests and therefore about the rational course of behavior of all actors, it is possible to explore, more precisely, how different institutional arrangements may affect the chances of a democratic arrangement. Broadly speaking, whether institutions play any role in ensuring democratic outcomes mainly depends on whether they modify the underlying balance of power among any of the contending parties. If they do not (that is, if they are what can be tentatively called 'weak' institutions), they have no influence on the likelihood of a democratic outcome. If they do (the case of 'strong' institutions), they may.

6.1. Voting Mechanisms and the Case of Proportional Representation

If we define an institution simply as a mechanism to aggregate preferences, choosing different institutional frameworks will hardly change the likelihood of having a democracy. If individuals have any material incentives (deriving from the preexisting distribution of resources) to impose a dictatorship or to engage in rebellious action against a democratic government, no constitutional arrangement will bridle them.

Under both majoritarian and proportional representation systems, and given a one-dimensional policy space (around taxes) and well-behaved utility functions, the solution will always be, on average, the tax rate preferred by the median voter. In a plurality system, politicians will converge on the median voter's ideal point (Shepsle 1990). In a proportional representation system, although politicians may not converge to the median voter, actual policy (in parliament) will depend on the median parliamentarian (Laver and Schofield 1990). It is also safe to predict that the median parliamentarian will be close to the median voter (Huber and Powell 199.). Accordingly, the stability of a democratic regime is not fundamentally affected by the electoral system in place.

Still, under certain conditions, it is possible for different mechanisms of representation to have a (slight) effect on the survival of democracies. Under proportional representation, the median parliamentarian (representing the median voter) does not vary over time. As a result, $t^* = t_m$ every year. By contrast, in non-PR systems, and given partial divergence among competing parties (Alesina and Rosenthal 1995), t^* will equal t_m *on average* over time, but will vary from election to election. Now, if either the rich or the poor are risk averse, the introduction of proportional representation will make a democracy more stable since the agents' expected utility will be not inherently diminished by repeated swings in the outcome.

6.2. The Case for Decentralization

Our understanding of institutions may be much stronger, however. An institution may not simply be an aggregation mechanism, but a structure that allocates resources (for example, by giving the control of the police to the winner) and therefore reinforces (or weakens) a pre-existing distribution of endownments.[12] In that case, particular institutional arrangements may have beneficial effects for democracy.

This is the case of federalism (and, similarly, of any system of sovereign states). To see why, assume a territory with a population characterized by a relatively unequal distribution of assets. Assume further that those assets are not uniformly distributed across that territory. On the contrary, within it, there are several subterritories, each one having a different income distribution than the general distribution for the whole territory. This necessarily means that *at least one* of the subterritories is more equal than the whole territory. (It could also be the case that *all* the subterritories are internally equal -- but that, due to their differences in average income, the general income distribution is unequal.)

In these cases, that is, whenever the distribution of assets at the national and subnational level is different, whether democracy will prosper or not will depend on both the extent of inequality <u>and</u> how centralized tax collection is. If income differences are high and there is a completely centralized tax

[12] In other words, (controlling) an institution has increasing returns to scale.

system, redistributive tensions will be important and democracy will be contested by the populations concentrated in the richer areas. If transfers are too high, the rich will rather endorse an authoritarian system.

By contrast, redistributive tensions and therefore the occurrence of authoritarianism will decline if the state is decentralized, that is, if political and fiscal sovereignty is devolved to smaller units. With decentralization, the chance of securing a democratic outcome certainly increases in those subterritories whose income distribution is more equal than the one at the general level. (Logically, decentralization does not lead to more democracy in subterritories whose inequality is equal to or bigger than the territory as a whole.) Thus, the survival of relatively democratic regimes in the North Eastern and Western areas of the United States in the 19th century was dependant on the maintenance of a quasi-confederal system. With a very centralized state, those units would have been affected by the harsh inequalities of the South (Rueschemeyer et al. 1992, pp. 122 ff.).

It is important to stress that 'federalism' or decentralization are not automatic producers of democratic outcomes. Federal institutions only ease redistributive tensions if they are 'strong' institutions, that is, if the subunits are endowed with enough military resources (in the form of a national guard, police, etc.) to sustain the federal or confederal arrangement to their advantage. Otherwise, that is, without any effective barriers to the merger of separate nations, it would always be in the interest of the poorer regions to re-establish a unitary tax system to secure net transfers to them.

This insight on the role of federalism applies equally well to the international order. A democratic arrangement that appears to be sustainable in separate countries with different per capita income levels (provided each one of them was internally homogeneous and politically independent), will be very likely to collapse once these regions are united under a single authority. Although in today's system of separate nations there are potential redistributive tensions between the 'North' and the 'South', the latter cannot effectively impose redistributive mechanisms on the former. In other words, the lack of truly unified international institutions is the price we pay to secure the maintenance of stable democracies in the developed world as well as in certain developing countries. Given the present differences in per capita income across the globe, the imposition of any 'world order' would lead to the collapse of democracy everywhere.

7. SOME EMPIRICS

To explore the empirical fit of the model, I engage in two exercises. In the first subsection, I look at the relationship between democracy and inequality controlling for development in a panel of contemporary democracies. In the second subsection, I trace historically how inequality declined before a full democratic outcome was imposed in several European countries. The second subsection is built with the goal of showing that a decline in income inequality preceded (rather than followed) successful democratic transitions.

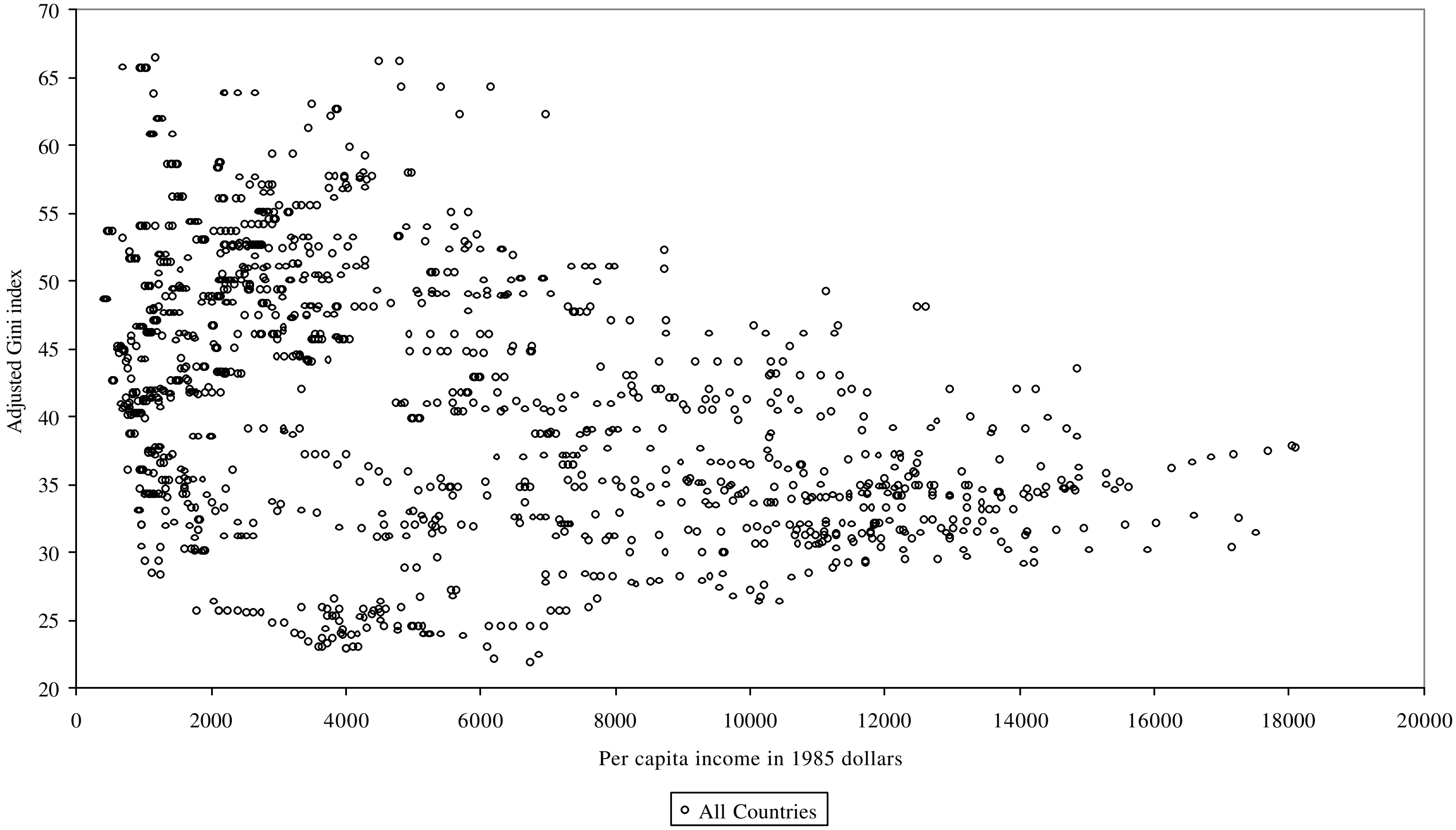
7.1. The Contemporary Period

To consider how well the model fares in empirical terms, I use here a sample formed by all countries of the world from 1950 to 1990 for which data are available. Although most of the data come for the period after 1965, there are observations for about a dozen to twenty countries for the 1950s. The number of countries for which data are available peaks at over fifty in the last decade. Appendix 1 lists the countries and years employed.

Democracy measures whether each country was a competitive democracy in the 5 previous years – and thus ranges from 0 (no democracy ever) to 1 (democracy in the 5 years). To measure the presence of a democratic regime, I follow the index developed by Alvarez, Cheibub, Limongi and Przeworski (1996) and the classification reported in appendix 1 of their paper. Democratic regimes are defined as those regimes "in which some governmental offices are filled as a consequence of contested elections" (p.4). Using an average measure has the advantage of testing not just the presence of a democracy but its stability over time.

The level of development is measured through the log value of real per capita income (in constant dollars, Chain Index, expressed in international prices, base 1985), taken from the Penn World Tables.

Figure 4
Development and Inequality



Data on inequality are taken from Deininger and Squire (1996), who have gathered a data set of cross-national cross-time observations including Gini coefficients and the proportion of income in the hand of each quintile. This data set consists of 692 'high-quality' (that is, comparable) observations – 587 of them with Gini coefficients. For the estimation, I have employed an adjusted Gini coefficient, to control for cross-national variation in the methods used to measure income distribution. This variation is a function of the choice of the recipient unit (individual or household), the use of gross versus net income and the use of expenditure or income. Following the suggestions of Deininger and Squire, the adjusted Gini is equal to the Gini coefficient plus 6.6 points in observations based on expenditure (versus income) and 3 points in observations using net rather than gross income. (Results reported below do not vary if we use unadjusted Gini coefficients). The year-country adjusted Gini coefficient employed in the sample is a 5-year moving average of adjusted Gini coefficients. This procedure minimizes the volatility in the inequality measures and maximizes the number of observations (approximately doubling them).

Figure 4 shows the relation of inequality and development. As nations develop, inequality declines. At low levels of economic development the degree of inequality is highly variable across countries. For economies with a per capita income of more than $10,000 (constant prices of 1985), the average Gini index is 34.2 with a standard deviation of 3.6. For economies under a per capita income of $5,000 the mean Gini index is 42.5 with a standard deviation of 10.4 (that is, the values range from 20.9 to 66.9).

Estimation. Table 3 explores the impact of inequality and development on political regime. The estimation of the pooled cross-sectional time-series model is done through ordinary least squares, adjusting the standard errors for unequal variation within panels and correcting for autocorrelation. Column 1 regresses the index of democracy on (1) per capita income and (2) the log value of the reverse of the adjusted Gini coefficient (that is, 100 minus the adjusted Gini coefficient). The log value is introduced to take into account the fact that the negative impact of inequality may be harsher on democracies at high levels of inequality.

TABLE 3. Democracy, Development and Inequality

	PROBABILITY OF DEMOCRACY, 1950-1990 [a]			
INDEPENDENT VARIABLES	(1)	(2)	(3)	(4)
Constant	-1.49***	-0.03	-1.96***	-2.23***
	(0.34)	(0.41)	(0.42)	(0.46)
Per Capita Income	0.14***	0.01	0.14***	0.19***
(Log) [b]	(0.02)	(0.02)	(0.03)	(0.03)
Equality Index (Log) [c]	0.20**	0.21**	0.32**	0.31**
	(0.09)	(0.09)	(0.11)	(0.01)
Average Years of Schooling [d]			0.01	0.02***
			(0.01)	(0.00)
Old-Age Dependency Ratio [e]			0.01**	
			(0.00)	
Share of Agricultural Sector [f]			-0.00	
			(0.00)	
Index of Economic Concentration [g]			-0.04^	
				(0.07)
Oil Exports as Proportion				-0.12**
of Total Exports (index from 0 to 1)			(0.05)	
Africa		-0.77***		
		(0.07)		
Asia		-0.61***		
		(0.06)		
Central and South America		-0.38***		
		(0.06)		
Eastern Europe		-0.91***		
		(0.06)		
Model Chi-2	59.00	620.21	182.66	148.42
P>Chi-2	0.0000	0.0000	0.0000	0.0000
R-2	0.240	0.472	0.445	0.452
Number of observations	1254	1254	757	797

[a] Democratic Institutions. Five-year average of democratic institutions. Variable goes from 1 (democracy in previous 5 years) to 0 (non-democracy in the previous five years). Average calculated from data in Alvarez, Cheibub, Limongi and Przeworski (1996).

[b] Per Capita Income. Log of per capita GDP in $ in 1985 constant prices. Source: World Penn Tables.

[c] Equality Index = (100-Adjusted Gini Coefficient). The adjusted Gini index equals the Gini coefficient plus 6.6 points in observations based on expenditure and 3 points in observations using net income and it goes from 0 to 100.

[d] Average years of schooling. Source: Barro and Lee (19..).

[e] Old-age dependency ratio' (ODR) is calculated as follows. ODR = Life expectancy (LE) - 60 if LE > 60, ODR = 0 otherwise.

[f] A verage share of the agricultural sector over GDP.

[g] Hirsch-Herfindhal index (HH) of concentration calculated at the sectoral level, where HH is calculated as

Estimation: Ordinary last squares estimation with panel corrected standard errors, and correction for autocorrelation and for heteroskedastic disturbances between panels.

Standard errors in parenthesis.
*** p<0.01
** p<0.05
* p<0.10
^ Statistically significant in a joint F-test with percentage of oil exports.

Confirming a well-know fact, a higher per capita income increases the likelihood of having a democracy. At medium levels of inequality (a Gini coefficient of 0.4), the probability of a fully stable democracy in the previous 5 years is about 32 per cent in a country with a per capita income of $1,000. It increases to 55 per cent with a per capita income of $5,000 (the top quartile of the sample). It is 66 per cent with a per capita income of $10,000 (the top decile of the sample). The result is in line with the results of the literature, but the specific impact of development is perhaps less substantial than generally reported.[13] Since inequality is partly related to per capita income, the traditional association between development and democracy may be hiding the independent role of income distribution.

Inequality has an important impact on democracy. To appreciate how income distribution affects the choice of the political regime, consider a country with an income of $2,000 in 1985 constant prices (the median of the sample). With very high levels of inequality, or a Gini index of 0.7 (the maximum in the sample is 0.66 in Zimbabwe in 1950), the probability of a stable democracy is 29 per cent. Yet for a relatively equal society, with an index of 0.2, the probability climbs to 49 per cent. Column 2 introduces controls for continental areas – Africa, Asia, Central and South America and Eastern Europe – since some studies explained democracy as a result of geography-specific factors (such as diffusion effects and so on). Whereas the coefficient of per capita income falls, the inequality coefficient remains stable. Column 3 introduces controls for education, age and size of the primary sector. Again, the impact of inequality does not change.

[13] In Przeworski and Limongi (1997), the probability of being democratic is less than 10 per cent for a per capita income below $1,000. The probability goes up to 50 per cent if per capita income is $5,000 and then to 85 per cent for any per capita income above $7,500 (data from figure 1).

Finally, column 4 introduces controls for the level of economic concentration in the economy and for the weight of oil exports. The level of economic concentration is measured through a Hirsch-Herfindhal index of concentration of the production sectors of the economy. The level of concentration can be thought of as proxying two interrelated factors: the degree to which economic resources are concentrated in a few hands in the economy and, more appropriately, the extent to which capital may have alternative uses in the domestic economy. The more concentrated production is in one sector, the lower asset mobility will be. Accordingly, the threat to tax will increase and, correspondingly, capital incentives to intervene and block redistributive policies. Column 4 shows that democratic outcomes are less likely to occur in strongly concentrated economies (and in oil-exporters).

7.2. Temporal Analysis

Temporal series on the evolution of inequality are hard to build. I offer here two sets of data that trace the evolution of social conditions in the period previous to the introduction of democratic systems.

Figure 5 shows the evolution of the income share of the top decile of the population in Britain, Denmark, Germany and Norway from the last decades of the 19th century through the interwar period. The data for Britain come from Williamson (1991). The rest of the data come from Kraus (1981). Figure 5 traces the first democratization wave. The acceptance by the House of Lords of the Liberal government tax plans in 1911, the eventual appointment of a Liberal cabinet by the king in Denmark in 1906, and the generalization of constitutional government and universal suffrage in all countries either during or after World War I only happened after the substantial inequalities of the late 19th century had subsided significantly. The triumph of democracy was also aided by the progressive mobilization of the working class at the turn of the century -- that is, by an increase in P's resources. Thus, for example, while only 11 per cent of the population was unionized in Britain in 1892, about 45 per cent was a member of trade unions by 1920 (Scase 1977). Similarly, in Belgium membership exploded from less than 6 per cent of the non-agricultural workforce to over 40 per cent from 1910 to 1920 (Strikwerda 1997). In Germany unionized workers were 12 per cent of the workforce in 1910 and about 48 per cent twenty years later . Similarly, in the Netherlands the percentage went up from 9 per cent in 1910 to 30 per cent in 1930 ((Strikwerda 1997; Rothstein 1989).

Figure 5. Inequality at the Turn of the Century

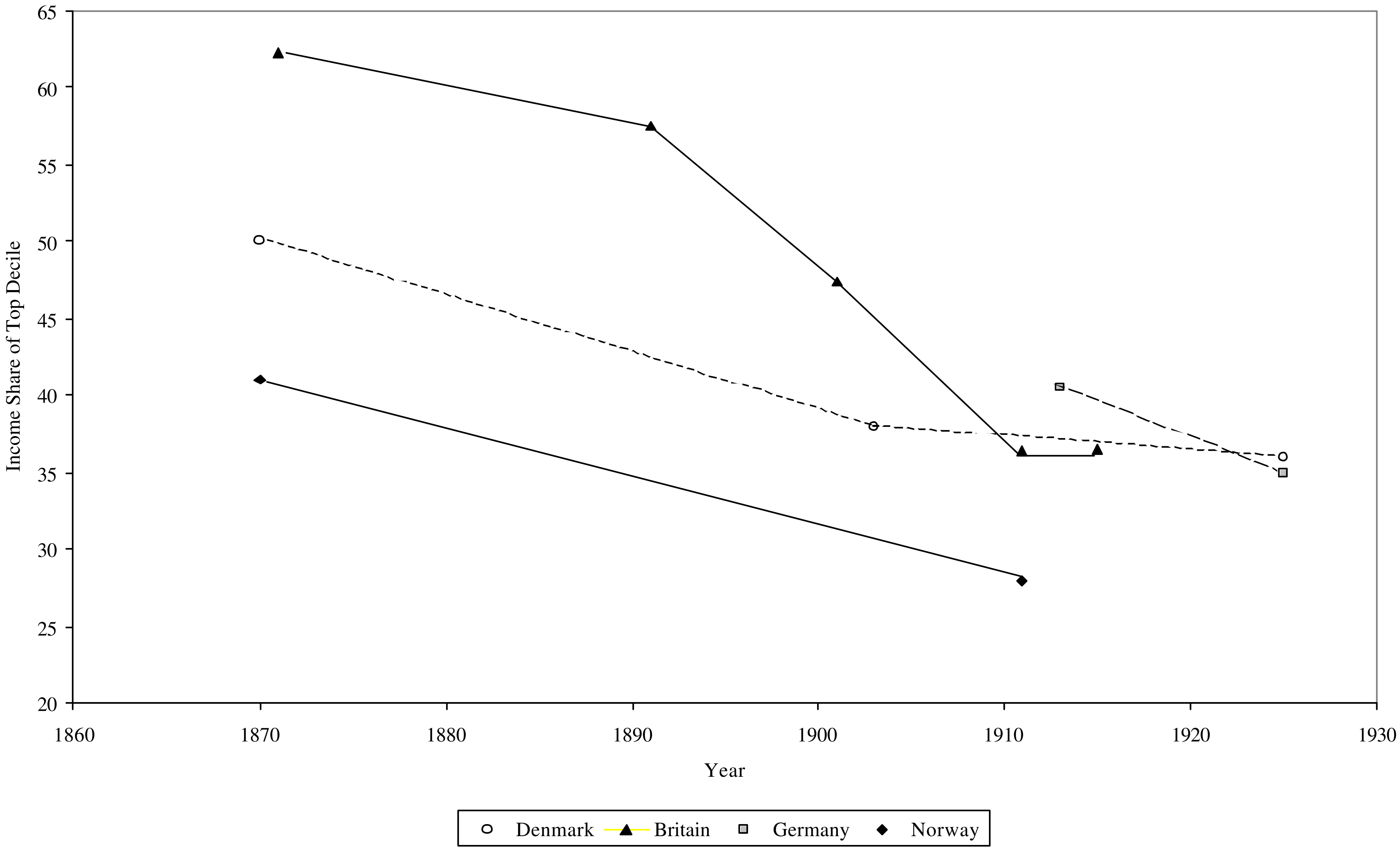


Figure 6
Inter-Regional Inequality in Spain

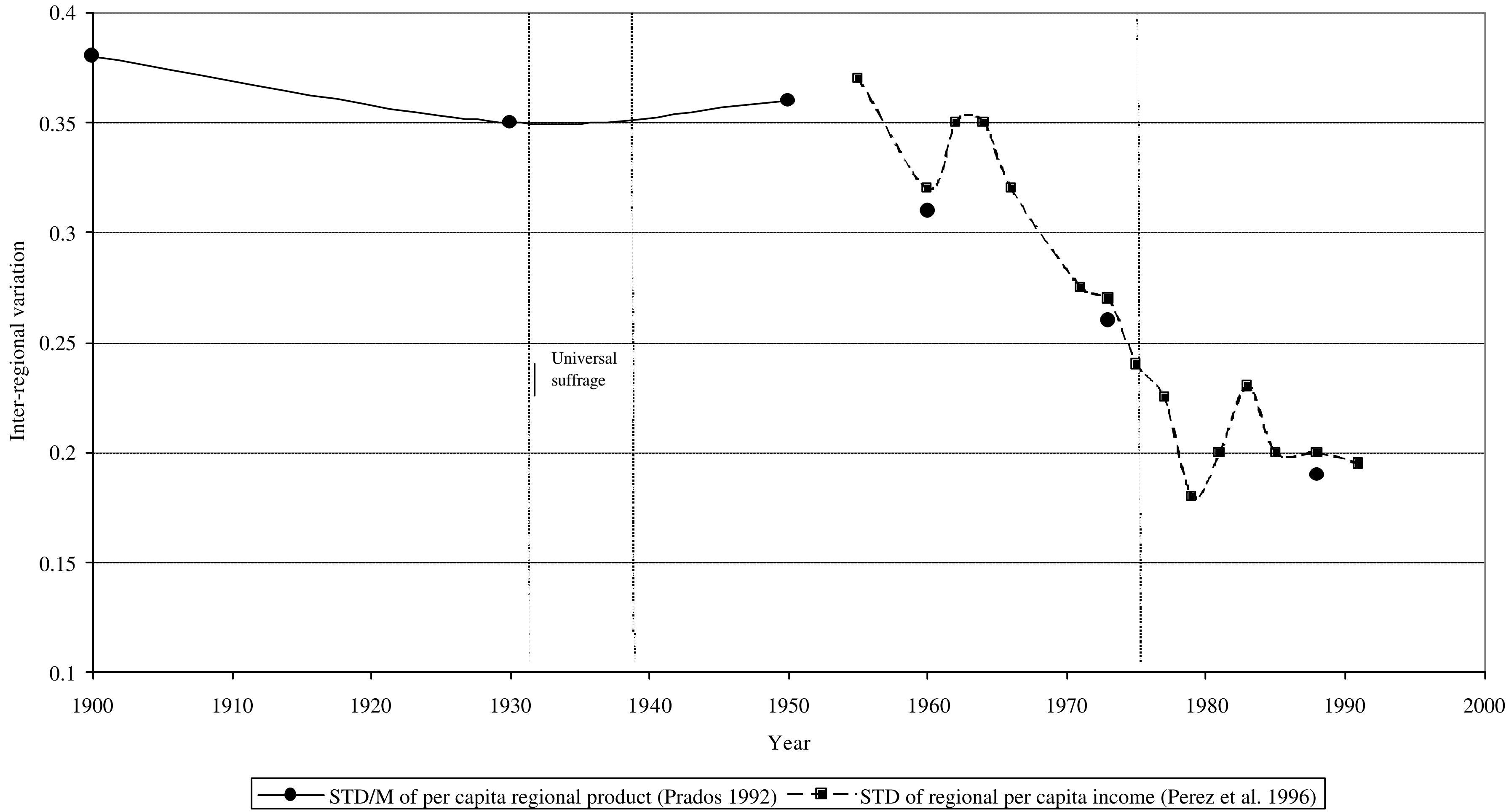


Figure 6 displays the Spanish case for the whole century -- a crucial case since it includes both the democratic breakdown in 1936 and the very successful transition to democracy in the late 1970s. The data show the level of inter-regional inequality measured through the coefficient of covariance of the per capita regional product from 1900 to 1988 and the standard deviation of regional per capita income from 1955 onward.[14] It is apparent from the Spanish case that the reduction in inequality, due to a period of rapid growth and massive migratory flows to the cities in the 1960s, was the fundamental precondition for the establishment of a fully working democracy in the 1970s.

8. CONCLUSION

Why some democracies last longer than others is still today a poorly understood phenomenon. Employing a simple model based on heterogenous actors, this paper has shown that any successful democracy presupposes a certain level of economic equality. Excessive differences among the rich and the poor push the former to restrict the franchise to avoid the redistributive consequences of a fully democratic system. It is only when economic differences decline (a phenomenon in part related to economic development) and political resources across classes are balanced that democracy can last.

The paper has a pessimistic undertone to it. An enlightened domestic politician can very seldom pass policy reforms to equalize conditions and hence make democracy possible – if he successfully did, that is, if he had been able to overcome any resistance to change, that would mean that a democratic

[14] As a matter of fact, recent studies for the last decades show that Spanish data on inter-regional inequality can be almost totally explained in terms of interpersonal inequality.

arrangement would have been possible in the first place and the reform was unnecessary to start with. Those that oppose democracy oppose it for its distributional consequences and have the same incentives to block any reformist program directed to create the social preconditions for a successful democracy. Thus, it is not surprising that (peaceful) agrarian reforms in developing countries are generally a failure. To put it in a different way, outside interventions were a necessary condition for the success of democracy in Japan and Germany (and probably in Eastern Europe after 1990) because they were the only way to overcome strong domestic resistance to reform. With the separation of West Germany from Prussia, where land was heavily concentrated in the hands of the Junkers, democracy could flourish in the Federal Republic. The re-unification of 1990 did not jeopardize democracy given the radical transformation of the Eastern part at the hands of the Communist Party. After World War II the United States promoted a radical land reform in Japan that reduced the percentage of tenants from 43.5 to 11.7 per cent (Huntington 1968, p.386).

The key condition of the paper to have a stable democracy -- a relative level of income equality across individuals -- can be overcome under certain circumstances. First, capital mobility is most likely to be related to the triumph of liberal institutions. Mining posts and rural-based economies, where confiscation can only be opposed through political means, lead to authoritarian regimes. Second, trade is contingently related to democracy. In 19th-century England, where trade favored the emerging industrialists vis-à-vis the landowning class and pushed workers' wages upward, economic openness came hand in hand with democracy. By contrast, in several developing countries trade probably exacerbated economic inequalities, eroding any democratic consensus at certain points of the 20th century. Third, democracy becomes much more likely in those countries in which rapid economic growth expands the frontier of consumption for all classes and offers the poorest segments (traditionally tied to the land) higher incomes (in the cities) without depriving the upper classes from their assets. Still, a smooth transition to democracy requires the presence of strong, moderate leftist parties able to tie the hands of workers and to force them to wait for growth to benefit them or their children in the medium run.

Institutions (and institutional engineering) play a subdued role in maintaining a democratic outcome. In the last two decades, neoinstitutionalists of all sorts, soft- and hard-liners alike, have contended that particular institutions and constitutional choices account for the different equilibria we observe in the political world. This may be true for policy outcomes in fundamentally stable political regimes. But this claim becomes dubious as we reflect, in turn, on the determinants of those institutions. Political regimes are the result of the underlying distribution of assets across individuals. The task of political economists should consist in unveiling how different distributional patterns came about and how they are sustained by and shift with different political arrangements.

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