

WHY DID THE WEST EXTEND THE FRANCHISE? DEMOCRACY, INEQUALITY, AND GROWTH IN HISTORICAL PERSPECTIVE*

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During the nineteenth century most Western societies extended voting rights, a decision that led to unprecedented redistributive programs. We argue that these political reforms can be viewed as strategic decisions by the political elite to prevent widespread social unrest and revolution. Political transition, rather than redistribution under existing political institutions, occurs because current transfers do not ensure future transfers, while the extension of the franchise changes future political equilibria and acts as a commitment to redistribution. Our theory also offers a novel explanation for the Kuznets curve in many Western economies during this period, with the fall in inequality following redistribution due to democratization.

I. INTRODUCTION

The nineteenth century was a period of fundamental political reform and unprecedented changes in taxation and redistribution. Britain, for example, was transformed from an “oligarchy” run by an elite to a democracy. The franchise was extended in 1832 and then again in 1867 and 1884, transferring voting rights to portions of the society with no previous political representation. The decades after the political reforms witnessed radical social reforms, increased taxation, and the extension of education to the masses. Moreover, as noted by Kuznets, inequality, which was previously increasing, started to decline during this period: the Gini coefficient for income inequality in England and Wales had risen from 0.400 in 1823 to 0.627 in 1871, but fell to 0.443 in 1901. Two key factors in the reduction in inequality were the increase in the proportion of skilled workers [Williamson 1985] and the redistribution of income toward the poorer segments of the society. For example, taxes rose from 8.12 percent of National Product in 1867 to 18.8 percent by 1927, and the progressivity of the tax system increased substantially (see Lindert [1989]).

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During the late nineteenth and early twentieth centuries, the franchise was also extended in most other Western societies. Democratization was again followed by increased redistribution, and in most cases, by the downturn of the Kuznets curve.

These events are hard to understand with our existing theories. If democratization is likely to lead to increased taxation and redistribution (e.g., Meltzer and Richard [1981]), why should the elite extend the franchise? Our answer is that the elite were forced to extend the franchise because of the threat of revolution. We argue that extending the franchise acted as a commitment to future redistribution and prevented social unrest. In contrast to democratization, the promise by the elite to redistribute in the future, while maintaining political power, would not have been credible.

The second contribution of our paper is to point out the potential link between democratization and the Kuznets curve.¹ Rising inequality often associated with industrialization increases social unrest and induces democratization. Democratization in turn opens the way for redistribution and mass education, and reduces inequality. Interestingly, in line with this approach, in a number of Western economies, the peak of the Kuznets curve coincides with the extension of the franchise.

The thesis that the elite extended the franchise in order to avoid a revolution or social unrest is at the heart of our paper. Although we are aware of no other papers in the economics literature, a nonformal literature in political science, starting with the seminal work of Lipset [1960] and Moore [1966], has studied the origins of democracy. To the best of our knowledge, however, no previous work explained franchise extension as a commitment device to future redistribution or pointed out the link between democratization and the Kuznets curve, though Thorborn [1977] and Rueschemeyer, Stephens, and Stephens [1992] have stressed the role of social conflict in democratization.² In

1. Other theories of the Kuznets curve include Kuznets' [1955] original conjecture that the curve was generated by the dual economy dynamics generated by the switch from the agricultural to the industrial sector; Lindert's [1986] hypothesis that the curve resulted from the falling importance of income from the land; Williamson's [1985] argument that technological change increased wages relative to capital income; and Aghion and Bolton's [1997] model where accumulation by the rich eventually pushes down the interest rate sufficiently to allow the poor to invest and catch up.

2. In a different context, North and Weingast [1989] have argued that the introduction of the English Parliament in the seventeenth century was a commitment to low taxes in the future. Our paper is also related to models of political

Section IV below, we outline three alternative theories and discuss whether any of these appear to give a better description of the historical events than our preferred story. The first, which we refer to as the Enlightenment view, is that the elite extended the franchise because their social values changed. The second theory is that political competition within the elite led to the extension of the franchise when one of the factions, in an attempt to increase its support, brought new groups into the political system (see Himmelfarb [1966] and Collier [1999]). The third, which is akin to the famous thesis of Moore [1966], is that the middle class was the driving force behind the extension of the franchise, in part hoping to shift the future balance of power. Although all three stories are likely to have contributed to democratization in Europe in the nineteenth century, especially to the extension of the franchise to women, our interpretation is that in Britain, France, Germany, and Sweden, the threat of revolution was the major factor in the extension of the franchise to the poorer segments of the society.

II. A MODEL OF DEMOCRATIZATION

In this section we develop our main model of democratization. We postpone a discussion of alternative models of franchise extension until Section IV.

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

There is a unique consumption good y with price normalized to unity, and a unique asset h (which should be thought of as a combination of human and physical capital and land). We begin our analysis of the economy at time $t = 0$ where each poor agent has capital h_0^p , and each member of the elite has $h_0^r > h_0^p \geq 1$. In this section these stocks are exogenous, so we drop time subscripts. Accumulation is investigated in Section III.

conflict and revolution, including Roemer [1985], Grossman [1991, 1995], and Ades and Verdier [1993].

There are two methods of producing the final good, both linear in capital. The first is a market technology, $Y_t^m = AH_t^m$, where H_t^m is the amount of capital devoted to market production. The second is an “informal,” or home production technology, $Y_t^h = BH_t^h$, where H_t^h is the amount of capital used in home production. Naturally, we have $H_t^h + H_t^m = H \equiv \int h^i di$. We assume that $A > B$; thus, market production is always more productive. The only role of home production in our analysis is to ensure an equilibrium tax rate less than 100 percent, because while taxes can be imposed on the market sector, home production is not taxable. A high value of B implies that only limited taxes can be levied on income.

All agents have identical preferences represented by a linear indirect utility function over net income, and a discount factor $\beta \in (0,1)$. Posttax income is given by $\hat{y}_t^i \equiv (1 - \tau_t)Ah^i + T_t$, for $i = p, r$, where τ_t is the tax rate on income, and $T_t \geq 0$ is the transfer that the agent receives from the state. We assume throughout that taxes and transfers cannot be person specific—hence T_t and τ_t are not indexed by i . The government budget constraint therefore implies that $T_t = \tau_t AH^m$.

The λ poor agents, though initially excluded from the political process, can overthrow the existing government and take over the capital stock in any period $t \geq 0$. We assume that if a revolution is attempted, it always succeeds. Revolution provides a window of opportunity for a large-scale redistribution of assets away from the rich to the poor, so the poor take over control of the capital stock of the economy, but a fraction $1 - \mu_t$ of the capital stock gets destroyed in the process.³ Therefore, if there is a revolution at time t , each poor agent receives a per-period return of $\mu_t AH/\lambda$ in all future periods: total income in the economy is $\mu_t AH$ and is shared between λ agents. We assume that μ is stochastic and changes between two values: μ^h and $\mu^l = 0$, with $\Pr(\mu_t = \mu^h) = q$ irrespective of whether $\mu_{t-1} = \mu^h$ or μ^l . The fact that μ fluctuates captures the notion that some periods may be more conducive to social unrest than others. It will also enable us to model the idea

3. The assumption that the elite receive nothing after a revolution is only for simplicity. The functional form assumption that the poor receive a fraction μ of the assets of the economy is also inessential. Instead, the important feature is that revolution is more attractive to the poor in a more unequal society, which receives support from the positive association between inequality and instability documented in Muller and Seligson [1987] and Alesina and Perotti [1996].

More generally, one could imagine that certain assets, such as human capital, are harder to expropriate than others. Since we interpret h as a mixture of physical and human capital and land, one can imagine that part of it can be expropriated while the rest will be wasted during a revolution.

that a promise to redistribute today may not materialize due to changes in circumstances tomorrow. A low value of μ means that a revolution is very costly, while a low value of q implies that the threat of revolution is rare, perhaps because the poor are unorganized.⁴

Finally, in each period the elite have to decide whether or not to extend the franchise. If it is extended, the economy becomes a democracy, and the median voter, a poor agent, sets the tax rate. We assume that if voting rights are extended, they cannot be rescinded, so the economy always remains a democracy.⁵

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

1. The state μ is revealed.
2. The elite decide whether or not to extend the franchise. If they decide not to extend the franchise, they set the tax rate.
3. The poor decide whether or not to initiate a revolution. If there is a revolution, they share the remaining output. If there is no revolution and the franchise has been extended, the tax rate is set by the median voter (a poor agent).
4. The capital stock is allocated between market and home production, and incomes are realized.

The analysis can be simplified by exploiting two features of the model. First, the capital allocation decision takes a simple form: if $\tau_t > \hat{\tau} \equiv (A - B)/A$, then all agents allocate their capital to home use; thus, $H_t^m = 0$. On the other hand, if $\tau_t \leq \hat{\tau}$, then $H_t^m = H_t$ is a best-response. No voter would ever choose $\tau_t > \hat{\tau}$, so we can restrict attention to $\tau_t \leq \hat{\tau}$ and $H_t^m = H_t$, which reduces the number of actions to be considered. Second, all members of the elite have identical preferences, so we can treat them as one player. Also, all poor agents have the same preferences, and when it comes to whether or not to participate in a revolution, there is no “free-rider problem” because if an agent does not take part in the

4. Another determinant of the frequency of the threat of revolution may be urbanization and urban concentration (see, e.g., DiPasquale and Glaeser [1998]).

5. This is not to deny that coups happen. Nevertheless, once voting rights are extended and political parties are formed, it is relatively costly for any group to exclude the rest from the political process. We discuss coups in our more recent paper [Acemoglu and Robinson 1999].

Also notice that democratization is all-or-nothing. Extending the franchise to only a segment of the citizens would not be useful in this model: if the poor become the majority, then the consequences are the same as in the all-or-nothing case, and otherwise, the reform has no commitment value.

revolution, he can be excluded from the resulting redistribution.⁶ So, we can treat all poor agents as one player. This economy can therefore be represented as a dynamic game between two players, the elite and the poor.

In the text we characterize the pure strategy Markov Perfect Equilibria of this game, in which strategies only depend on the current state of the world and not on the entire history of the game. Although the focus on Markovian equilibria is natural in this setting, for completeness, we discuss non-Markovian equilibria in the Appendix and show that they do not change our general results. The state of the system consists of the current opportunity for revolution, represented by either μ^l or μ^h , and the political state (democracy or elite control). More formally, let $\sigma^r(\mu, P)$ be the actions taken by the elite when the state is $\mu = \mu^h$ or μ^l , and $P = E$ (elite in power) or D (democracy). This consists of a decision to extend the franchise ϕ when $P = E$, and a tax rate τ^r when $\phi = 0$ (i.e., when the franchise is not extended). Clearly, if $\phi = 0$, P remains at E , and if $\phi = 1$, P switches to D forever. Similarly, $\sigma^p(\mu, P|\phi, \tau^r)$ are the actions of the poor which consist of a decision to initiate a revolution, ρ ($\rho = 1$ representing a revolution), and possibly a tax rate τ^p when the political state is $P = D$. These actions are conditioned on the current actions of the elite who move before the poor agents according to the timing of events above. Then, a (pure strategy Markov Perfect) equilibrium is a strategy combination, $\{\sigma^r(\mu, P), \sigma^p(\mu, P|\phi, \tau^r)\}$ such that σ^p and σ^r are best-responses to each other for all μ and P .

We can characterize the equilibria of this game by writing the appropriate Bellman equations. Define $V^p(R)$ as the return to poor agents if there is a revolution starting in state $\mu = \mu^h$. Since only the value of μ^h at the time of the revolution matters, $V^p(R) = \mu^h AH/\lambda(1 - \beta)$, which is the per-period return from revolution for the infinite future discounted to the present. Also, because the rich lose everything, $V^r(R) = 0$. Finally, since $\mu^l = 0$, the poor would never attempt a revolution when $\mu = \mu^l$.

In the state (μ^l, E) the elite are in power, and there is no threat of revolution, so in any Markov Perfect Equilibrium, $\phi = 0$ and $\tau^r = 0$. Therefore, the values of poor and rich agents, $j = p$ or r ,

6. Although there is no free-rider problem, there may be a coordination issue whereby each poor agent expects others not to take part in the revolution, and prefers not to do so himself. We ignore this problem here.

are given by

$$(1) \quad V^j(\mu^l, E) = Ah^j + \beta [(1 - q)V^j(\mu^l, E) + qV^j(\mu^h, E)].$$

Next, consider the state (μ^h, E) , and suppose that the elite play $\phi = 0$ and $\tau^r = 0$; that is, they neither extend the franchise nor redistribute to the poor. Then, we would have $\tilde{V}^p(\mu^h, E) = Ah^p/(1 - \beta)$. The revolution constraint is equivalent to $V^p(R) > \tilde{V}^p(\mu^h, E)$, so that without any redistribution or franchise extension, the poor prefer to initiate a revolution when $\mu = \mu^h$. We assume

ASSUMPTION 1.

$$\frac{h^r}{h^p} > \frac{\lambda(1 - \mu^h)}{(1 - \lambda)(\mu^h - (1 - \beta))(A - B)/A}.$$

This is a condition slightly stronger than the revolution constraint, $V^p(R) > \tilde{V}^p(\mu^h, E)$. Specifically, it ensures not only that the revolution constraint binds, but also that redistribution only for one period is not sufficient to prevent a revolution.⁷ This feature will simplify the discussion below.

Since the revolution is the worst outcome for the elite, they will attempt to prevent it. They can do this in two different ways. First, the elite can choose to maintain political power, $\phi = 0$, but redistribute through taxation. In this case, the poor obtain $V^p(\mu^h, E, \tau^r)$, where τ^r is the tax rate chosen by the rich. With either action by the elite, the poor may still prefer a revolution. Thus,

$$V^p(\mu^h, E) = \max [V^p(R); \phi V^p(D) + (1 - \phi)V^p(\mu^h, E, \tau^r)],$$

where $V^p(D)$ is the return to the poor in democracy. Instead, the return to the poor when the elite choose the redistribution strategy is

$$(2) \quad V^p(\mu^h, E, \tau^r) = (1 - \tau^r)Ah^p + \tau^rAH \\ + \beta[qV^p(\mu^h, E, \tau^r) + (1 - q)V^p(\mu^l, E)].$$

The rich redistribute to the poor, taxing all income at the rate τ^r . The poor therefore receive net income $(1 - \tau^r)Ah^p$ from their own capital and a transfer of $T = \tau^rAH$. If in the next period we are still in state $\mu = \mu^h$, redistribution continues. But, if the state switches

7. More explicitly, this condition is derived from $\mu^h H/\lambda(1 - \beta) > h^p/(1 - \beta) + (A - B)(H - h^p)/A$, where the second term on the right is the one-period transfer from the rich to the poor.

to $\mu = \mu^l$, redistribution stops, and the poor receive $V^p(\mu^l, E)$. This captures the discussion in the introduction that the elite cannot commit to future redistribution, unless the future also poses an effective revolution threat. Notice that $\tau^r \leq \hat{\tau}$, that is the elite cannot tax themselves at a rate higher than $\hat{\tau} \equiv (A - B)/A$; if $\tau > \hat{\tau}$, then each (rich) agent would privately prefer to use all their assets in the home sector, reducing aggregate tax revenues to zero.

The second strategy to prevent revolution is to extend the franchise, $\phi = 1$. Since $\lambda > 1/2$, in a democracy the median voter is a poor agent and wants as much redistribution as possible. Redistribution has no allocative cost so long as $\tau \leq \hat{\tau}$, so the equilibrium tax rate is $\tau_t = \hat{\tau} \equiv (A - B)/A$, and $T_t = (A - B)H$. The returns to poor and rich agents in democracy are therefore

$$V^p(D) = \frac{Bh^p + (A - B)H}{1 - \beta} \text{ and } V^r(D) = \frac{Bh^r + (A - B)H}{1 - \beta}.$$

We simplify the exposition by restricting attention to the area of the parameter space where democratization prevents a revolution; i.e., $V^p(D) > V^p(R)$. Thus, we assume

ASSUMPTION 2.

$$Bh^p + (A - B)H > \mu^h AH/\lambda.$$

To determine whether the elite can prevent a revolution with the redistribution strategy, let $\hat{V}^p(\mu^h, E|q)$ be the maximum utility (as a function of the parameter q) that can be given to the poor without extending the franchise. This maximum utility is achieved by setting $\tau^r = \hat{\tau}$ in (2). Therefore, combining (1) and (2), we obtain

$$(3) \quad \hat{V}^p(\mu^h, E|q) = V^p(\mu^h, E, \hat{\tau}) = \frac{Bh^p + (A - B)H - \beta(1 - q)(A - B)(H - h^p)}{1 - \beta}.$$

If $\hat{V}^p(\mu^h, E|q) < V^p(R)$, then the maximum transfer that can be made when $\mu = \mu^h$ is not sufficient to prevent a revolution. Notice that $\hat{V}^p(\mu^h, E|q = 1) = V^p(D) > V^p(R)$ by Assumption 2, and $\hat{V}^p(\mu^h, E|q = 0) = Ah^p/(1 - \beta) + (A - B)(H - h^p) < V^p(R)$ by Assumption 1. Moreover, $\hat{V}^p(\mu^h, E|q)$ is monotonically and continuously increasing in q . Therefore, there exists a unique $q^* \in (0, 1)$ such that $\hat{V}^p(\mu^h, E|q^*) = V^p(R)$. Finally, note that $V^r(\mu^h, E, \tau^r)$ is decreasing in τ^r , and for all τ^r , it is greater than $V^r(D)$. The latter

fact follows because when there is a democracy, $\tau = \hat{\tau}$ in all periods, whereas with the power in the hands of the elite, $\tau \in (0, \hat{\tau}]$ whenever $\mu = \mu^h$, but $\tau = 0$ when $\mu = \mu^l$. From this discussion, the following characterization of the equilibrium follows immediately.

PROPOSITION 1. Suppose that Assumptions 1 and 2 hold. Then, for all $q \neq q^*$, there exists a unique pure strategy Markov Perfect Equilibrium such that

1. If $q < q^*$, then the revolution threat will be met by franchise extension. More formally, the equilibrium is $\sigma^r(\mu^l, E) = (\phi = 0, \tau = 0)$, $\sigma^r(\mu^h, E) = (\phi = 1, .)$. $\sigma^p(\mu^h, E | \phi = 0, \tau) = (\rho = 1)$, $\sigma^p(\mu^h, E | \phi = 1, .) = (\rho = 0, \tau = \hat{\tau})$, and $\sigma^p(\mu^h, D) = (\tau = \hat{\tau})$.
2. If $q > q^*$, then the revolution threat will be met by temporary redistribution. More formally, $\sigma^r(\mu^l, E) = (\phi = 0, \tau = 0)$, $\sigma^r(\mu^h, E) = (\phi = 0, \bar{\tau}^r)$, where $\bar{\tau}^r \in (0, \hat{\tau})$ is defined by $V^p(R) = V^p(\mu^h, E, \bar{\tau}^r)$, and $\sigma^p(\mu^h, E | \phi = 0, \tau) = (\rho = 0)$ for all $\tau \geq \bar{\tau}^r$. Also, off the equilibrium path, $\sigma^p(\mu^h, E | \phi = 0, \tau) = (\rho = 1)$ for all $\tau < \bar{\tau}^r$, $\sigma^p(\mu^h, E | \phi = 1, .) = (\rho = 0, \tau = \hat{\tau})$ and $\sigma^p(\mu^h, D) = (\tau = \hat{\tau})$.

Starting with the elite in power, if $q < q^*$, then the rich set a zero tax rate when $\mu = \mu^l$, and extend the franchise when the state switches to $\mu = \mu^h$. The poor play the optimal strategy of initiating a revolution if the state is $\mu = \mu^h$ and the franchise has not been extended. After the franchise extension, the median voter is a poor agent and sets the tax rate $\tau = \hat{\tau}$. In contrast, when $q > q^*$, the rich can prevent a revolution by redistributing. So in the state $\mu = \mu^l$, they set $\tau = 0$, and when $\mu = \mu^h$, they set a tax rate, $\bar{\tau}^r$, just high enough to prevent a revolution. This strategy combination is the unique pure strategy (Markov Perfect) Equilibrium of the game.

In the Appendix we show that even without the restriction to Markov Perfect Equilibria, similar results obtain: revolution can be stopped with temporary redistribution when $q > q^{**}$, where $q^{**} < q^*$. So franchise extension can be prevented for a larger set of parameter values, but if $q < q^{**}$, the elite can prevent a revolution only by extending the franchise.

There are two main conclusions to be drawn from this analysis.

First, even though the elite face a lower future tax burden with redistribution than under democracy, they may prefer to extend the franchise. This is because when $q < q^*$, redistribution

is not sufficient to prevent a revolution. With q low, the revolution threat is transitory, so the poor realize that they will only receive transfers for a short while. Redistribution when $\mu = \mu^h$ can therefore be viewed as a noncredible promise of future redistribution by the elite. Unconvinced by this promise, the poor would attempt a revolution. The revolution is only prevented by franchise extension.

Second, perhaps paradoxically, a high q makes franchise extension less likely. A high q corresponds to an economy in which the poor are well organized, so they frequently pose a revolutionary threat.⁸ A naive intuition may have been that in this case franchise extension would be more likely. This is not the case, however, because with a frequent revolutionary threat, future redistribution becomes *credible*. This result may explain why in the nineteenth century, Germany, the country with the most developed socialist party at the time, instituted the welfare state without franchise extension, while Britain and France extended the franchise. We return to this issue in Section IV.

The comparative statics with respect to inequality, μ^h , and B also deserve a brief discussion. As Assumption 1 shows, a certain level of inequality is necessary for the revolution constraint to bind. So a very equal society may never democratize, or democratize with considerable delay because there is relatively little social unrest. More interestingly, in a more unequal society, it is also more difficult to stave off a revolution without democratization.⁹ Specifically, there exists a threshold level of inequality, \bar{h}^r/h^p for given q , such that if $h^r/h^p < \bar{h}^r/h^p$, then the revolution can be prevented by temporary redistribution, but if $h^r/h^p > \bar{h}^r/h^p$, the only way to prevent a revolution is democratization.

An increase in μ^h also tightens the revolution constraint. When $q < q^*$, this has no effect at first, since the threat of revolution already ensured democratization. However, if μ^h increases further, Assumption 2 would be violated, so that revolution could not be prevented even with democratization. In con-

8. Alternatively, if μ^l is sufficiently greater than zero, then even in this state, the elite have to redistribute to the poor. In this case, a high value of μ^l would also lead to the same result.

9. To see this, take the equation $\hat{V}^p(\mu^h, E|q^*) = V^p(R)$, divide both sides by H , and totally differentiate. This gives $dq^*/d(h^p/H) < 0$, so when inequality increases, q^* also increases. Equivalently, fix q , and this equation defines a critical level of inequality, \bar{h}^p/h^r . Since $V^p(R)$ increases faster in the level of inequality than $\hat{V}^p(\mu^h, E|q^*)$, with inequality greater than \bar{h}^p/h^r , revolution cannot be prevented by temporary redistribution.

trast, if $q > q^*$, a higher level of μ^h affects fiscal policy by forcing the elite to choose a more redistributive policy to prevent revolution. If it increases further, it may induce democratization. An increase in B limits the taxes that can be set on the rich. So if B increases, it becomes harder to prevent a revolution with temporary redistribution because the level of taxes that can be set during this period are lower. Moreover, if B increases further, Assumption 2 would be violated once again, leading to a revolution along the equilibrium path. The general principle that follows from this discussion is that revolutions are harder to prevent in societies where democracy creates only limited gains for the poor.

III. A MODEL OF GROWTH AND INEQUALITY DYNAMICS

The previous section established that the elite may be forced to extend the franchise. We now explore the implications of political reform for growth and inequality.

Now each agent (or forward-looking dynasty) can decide to invest in order to increase their capital further. In particular, the capital of agent i at time $t + 1$, given his stock h_t^i at t , is

$$(4) \quad h_{t+1}^i = \delta e_t^i h_t^i,$$

where $\delta > 1$ and e_t^i is an indicator that takes the value 1 if there is investment. Investment costs an amount Z and is indivisible. This nonconvexity in the investment technology implies that very poor agents will be unable to accumulate, as in Galor and Zeira [1993]. From the budget constraint, we have that $c_t^i + e_t^i Z \leq y_t^i$. An individual earns income Ah_t^i in market activity, or Bh_t^i in home production as in the previous section with $B < A$. We also assume that investment in capital is always profitable (but $\beta\delta < 1$), and furthermore, $Bh_0^r + (A - B)(\lambda h_0^p + (1 - \lambda)h_0^r) > Z$, which implies that the rich have enough income to invest, even if they were taxed at the maximum tax rate $\hat{\tau} \equiv (A - B)/A$. The revolution threat is parameterized as before; the poor receive a fraction μ_t of the total resources, $H_t = \lambda h_t^p + (1 - \lambda)h_t^r$, and share it between themselves. μ_t takes the value μ^h , with probability q , and $\mu^l = 0$, with probability $1 - q$.

We continue to limit our attention to pure strategy Markov Perfect Equilibria. Moreover, because equilibria are now more involved, instead of giving a comprehensive taxonomy, we focus on democratic development paths (see Acemoglu and Robinson [1997] for nondemocratic development paths).

Consider the case where $Z > Ah_0^p$, so that the poor cannot accumulate unless they receive transfers. When there is no threat of a revolution, there is no taxation. As a result, the rich accumulate capital, and their income grows at the rate $\delta - 1$, while the poor are unable to accumulate. Therefore, income inequality increases steadily. This continues until the threat of revolution occurs. At this point, there are two possibilities.

First, the rich could extend the franchise. After democratization, the median voter is a poor agent and sets the maximum tax rate $\hat{\tau}$. Then, the dynamics of inequality and income depend on whether this transfer from the rich to the poor is sufficient to enable the poor to accumulate capital. Suppose that the threat of revolution occurs for the first time at t . Then the crucial condition is whether

$$(5) \quad Bh_0^p + (A - B)H_t \geq Z,$$

where $H_t = \lambda h_0^p + (1 - \lambda)h_t^r$ is the total capital of the economy at time t . This expression follows from the fact that a poor agent keeps $(1 - \hat{\tau})$ of his income, Bh_0^p , and receives a fraction $\hat{\tau}$ of total income in the economy, $(A - B)H_t$. If condition (5) holds, then the transfer is sufficient to push the income of the poor above the accumulation threshold, and the poor start accumulating, and inequality drops.¹⁰ This will be the mechanism leading to the Kuznets curve in our economy. We assume that this condition holds at time $t = 0$, and since H_t grows continuously, it will hold at all future dates too.¹¹

To determine whether the rich will be forced to extend the franchise, we once again compare the return from a revolution with the return from receiving temporary redistribution under continued elite control. If the poor undertake a revolution, they receive

$$(6) \quad V^p(R|h_t^p, h_t^r) = \frac{\mu^h AH_t}{\lambda(1 - \beta\delta)} - \frac{Z}{1 - \beta},$$

10. Notice that this condition does not guarantee that the poor will be able to accumulate without transfers. Also, because we have a linear economy, after the poor start accumulating, inequality drops discretely and remains constant. In a previous version of the paper [Acemoglu and Robinson 1997], we analyzed the case with a convex production function, where inequality falls steadily after franchise extension.

11. Even if inequality (5) does not hold at time t , it will eventually hold, since the rich will continue to accumulate, so h_t^r will grow steadily. At the point where this condition holds, say time \hat{t} the poor will start accumulating. Then, inequality would drop after franchise extension, but increase again after that, until time \hat{t} is reached when it will level off.

where $H_t = \lambda h_0^p + (1 - \lambda)h_t^r$ and $h_{t+1}^r = \delta h_t^r$, and we used the fact that after a revolution, they take over the productive resources of the rich, losing a fraction $1 - \mu^h$ of all the capital in the process. We have also assumed that the transfer of resources during a revolution is sufficient for the poor to accumulate.¹²

The rich can try to defuse the threat of revolution using temporary redistribution instead of franchise extension. To determine whether this is possible, we write the value functions for the poor under elite control. When there is no threat of revolution,

$$V^p(\mu^l, E|h_t^p, h_t^r) = Ah_t^p - e_t^p Z \\ + \beta[qV^p(\mu^h, E|h_{t+1}^p, h_{t+1}^r) + (1 - q)V^p(\mu^l, E|h_{t+1}^p, h_{t+1}^r)],$$

where $h_{t+1}^r = \delta h_t^r$ and $h_{t+1}^p = \delta^{e_t^p} h_t^p$. Whether $e_t^p = 0$ or 1 depends on whether the poor are above the accumulation threshold; i.e., whether $Z > Ah_t^p$.

The value function for the poor when the state switches to μ^h depends on the elite's strategy. We are interested in the maximum utility that they can give to the poor without extending the franchise \hat{V}^p , so we suppose that they set the maximum tax rate $\hat{\tau}$, then

$$\hat{V}^p(\mu^h, E|h_t^p, h_t^r) = Ah_t^p - Z + \hat{T}^p \\ + \beta[q\hat{V}^p(\mu^h, E|h_{t+1}^p, h_{t+1}^r) + (1 - q)V^p(\mu^l, E|h_{t+1}^p, h_{t+1}^r)],$$

where $\hat{T}^p \equiv \hat{\tau}A(H_t - h_t^p) \equiv (A - B)(H_t - h_t^p)$ is the net transfer they receive, and $h_{t+1}^r = \delta h_t^r$, and this time $h_{t+1}^p = \delta h_t^p$ also, because the poor are receiving the transfer \hat{T}^p .

An analysis similar to the previous section immediately implies that there exists q_t^* , such that if $q < q_t^*$, then the elite cannot prevent a revolution by redistributing temporarily.¹³ Moreover, it is straightforward to verify that $V^p(\mu^l, E|h_t^p, h_t^r)$ increases in h_t^r faster than $V^p(R|h_t^p, h_t^r)$; intuitively, as h_t^r increases, revolution becomes more attractive for the poor. Therefore, q_t^* is

12. A sufficient condition for this is $\mu^h(\lambda h_0^p + (1 - \lambda)h_0^r)\lambda > Z$. If this holds at $t = 0$, then it also holds at all subsequent dates. We are also assuming that the equivalent of Assumption 2, $Bh_t^p + (A - B)H_t > \mu^h AH_t/\lambda$ holds at all t , that is franchise extension is sufficient to prevent the revolution. In the absence of this assumption, when inequality increases substantially, democratization would be insufficient to prevent the revolution, so the elite may initiate redistribution before this point in order to prevent a future revolution.

13. Notice that V^p is continuously increasing in q and as $q \rightarrow 0$, the poor will never receive any more transfers, so prefer a revolution. Therefore, there exists a critical value of q such that when q is below this threshold, temporary redistribution is not attractive enough to prevent a revolution.

decreasing in t : as inequality increases, the threat of revolution becomes harder to prevent by redistribution alone. Let us define the first time when $q_t^* < q$ as \bar{t} .

When turbulence arises at some time after \bar{t} , the outcome is democratization and the Kuznets curve. Inequality has increased considerably by this time, so the elite cannot prevent social unrest by temporary measures alone and are forced to extend the franchise.¹⁴ In the resulting democracy the median voter is a poor agent and votes for redistributive taxation at the rate \hat{t} . With this transfer from the rich, the poor start accumulating as well, and inequality, which had been increasing since $t = 0$, drops.¹⁵ In our view, this case gives a stylized description of the experiences of Britain, France, and Sweden. In these instances, the threat of revolution forced democratization, and inequality, which was previously increasing, started to decline, in large part due to major redistributive efforts including increased taxation, investment in the education of the poor, and labor market reform (see the discussion in Section IV).

Alternatively, if the revolution threat occurs before $t' < \bar{t}$, the elite can prevent it with temporary measures because inequality is limited. If $Z > \delta Ah_0^p$, the one-period temporary redistribution is not sufficient to enrich the poor sufficiently that they can accumulate without transfers. As a result, when the revolution threat goes away, transfers stop, and inequality grows again. A further period of turbulence may then lead to democratization, and to a Kuznets curve type behavior. We believe that this type of "delayed" Kuznets curve may capture the sequence of events in the German case. In Germany, social unrest was initially met with redistribution, but eventually the shock of the First World War created further unrest and induced democratization (in 1919). Redistribution increased, and inequality fell after this date.

14. It might sometimes be optimal for the elite to collectively reduce accumulation in order to avoid the future threat of revolution (and hence democratization). Nevertheless, because each member of the elite chooses their optimal saving independently, such an equilibrium never arises in our model.

15. The implications for growth are also straightforward; before franchise extension only the rich accumulate, so the overall growth rate of the economy is low, but after democratization, all agents accumulate, so the economy grows at the rate $\delta - 1$. The result that democratization increases growth is not general. It depends on whether the gains from relaxing the credit constraints, emphasized, for example, by Galor and Zeira [1993] and Bénabou [2000], exceed the costs of distortionary taxation, emphasized by, among others, Alesina and Rodrik [1994] and Persson and Tabellini [1994]. Interestingly, in their empirical work using historical data, Persson and Tabellini find that the growth rate increases when a greater fraction of the population are enfranchised.

If, in contrast, $Ah_0^p < Z < \delta Ah_0^p$ and the threat of revolution occurs at $t' < \bar{t}$, then the outcome is a nondemocratic development path. In this case, the temporary redistribution at time t' is sufficient to enable the poor to accumulate steadily, and inequality remains constant thereafter. After the poor start accumulating, the return to revolution at time t in the state μ^h is

$$V^p(R|h_t^p, h_t^r) = \frac{\mu^h A H_t}{\lambda(1 - \beta\delta)} - \frac{Z}{1 - \beta},$$

where $H_{t+1} = \delta H_t$ because both the rich and poor accumulate. On the other hand, the return to remaining in a nondemocratic regime at time t in the state μ^h is

$$\hat{V}^p(\mu^h, E|h_t^p, h_t^r) = \frac{A h_t^p}{1 - \beta\delta} - \frac{Z}{1 - \beta} + \hat{T}^p + \frac{q\beta \hat{T}^p}{1 - \beta\delta},$$

where $\hat{T}^p \equiv \hat{\lambda}A(H_t - h_t^p)$ is the maximum net transfer to the poor. Intuitively, the poor accumulate irrespective of whether they receive transfers or not. Overall, they receive a net transfer \hat{T}^p today, and expect to receive it in the future with probability q , but take into account that it will be larger in the future because of income growth. Therefore, both $\hat{V}^p(\mu^h, E|h_t^p, h_t^r)$ and $V^p(R|h_t^p, h_t^r)$ (net of $Z/(1 - \beta)$) grow at the rate $\delta - 1$, and the revolution constraint does not change over time. Since the threat of revolution at time t' could be prevented without democratization, future revolution threats can also be prevented by redistribution. Therefore, in this case, because inequality stops growing and the gains from it are shared between the rich and the poor, social unrest is weak, and democratization is avoided forever, or at least delayed considerably. This nondemocratic development path may be relevant to South Korea and Taiwan. Both countries used land redistribution early on in response to the threat of revolution fueled by the communist regime in China.¹⁶ They were subsequently relatively equal and did not democratize until much later. A related case is Indonesia after 1965, where the rural strength of the communists induced large-scale fiscal redistribution and

16. Ch'en Ch'eng, the governor of Taiwan at the time of the reforms, for example, explains this as follows ". . . the situation on the Chinese mainland was becoming critical and the villages on the island were showing marked signs of unrest and instability. It was feared that the Communists might take advantage of the rapidly deteriorating situation" [Haggard 1990, p. 82]. The extent of the land redistribution in both countries was quite large. For example, in the 1949 reform, South Korea redistributed 50 percent of the agricultural land, while the Taiwanese land reforms of 1949–1953 redistributed 24.6 percent of the land [Ho 1978].

major educational reforms. These reforms led to rapidly falling inequality in the 1970s and 1980s and a long-lived nondemocratic regime.¹⁷

IV. HISTORICAL PERSPECTIVE

In this section we discuss the historical evidence related to the extension of the franchise. Our objective is to provide a preliminary assessment of whether our theory gives a good description of the salient features of Western democratization. We outline the major events of the period and document the importance of the threat of revolution. We then discuss three alternative hypotheses that could explain why the franchise was extended and the evidence in favor of and against these approaches. In the final two subsections we discuss other empirical implications of our model. In all cases, our most detailed evidence is from Britain, but we also discuss evidence from France, Sweden, and Germany.¹⁸

A. The Threat of Revolution and Franchise Extension

Britain. In Britain the franchise was extended in 1832, and then again in 1867 and 1884 (and later in 1919 and 1928 when all women were finally allowed to vote).¹⁹ When introducing the electoral reform to the British parliament in 1831, the prime minister Earl Grey said “There is no-one more decided against annual parliaments, universal suffrage and the ballot, than am I . . . The Principal of my reform is to prevent the necessity of revolution. . . . I am reforming to preserve, not to overthrow” (quoted in [Evans 1983]). This view of political reform is shared by modern historians such as Briggs [1959] and Lee [1994]. For example, Darvall [1934] writes: “the major change of the first three decades of the nineteenth century was the reform of Parliament by the 1832 Reform Act . . . introduced by the Whigs . . . as a measure to stave off any further threat of revolution by extending the franchise to the middle classes.” In fact, the years preceding the electoral reform were characterized by unprece-

17. The Gini coefficient in Indonesia was 0.41 during the 1970s, and fell to 0.30 during the 1980s [Campos and Root 1996].

18. The evidence from the U. S. democratization experience is more mixed. In a previous version of this paper [Acemoglu and Robinson 1997], we discussed why the U. S. case is different.

19. In our formal model, only a one-time franchise extension was possible. The model can be extended by introducing more heterogeneity (such as a middle class) to incorporate multiple gradual extensions.

dented political unrest, including the Luddite Riots from 1811–1816, the Spa Fields Riots of 1816, the Peterloo Massacre in 1819, and the Swing Riots of 1830 (see Stevenson [1979] for an overview). The reforms that extended political power from a narrow elite to larger sections of the society were immediately viewed as a success not because of some ideal of enlightenment or democracy, but because the threat of revolution and further unrest were avoided (see Lee [1994]).

Although the 1832 Reform Act reduced property and wealth restrictions on voting and increased the total electorate to 813,000, the majority of British people (the remaining 23 million) could not vote, and the elite still had considerable scope for patronage, since 123 constituencies, the “rotten-boroughs,” contained less than 1000 voters. There is also evidence of continued corruption and intimidation of voters until the Ballot Act of 1872 and the Corrupt and Illegal Practices Act of 1883. These practices were reversed later in the process of increased representation, which gained momentum with the Chartist movement during the 1830s and 1840s (see Briggs [1959]). The response of the elite to the Chartist movement was again one of preventing further unrest. For example, during the 1850s Lord John Russell made several attempts to introduce reform arguing that it was necessary to extend the franchise to the upper levels of the working classes as a means of preventing the revival of political radicalism. But as Lee [1994, p. 137] notes, “The House of Commons was largely hostile to reform because, at this stage, it saw no need for it.”

This had changed by 1867, largely due to a sharp business cycle downturn that caused significant economic hardship and increased the threat of violence. Lee writes, “as with the first Reform Act, the threat of violence has been seen as a significant factor in forcing the pace (of the 1867 Reform Act); history was repeating itself.” This interpretation is supported by many other historians—for example, Trevelyan [1937] and Harrison [1965]. The Act was preceded by the founding of the National Reform Union in 1864 and the Reform League in 1865, and the Hyde Park riots of July 1866 provided the most immediate catalyst. Searle [1993, p. 225] argues that, “reform agitation in the country clearly did much to persuade the Derby ministry that a Reform Bill, any Reform Bill, should be placed on the statute book with a minimum of delay.” As a result of these reforms, the total electorate was expanded from 1.4 million to 2.52 million, and working-class voters became the majority in all urban constituencies. The

electorate was doubled again by the Reform Act of 1884, and the Redistribution Act of 1885 removed many remaining inequalities in the distribution of seats (see Wright [1970]). Once again social disorder appears to have been an important factor behind the 1884 act, as put by Hayes [1982], "At the bottom the course of events in mid-November reflected the importance of the battle out of doors."

Other Countries. In France the 1830 revolution led to a highly restricted democratic regime where property restriction limited the electorate to about 0.75 percent of the population (see Cole and Campbell [1989]). The collapse of the Orleanist monarchy in the 1848 revolution led to the Second Republic with the introduction of universal male suffrage in 1849 (see Collier [1999], Chapter 2, p. 10). The effect of this was cut short, however, first by restrictions on voting rights introduced in 1850, disenfranchising 2.8 million men, and then by the coup of Louis Napoleon in 1851. Historians split this period into two phases: the "authoritarian" phase from 1852 to 1860 and the "liberal" phase from 1860 until the defeat of the French armies in the Franco-Prussian War of 1870. The defeat in the war led to further unrest (in particular, the Paris Commune) and to the collapse of the regime, making way for the Third Republic (see Zeldin [1958], Plessis [1985], and Price [1995]).

The history of modern democracy in Germany starts with the 1848 revolution when nearly all German states significantly increased popular participation in government, again in the face of revolutionary pressures (see Blackbourn [1998], Chapter 3). The effects of this democratization were strongly mitigated by institutional restrictions, however. This regime featured a three-class voting system and was controlled initially by Junker landlords, and after the 1870s by the coalition of "iron and rye;" the parliament could not appoint ministers or discuss foreign policy, and voting was oral. Although after 1870 all adult males over the age of 25 had the right to vote, voting was controlled in rural areas by the landlords (see Gosnell [1930] and Goldstein [1983]). As Abrams [1995, p. 10] puts it, during this period "the German Empire was, in theory, a constitutional monarchy, yet in practice it was governed by a Prussian oligarchy." The final emergence of German democracy, the Weimar Republic, in 1919, was in response to the very severe threat of social disorder and revolution triggered by the collapse of the German armies on the Western

Front in August 1918 (see, for example, the classic account in Gerschenkron [1943] and also Mommsen [1981]).

It is interesting to note at this point that although democratization in Germany did not occur during the nineteenth century, social unrest was certainly as strong there as it was in Britain and France. While there were no strong socialist parties in Britain and France and trade unions were of little importance, the Social Democratic Party in Germany was by far the largest left-wing party in Europe at that time, and labor movement was strong.²⁰ At first sight, one might expect franchise extension in Germany rather than in Britain and France. Our model, in contrast, predicts that the German elite should have had more flexibility in dealing with social unrest by promising future redistribution, which was the pattern in practice.²¹

In Sweden democracy arrived via a series of gradual franchise extensions, starting in 1866 with the creation of a bicameral parliament with First and Second Chambers. Universal male suffrage was introduced in 1909 in the First Chamber, but true parliamentary government arrived only in 1918, when the political power of the Conservative Party and the monarchy were limited, once again an outcome of unusual turbulence spurred by the end of the First World War and by the severe economic crisis (see Rustow [1955] and Verney [1957]). Tilton [1974, p. 567] argues that "neither [of the first two reform acts] passed without strong popular pressure; in 1866 crowds thronged around the chamber while the final vote was taken, and the 1909 reform was stimulated by a broad suffrage movement [and] a demonstration strike." The reform in 1909 had been preceded by strikes and demonstrations, and even though Sweden was not a participant in the First World War, the revolution in Russia and the situation in Germany forced the concession of democratic rights. In 1917 the Liberals and Social Democrats formed a coalition government and proposed full male suffrage, but this was defeated by the Conservative-dominated Second Chamber. Collier [1999, Chapter 3, p. 9] explains that "it was only after the economic crisis of 1918 and

20. See the essays in Katznelson and Zolberg [1986] on the relative strength of the working classes in Germany in the nineteenth century. For example, Nolan begins her chapter [p. 354] by stating, "Although Britain experienced the first industrial revolution and France developed the first significant socialist associations, Germany produced the largest and best-organized workers' movement in the late nineteenth century."

21. Williamson [1998], for example, writes that "the main aim of [Bismarck's] welfare program was to avoid revolution through timely social reform and to reconcile the working classes to the authority of the state."

ensuing worker protests for democracy led by the Social Democrats that the Reform Act was passed. Indeed, in November 1918 labor protests reached such a point as to be perceived as a revolutionary threat by Sweden's Conservative party and upper classes." Tilton [1974, p. 568] summarizes the consensus view of historians succinctly; "Swedish democracy had triumphed without a revolution—but not without the *threat* of a revolution" (italics in original).

B. Alternative Theories of Democratization

We have documented that the threat of revolution, often spurred by wars and depressions, was important in leading up to the political reforms of the period. Although this account supports our main thesis, it is useful to review alternative theories and to investigate whether they receive support from the events surrounding the reform process.

A1. *The Enlightenment.* This theory is that the elite extended the franchise because their social values changed. In particular, the Enlightenment movement may have made it harder for the elite to view a society in which a large fraction of the population had no representation as fair and just.

It is undoubtedly true that changes in social values have a real effect on political reform. For example, the enfranchisement of women in Britain in 1919 and 1928 appears mostly due to changes in the society's approach to women.²² Although the suffragette movement in Britain organized demonstrations and social unrest,²³ these did not constitute a serious threat of revolution. This is not inconsistent with our approach. Since extending voting rights to women does not have major consequences for redistribution from the rich to the poor, social values rather than redistributive motives should be more important.

In contrast to the enfranchisement of women, it is hard to argue that changing social values were the major driving force behind the extensions of the franchise to the poorer segments of the society. The main argument against the importance of social

22. In France women were allowed to vote in 1945, while in Germany and Sweden mass enfranchisement included women from the beginning.

23. These included destroying letter boxes, cutting telegraph lines, and bombing railway stations and even Lloyd George's house. Emmeline Pankhurst, a leader of the suffragette movement, understood the importance of social unrest in forcing reform and argued, "Parliament never grants reform unless it is terrorised . . . Terrorism is, in fact, the only argument that parliament understands" (quoted in Jorgensen-Earp [1997, p. 48]).

values is the timing of democratization. Since the ideas of the Enlightenment and the writings of Rousseau and Paine were widely disseminated in Europe by the early decades of the nineteenth century, it is hard to understand the timing of democratization, and especially why these ideas influenced the political elite in Sweden and Germany long after they had persuaded the elite in France and Britain. Rather, the time pattern of democratization is tied much more closely to that of industrialization, inequality, and political unrest. Perhaps more important, the evidence discussed in this and the previous section suggests strongly that franchise extension was forced on the elite and not willingly given as this theory would suggest. Overall, we therefore conclude that changes in social values are unlikely to have been the major factor behind the extension of the franchise to the poorer segments of the society.

A2. *Political Party Competition.* This theory is inspired in part by the British experience, where the competition between Disraeli and Gladstone was a major factor in political reform. According to this theory, politicians have a strong preference to stay in power, and may extend the franchise with the expectation that the newly enfranchised will return the favor by voting for their party (see, for example, Himmelfarb [1966], who argues this for the British case and the general discussion in Collier [1999]).

In 1866 Russell's Liberal government proposed a relaxation of the property restrictions on voting. This measure was defeated by a coalition of Conservatives led by Disraeli and right-wing Liberals, the "Adullamites," who thought the extension too generous. The Liberal government then collapsed, and Disraeli formed a minority administration (290 to 360). Disraeli's first move was to introduce a less generous franchise extension, but he realized that this would not gain majority support. He then switched to a proposal even more radical than the initial Liberal measure, which passed by gaining the support of a heterogeneous group of Liberals. Disraeli can then be argued to have extended the franchise that he first opposed to encourage the newly enfranchised to vote Conservative.

In our view, however, the evidence does not support this interpretation. The Conservatives lost the 1868 election immediately after having passed the franchise extension (and the Liberal party lost the election of 1885). So if the strategy was aimed at winning elections, it was clearly a failure. Although the fact that the Conservatives lost the election does not prove that franchise

extension was not aimed at winning elections, other aspects of this reform also appear inconsistent with a strategy of maximizing Conservative votes. In particular, as the result of the split over the Corn Laws, support for the Conservative party was essentially concentrated in rural areas, with Tory landowners exerting substantial control over the electorate in the absence of a secret ballot. The reform measure passed under Disraeli increased the voting population by only 45 percent in counties compared with 145 percent in the boroughs, effectively ensuring a Conservative defeat in the following elections.²⁴

Overall, the most plausible interpretation of the interparty rivalry in Britain during the 1860s and 1870s was that, while both parties regarded the extension of voting rights as inevitable due to mounting social pressure, they clearly saw that it could be structured in ways which were more or less advantageous to themselves. This created a complicated "endgame." Cowling [1967, p. 89] argues that the Conservative party supported Disraeli in 1867 because if the Act failed, "the Liberals might then do precisely what Derby and Disraeli had striven in 1866 to prevent their doing—carry Reform on their own lines." The one triumph of the 1867 reform for Disraeli was the fact that it limited the redistribution of seats away from the counties to the boroughs, which would have been even more substantial otherwise. This strategy reduced the impact of the franchise extension for the Conservative party and its constituency. Smith [1967, p. 97] also agrees and argues that "Derby and Disraeli . . . in 1867, did not determine to trust the people, or put their faith in a Conservative democracy. They did what they felt they had to do, to satisfy the popular agitation and reconcile the upper strata of the working classes to the established political system."

The party competition theory does not fit well with any of our other cases. With army units in revolt and the economy collapsing in Germany in 1918–1919, the former political elite attempted to prevent revolution by generating a transition that would cause minimal damage to its interests. In France there were more distinct subsets within the elite. Orleanists and Legitimists formed separate factions within the Monarchist camp, and the

24. The notion that the Liberals and Conservatives were prepared to extend the franchise simply to keep their party in power is also not completely persuasive. Between 1859 and 1865 the Liberal prime minister Palmerston, who was opposed to franchise extension, and the Conservative leader Lord Derby, colluded so that the issue of suffrage would never be raised in parliament [Lee 1994, p. 138].

Republicans, though democratic, were basically middle class and were not in favor of universal male suffrage in 1848. When the Monarchy collapsed in 1848, these groups had to agree to the demands of the revolutionaries. In support of this view, Aminzade [1993, p. 35] argues, "French workers, mainly artisans, constituted the revolutionary force that put the Republican party in power in February 1848 . . . and working class pressure from the streets of Paris forced liberal Republican leaders . . . to reluctantly concede universal male suffrage." The same is true for the period after 1870. The conflict at the time, particularly the Commune, forced democracy along the lines of 1849. Although no group within the elite was committed to universal male suffrage, they were forced to reintroduce it.

The Swedish case is perhaps the most similar to Britain. In 1906 the Liberal party's first ever government fell after failing to pass a law introducing universal male suffrage. The reform measure of 1909 was then passed (in 1907) by the Conservative government under Lindman. As with Disraeli in 1867, "Lindman and his Conservative ministry that took office a year after the Liberals' 1906 failure saw an opportunity to pass a political reform on its own terms" [Collier 1999, Chapter 3, p. 9]. Although male suffrage was conceded in one house, the Conservatives kept control over the other through the maintenance of multiple voting and taxpayer suffrage. As with the British case, this pattern of events was not the result of attempts by the Conservatives to gain votes, but rather a damage limitation exercise in the face of mounting social pressure for a full democracy.

A3. Middle Class Drive. This story is similar to the previous one, except that economic incentives, rather than political competition, are the driving force. The main point can be illustrated with a very simple model related to our analysis of Section II. Suppose that there are three groups, lower, middle, and upper class, with respective fractions, λ_L , λ_M , and λ_U and human capital, h_L , h_M , and h_U . Let $\bar{h} = \lambda_L h_L + \lambda_M h_M + \lambda_U h_U$ be the average human capital. Suppose that when the lower classes are excluded from the political process, the middle class are in power with probability υ , and when the political process includes the lower classes, the lower classes are in power with probability υ_L , and the middle classes are in power with probability υ_M . As before, only linear taxes and universal subsidies are allowed, and the group in power can also decide whether to extend the franchise (if it was not extended before). It is now straightforward to see that if $\bar{h} > h_M$,

the middle-classes prefer taxation to no taxation, and also realize that this is also what lower classes want. So if $v_L + v_M > v$, that is, if franchise extension increases the likelihood of taxation, the middle classes will extend the franchise when they control power during the prefranchise era. In other words, in this theory, the middle classes extend the franchise because they hold power only temporarily and realize that by including the lower classes in the political processes, they will shift the balance of power in their favor.

There seems little evidence in Britain that the middle classes, other than a few radical MPs such as Bright, elected in the large industrial cities, wanted to allow the working classes to vote. It was well understood that this would lead to redistribution at their expense. As Lord Elcho, a leading Adullamite put it, democracy meant "handing the country over to the Trade Unions and the rule of numbers, enabling the poor to tax the rich" (quoted in Cowling [1967], p. 51). Cowling further notes [p. 54], "Disraeli and Gladstone were attempting to push members of parliament into doing what they had no *desire* to do . . . far from wishing to extend the franchise [they were] intensely suspicious of any attempt to do so" (*italics in original*). Viscount Cranborne, a leading Conservative, saw the reform struggle, as we do, as "a battle not of parties, but of classes" and "a portion of the great political struggle of our century—the struggle between property . . . and mere numbers" (quoted in Smith [1967], pp. 27–28).

This theory does not seem to explain the other instances of democratization either. In Germany in 1918–1919 the middle classes were either part of the coalition supporting the Monarchy, or moderates within the Social Democratic party. Even the Social Democrats saw suffrage extension as likely to help the more left-wing parties, like the Spartacists. In France the middle class could best be associated with the Republican party, which opposed universal male suffrage. In Sweden the Liberal party partially represented the middle classes, and entered into a tactical coalition with the Social Democrats to force full democracy on the intransigent Conservatives and the Monarchy. Nevertheless, the Liberals in Sweden were very different from the Liberals in Britain, and included more left-wing groups and workers (see Verney [1957], p. 138). The struggle for democracy in Sweden should therefore be seen as a battle between the Conservatives and two left-wing parties, where the victory of the working-class

parties was secured by the large social unrest following World War I.

C. Democratization and Redistribution

Our approach also predicts that after franchise extension, there should be increased redistribution. We now briefly discuss the evidence related to the relationship between democratization and redistribution in the four cases of franchise extension discussed above.

In Britain the Reform Acts of 1867–1884 were a turning point in the history of the British state. In 1871 Gladstone reformed the civil service, opening it to public examination, thus making it meritocratic. Liberal and Conservative governments introduced a considerable amount of labor market legislation, fundamentally changing the nature of industrial relations in favor of workers. During 1906–1914 the Liberal Party, under the leadership of Asquith and Lloyd George, introduced the modern redistributive state into Britain, including health and unemployment insurance, government-financed pensions, minimum wages, and a commitment to redistributive taxation. As a result of the fiscal changes, taxes as a proportion of National Product more than doubled in the 30 years following 1870, and then doubled again. In the meantime, the progressivity of the tax system also increased [Lindert 1989].

Meanwhile, the education system, which was either primarily for the elite or run by religious denominations during most of the nineteenth century, was opened up to the masses; the Education Act of 1870 committed the government to the systematic provision of universal education for the first time, and this was made free in 1891. The school-leaving age was set at eleven in 1893; then in 1899 it increased to twelve, and special provisions for the children of needy families were introduced [Mitch 1993]. As a result of these changes, the proportion of ten-year olds enrolled in school that stood at a disappointing 40 percent in 1870 increased to 100 percent in 1900 [Ringer 1979, p. 207]. Finally, the reform act of 1902 led to a large expansion in the resources for schools and introduced the grammar schools which subsequently became the foundation of secondary education in Britain.

In France, as in Britain, democratization coincided with important educational reforms. During the Second Empire there was a significant expansion of government support for education; illiteracy fell from 39 percent to 29 percent of adults, and the

primary school enrollment rate increased from 51 percent to 68 percent [Plessis 1985, Table 14, p. 100]. In 1881 the government abolished fees in public primary schools, and in 1882 it introduced seven years of compulsory education for children. The primary enrollment rate increased from 66 percent in 1863 to 82 percent in 1886. The "liberal" phase of the Second Empire saw significant labor market legislation with strikes legalized in 1863, and unions were finally officially tolerated in 1868. Moreover, central government expenditure as a percentage of GDP increased by one-third from 9.4 percent in 1872 (a figure itself inflated by the war) to 12.4 percent in 1880 [Flora 1983].

In Germany the large increase in redistribution in the 1920s was initiated by the Weimar state [Flora 1983]. Also in Sweden, major redistribution appears to have started only after democratization. Lindert's [1994] data show that before 1920 there was no redistribution at all in Sweden, while after this date it jumped up sharply.

Overall, we can summarize our discussion, especially the part about the relationship between democratization and educational reforms, by quoting Easterlin [1981]: "to judge from the historical experience of the world's 25 largest nations, the establishment and expansion of formal schooling has depended in large part on political conditions and ideological influences" and "a major commitment to mass education is frequently symptomatic of a major shift in political power and associated ideology in a direction conducive to greater upward mobility for a wider segment of the population."²⁵

D. The Kuznets Curve

Our theory also suggests that the Kuznets curve for income inequality should be caused by franchise extension, so we may expect the peak of the Kuznets curve to coincide with major democratic reforms. To get an idea of whether this might be a valid explanation for the Kuznets curve, we looked at the behavior of income inequality for Britain, France, Germany, and Sweden.

Data on income inequality for the nineteenth century are not extremely reliable. Nevertheless, a number of studies using different data sources on Britain reach the same conclusion: inequality increased substantially during the first half of the

25. See Engerman, Mariscal, and Sokoloff [1998] for historical evidence from the Americas that democratization tends to induce educational expansion.

nineteenth century, then started falling in the second half. The turning point appears to be sometime after 1870 [Williamson 1985, Table 4.2]. This picture is also consistent with the findings of Crafts [1989], and of Lindert [1986] on wealth inequality, but is not completely uncontroversial [Feinstein 1988]. A similar pattern also emerges from earnings inequality data reported in Williamson [1985, Table 4.2], where the Gini coefficient increases from 0.4 in 1823 to 0.627 in 1871 and falls to 0.55 in 1881 and 0.443 in 1901. It appears therefore that inequality peaked approximately at the time of the major political reforms, and fell sharply after the extension of the franchise.

Data for other countries are even scarcer. Morrisson [1999] surveys the existing evidence and argues that Germany, France, and Sweden all went through a Kuznets curve. In Germany inequality rose during the nineteenth century, and most researchers place the peak around 1900. For example, Kuznets [1963] finds that the income share of the top 5 percent went from 28 percent in 1873–1880 to 32 percent in 1891–1900, stayed at 32 percent during 1901–1910, declining to 31 percent in 1911–1913. Dumke [1991] finds the same income share to be 28.4 percent in 1880, rising to 32.6 percent in 1900, and falling to 30.6 percent in 1913. During the Weimar Republic, inequality fell rapidly. Kraus [1981] records that by 1926 the income share of the top 5 percent had fallen by 6.2 percent. Overall, Morrisson [1997] argues that the Kuznets curve in Germany peaked in 1900, went flat, and started to fall in the 1920s. This date corresponds closely to the major democratization of 1918–1919.

For France, Morrisson [1991, 1997] argues that inequality rose until 1870, with the income share of the top 10 percent peaking at around 50 percent. Inequality started to fall, however, in the 1870s, and in 1890 the income share of the top 10 percent was down to 45 percent, falling further to 36 percent by 1929. The major political reforms of 1860–1877 in France are therefore approximately around the peak of the Kuznets curve. Finally, Söderberg [1987, 1991] records that income inequality grew in Sweden, peaking just before the First World War, leveling off or falling slightly during the 1920s, and then falling rapidly thereafter. Once again, there is a close correspondence between the decline in inequality and the extension of the franchise. Overall, therefore, in Britain, France, Germany, and Sweden, the peak of the Kuznets curve appears to have followed democratization, which is in line with the mechanism proposed in this paper.

V. CONCLUDING REMARKS

This paper has offered a simple model of democratization and political reform, and investigated the implications for the dynamics of growth and inequality. The two main contributions of this paper are (1) it explains why the rich elite may want to extend the franchise, even though this implies higher taxation in the future; and (2) it offers a new explanation for the presence of a Kuznets curve in the development experience of Western societies.

Our emphasis on political reform as a way of changing future political equilibria may have a number of other applications. Other reforms, as well as constitutional restrictions, also affect the future balance of political power. It appears, for example, that in the Federalist papers, Madison and Hamilton introduced the separation of powers as a way of restricting future policies (in fact, Madison was very worried about the security of property rights under the Articles of Confederation; see Madison [1961]). Similarly, relations with international institutions can act as commitment devices to future policies. Also, redistributive programs often differ in how easily they can be reversed. In most countries, for example, social security entitlement programs appear to be more difficult to cut than other redistributive programs. This raises the question of whether there was a commitment motive in play when these programs were instituted.

Finally, as already noted, there are also major differences in the form of redistribution across countries. In Britain, education increased substantially after the franchise due to increased government support. In contrast, in Germany early redistribution was via the welfare state. It is important to understand what might cause these differences, and whether the same forces are also important in shaping the differences in the extent and form of redistribution we observe today.

APPENDIX: NON-MARKOVIAN EQUILIBRIA
IN THE MODEL OF SECTION II

We now analyze the model of Section II without the restriction to Markovian strategies. More specifically, we look for subgame perfect equilibria. We will find that there exists a cutoff probability of state μ^h , $q^{**} < q^*$ such that when $q > q^{**}$, there will be redistribution without democratization which prevents a revolution. In contrast when $q < q^{**}$, the only equilibrium will feature the extension of the franchise when $\mu_t = \mu^h$.

First, note that if the poor initiate a revolution at time t , then effectively the game ends with $V^p(R) = \mu_t AH / \lambda(1 - \beta)$. Therefore, in any subgame perfect equilibrium, $\sigma_t^p(\mu^h, E | \cdot, \cdot) = (\rho = 1)$ only if $V^p(R) > \bar{V}_t^p$, where \bar{V}_t^p is the payoff of the poor in the continuation game at time t without a revolution.²⁶ This immediately implies that $\sigma_t^p(\mu^l, E | \cdot, \cdot) = (\rho = 0)$. Next, note that after $\phi_t = 1$, and ignoring revolution, the elite are down to their minimum payoff, since $\tau = \hat{\tau}$ in all future periods. Therefore, $\sigma_t^p(\mu^h, E | \phi = 1, \cdot) = (\rho = 1)$ only if $V^p(R) > V^p(D)$. Assumption 2 ensures that this inequality never holds. Thus, in any subgame perfect equilibrium, $\sigma_t^p(\mu^h, E | \phi = 1, \cdot) = (\rho = 0)$ irrespective of the history of the game up to this point. So we have pinned down all of the strategies by the poor other than $\sigma_t^p(\mu^h, E | \phi = 0, \tau^r)$. Now consider this.

Let $\bar{V}_t^p(\mu^h, E | \phi = 0, \tau^r)$ be the continuation payoff of the poor, conditional on $\phi = 0$ and τ^r , when they play $\rho_t = 0$. Then, in any subgame perfect equilibrium, $\sigma_t^p(\mu^h, E | \phi = 0, \tau^r)$ will only put positive probability on $\rho = 1$ if $V^p(R) \geq \bar{V}_t^p(\mu^h, E | \phi = 0, \tau^r)$ and will play $\rho = 1$ with probability 1 if $V^p(R) > \bar{V}_t^p(\mu^h, E | \phi = 0, \tau^r)$.

Suppose that $q < q^*$. Recall from Proposition 2 that in this case, there were no Markov Perfect Equilibria with redistribution and no democratization. Let $\tau^r(\mu_t)$ be the tax rate chosen by the elite in state μ_t at time t . Consider the following candidate equilibrium strategy combination. For the elite, $\sigma_t^r(\mu^h, E) = (\phi_t = 0, \tau_t^r = \hat{\tau})$ and $\sigma_t^r(\mu^l, E) = (\phi_t = 0, \tau_t^r = \bar{\tau})$, where $\bar{\tau} \leq \hat{\tau}$. For the poor, $\sigma_t^p(\mu^j, E | \phi_t = 0, \tau_t^r) = (\rho = 0)$ if $\tau^r(\mu_s) \geq \hat{\tau}$ if $\mu_s = \mu^h$ and $\tau^r(\mu_s) \geq \bar{\tau}$ if $\mu_s = \mu^l$, for all $s \leq t$, and $(\rho = 1)$ otherwise. Then, the payoffs in this candidate equilibrium are given by

$$(7) \quad \hat{V}^j(\mu^h, E) = (1 - \hat{\tau})Ah^j + \hat{\tau}AH + \beta[q\bar{V}^j(\mu^h, E) + (1 - q)\bar{V}^j(\mu^l, E)]$$

$$(8) \quad \hat{V}^j(\mu^l, E) = (1 - \hat{\tau})Ah^j + \hat{\tau}AH + \beta[q\bar{V}^j(\mu^h, E) + (1 - q)\bar{V}^j(\mu^l, E)]$$

for $j = p$ and r . Now define $\bar{\tau}$ such that $\bar{V}^p(\mu^h, E) = V^p(R)$. $\bar{\tau} < \hat{\tau}$ exists by Assumption 2. Therefore, the above strategies are the best response for the poor in all subgames. Next, we need to check whether they are the best-response for the elite. Clearly, if the elite reduce the tax rate in state (μ^h, E) , this will immediately cause a revolution. Thus, $\sigma_t^r(\mu^h, E) = (\phi_t = 0, \tau_t^r = \hat{\tau})$ is optimal conditional on the history up to time t characterized by $\tau^r(\mu_s) \geq \hat{\tau}$ if $\mu_s = \mu^h$ and $\tau^r(\mu_s) \geq \bar{\tau}$ if $\mu_s = \mu^l$, for all $s \leq t$. In contrast, if the elite

26. We are now using σ_t instead of σ , which stands for σ conditional on the public history of the game up to time t . The public history includes all past actions (but not mixing probabilities when these are used).

deviate from $\sigma_t^r(\mu^l, E) = (\phi_t = 0, \tau_t^r = \hat{\tau})$ to $\sigma_t^r(\mu^l, E) = (\phi_t = 0, \tau_t^r = 0)$, this will not cause a revolution immediately. It will only do so when the state changes to (μ^h, E) . But in this case, the elite can play $\sigma_t^r(\mu^h, E) = (\phi_t = 1)$ and as we saw above, the best-response of the masses is always $\sigma_t^p(\mu^h, E | \phi = 1, \cdot) = (\rho = 0)$ irrespective of the history of the game up to this point. The payoff to the elite from following this deviant strategy starting in the state (μ^l, E) is

$$V_d^r(\mu^l, E) = Ah^r + \beta [qV^r(D) + (1 - q)V_d^r(\mu^l, E)].$$

Therefore, the above candidate equilibrium strategy combination is a subgame perfect equilibrium if and only if $V^r(\mu^l, E)$ given by (7) and (8) is greater than or equal to

$$V_d^r(\mu^l, E) = \frac{Ah^r + \beta qV^r(D)}{1 - \beta(1 - q)}.$$

It is straightforward that if $q = q^*$, $\bar{V}^r(\mu^l, E) > V_d^r(\mu^l, E)$ and at $q = 0$, $\bar{V}^r(\mu^l, E) < V_d^r(\mu^l, E)$. Also, $\bar{V}^r(\mu^l, E)$ falls faster in q than $V_d^r(\mu^l, E)$. So there exists q^{**} , such that for all $q < q^{**}$, $\bar{V}^r(\mu^l, E) < V_d^r(\mu^l, E)$, and there exists no equilibrium with redistribution and democratization.

Finally, when $q > q^*$, the Markov Perfect Equilibrium with redistribution and no democratization continues to be a subgame perfect equilibrium, and with reasoning similar to the above, we can construct others that feature some redistribution both in state $\mu_t = \mu^h$ and $\mu_t = \mu^l$, but all these equilibria have the same structure of keeping the poor just indifferent between revolution and no revolution in the state (μ^h, E) —thus giving the same payoffs to the elite and the poor.

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