The political class and redistributive policies[*]

Alejandro Corvalan[†]   Pablo Querubin[‡]   Sergio Vicente [§]

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Abstract

We study the effect of the composition of the political class on the size of government. First, we use a citizen-candidate model to show that the extension of suffrage may be inconsequential for government spending when there are pre-existing stricter requirements for holding office. We then test this prediction empirically using data from the 13 U.S. original colonies. We find that the extension of the franchise did not affect government spending or the composition of the political class. However, the subsequent elimination of economic qualifications to hold office increased government spending and enriched the class heterogeneity of state legislatures.

[†]Universidad Diego Portales. Email: alejandro.corvalan@udp.cl.

[‡]New York University. Email: pablo.querubin@nyu.edu.

[§]Universidad Carlos III de Madrid. E-mail: sergio.vicente@uc3m.es.

1 INTRODUCTION

Democratization has often been perceived as a fundamental stage in political and economic development. A large strand of political economy literature predicts that the extension of the franchise should lead to increased government spending and redistribution (Meltzer and Richard, 1981; Acemoglu and Robinson, 2000). However, recent studies suggest that the characteristics of the electorate may not be the only determinant of economic policies; the preferences of those who hold office may also play a major role.[1]

At the beginning of the nineteenth century, when democratization took off in many countries, elites controlled the decision-making process by imposing restrictions not only on who could vote, but also on who could run as candidates. Strict economic qualifications to run for office were a widespread practice in the United States, Europe and Latin America.[2] In fact, restrictions on who can hold office have been pervasive throughout the history of democracy. In Ancient Greece, the Athenian lower classes (the *thetes*) were allowed to participate in the assembly (the *Ekklesia*) around 600 BC, but it was not until Pericles– around 460 BC–that the thetes were also allowed to hold office. Right after the French Revolution, the 1791 constitution conceded universal male suffrage but imposed severe economic restrictions to become eligible as a candidate.[3] In a very recent example, the massive protests in the streets of Hong Kong in 2014– the "Umbrella Revolution"–were ignited by the decision of the Chinese Communist Party to grant voting rights to Hong Kong's citizens while keeping control over the pool of candidates that can participate in elections.[4]

This paper studies the effect of the composition of the political class on the size of government. That is, we bring attention to the identity of politicians, and not only to the identity of the electorate, as important determinants of economic policies in democratic societies. In this sense, we take a broader approach to the study of democratization by bringing together suffrage and candidate eligibility restrictions. We show theoretically that the extension of suffrage may be inconsequential for government spending when there are pre-existing stricter requirements for holding office, because the new voters may be forced to choose between the same candidates. We then test this prediction empirically using data from the 13 US original colonies.

In the first part of the paper, we construct a simple theoretical model to study the interplay between suffrage and eligibility requirements. We build on the citizen-candidate

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[1]For work on how the identity of officeholders may affect policies see Chattopadhyah and Duflo, 2004 for the role of gender, Pande, 2003 for the role of ethnicity, and Besley et al., 2011 for the role of education.

[2]For US and Europe, see Miller (1900) and Cotta and Best (2004), respectively. For Latin America, see Annino (1995), Posada-Carbo (1996) and Sábato (1999)).

[3]We thank David Stasavage for suggesting this example.

[4]We thank Bill Easterly for suggesting this example.

model (Osborne and Slivinski, 1996; Besley and Coate, 1997) by adding an income threshold for voting, and a different income threshold, typically higher, for running for office. The key player in this polity turns out to be the *decisive citizen*, which is either the median of the constituency – when this citizen is eligible – or the minimum-income citizen who is allowed to run. We use this basic set up to illustrate the policy consequences of *exogenous* reforms that extend the franchise and reduce qualifications for office.[5] The key implication of our theory is that when these reforms are sequential, the effect of the first reform on equilibrium policy is ambiguous, yet we should observe a change in policy following the second reform. In particular, in the presence of stringent eligibility restrictions, major increases in redistributive policies may not follow directly after suffrage extensions, but only once the eligibility requirements are also softened.

To test this prediction, we focus on the 13 original colonies of the United States during the period 1776-1900. This is an ideal setting in which to test our theory thanks to the variation in the timing in which different states eliminated economic requirements for suffrage and candidacy. Availability of state-level government spending data for the 19th Century is unusual and this also makes the U.S. a unique setting for our empirical analysis. While restrictions on voting and candidacy were a widespread phenomenon across the world, data limitations would make it unfeasible to study this phenomenon in a cross-country setting.

We first construct a novel data set on economic eligibility restrictions for the 13 original colonies during our period.[6] The data is coded from a report by historian Frank H. Miller in 1900, which describes legal qualifications for office in the American colonies and States, from the seventeenth to nineteenth centuries (Miller, 1900). In particular, the report provides a comprehensive list of property requirements for state legislators and governors and, more importantly, when those requirements were finally abolished. We combine this information with well-known data on voting qualifications provided by Keyssar (2000). Next, we estimate panel data regressions using state-fixed effects and state-specific time trends to test the effect of removing property restrictions on suffrage and candidate eligibility during 1788-1900 on various policy outcomes. First, our results provide evidence of a positive effect of eliminating candidate eligibility requirements on government size, as measured by state expenditure per capita. We show that this result is driven by an increase in the social components of spending, such as welfare and education. By contrast, the effects of suffrage extension on all of these variables are statistically insignificant, and small in magnitude.

Next, in order to corroborate that changes in these policy outcomes are driven by the

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[5]In this paper we are not dealing with the causes of such democratic reforms. In the next section we summarize the literature regarding this topic.

[6]As explained below, this is not possible for U.S. states other than the original 13 colonies.

mechanism proposed in our model (namely, the election of politicians with a less elite background) we use biographical and census data to code a rich set of personal characteristics for a sample of state senators. Most notably, we use the full count file of the 1850 U.S. Population Census to find the real estate wealth of this sample of state senators. This is precisely the most relevant variable for our purposes, given that most of the eligibility requirements during this period made explicit reference to minimum property wealth requirements. We show that eliminating eligibility requirements led to the election of a more diverse – less elite – set of state senators as measured by variables such as education, occupation, real estate wealth and previous relatives in office (dynastic status). We also show that eliminating eligibility requirements led to an increase in political competition as measured by the number of candidates running and the margin of victory in gubernatorial races.

Our empirical results must be interpreted cautiously, as the timing of suffrage and eligibility reforms was not exogenous, and may confound the effect of other time-varying state characteristics or reforms. However, all of our empirical evidence is consistent with the basic predictions of our model: where there are strict eligibility requirements, extending the right to vote does not affect policy outcomes unless eligibility restrictions are also removed. Once eligibility restrictions are removed, the decisive citizen (politician) becomes poorer, which leads to the adoption of more redistributive policies – as captured by increased government spending on welfare and education. The fact that we find an effect not only on government spending but also on the elite background of elected politicians and on political competition, gives us further confidence that our estimates capture the effect of eligibility reforms and not of other potential confounding variables or reforms during that period.

We should also note that in our empirical analysis we focus on the elimination of *property* requirements for both office and suffrage. However, other suffrage restrictions based on race (prior to the Civil War) or gender (prior to 1919, at the federal level, or late 19th Century in some states) as well as poll taxes, literacy tests and residence and citizenship requirements remained in place or were subsequently enacted in some U.S. states. These restrictions disenfranchised women and poorer segments of the population (Naidu, 2012). Similarly, other restrictions on candidacy based on citizenship and age remain in place for many elected offices. Analyzing the impact of the enactment or removal of other types of restrictions on suffrage and eligibility is beyond the scope of this study. Nonetheless, following Engerman and Sokoloff (2005), we believe that these property restrictions had very important redistributive consequences and their elimination substantially increased the pool of eligible candidates and the size of the electorate.

Finally, our article does not minimize the importance of extending the franchise in the process of democratization, but highlights the fact that universal suffrage is a *necessary* but

not *sufficient* condition for redistributing power away from the elite and for the enactment of redistributive policies.

In the next section we describe the related literature. In Section 3 we present the theory and explore the implications of the model. In Section 4 we discuss the data and the empirical strategy, while Section 5 provides quantitative evidence for the effect of suffrage and eligibility reforms on policy outcomes, the elite background of politicians, and political competition. Section 6 concludes.

2   RELATED LITERATURE

This paper aims to bridge the literatures on suffrage extension and political selection (Besley, 2005). A prolific body of work has explored the determinants of the expansion of suffrage in the context of the Downsian paradigm (Meltzer and Richard, 1981; Acemoglu and Robinson, 2000; Bourguignon and Verdier (2000), Llavador and Oxoby (2005) and Gradsterin (2007). According to this approach, electoral competition induces candidates to implement the median voter's preferred policy (Downs, 1957), even when candidates may themselves be policy motivated (Wittman, 1977; Calvert, 1985). Other authors, including Lizzeri and Persico (2004) and Galor et al. (2009), use alternatives to the median voter model, but their mechanisms do not address the role of restrictions on running for office. Indeed, most (if not all) of the literature on suffrage democratization assumes that the identity of the politician is irrelevant. As far as we can tell, our work is the first attempt to study democratization as a process that includes both the extension of suffrage and the access to political office.

A separate literature has emphasized the role of candidate selection – and, more specifically, politician characteristics – on implemented policies. For instance, McGuire and Ohsfeldt (1989) provide convincing evidence that the delegates who drafted the U.S. constitution at the Federal Convention of 1787 voted according to their personal economic interests. The recent works by Pande (2003), Chattopadhyah and Duflo (2004) and Besley et al. (2011) study the importance of the race, gender and education of the political class, respectively, on a variety of economic outcomes.

Two recent papers discuss the relationship between extending the right to vote and politicians' socio-economic backgrounds. Larcinese (2014) studies the political consequences of introducing quasi-universal suffrage in Italy in 1912 and concludes that it did not affect the parliamentary representation of the aristocracy and traditional elites. Likewise, Berlinski et al. (2014), using evidence from the Second Reform Act in the UK in 1867, shows that this reform extended the franchise but it had no causal effect on the political representation of the British aristocracy in parliament. These findings are consistent with the predictions

of our model and our empirical evidence on the socio-economic identity of U.S. politicians. However, we extend the analysis to include both suffrage and candidate eligibility reforms to show that the second type of reform mattered for political selection.

Our paper also builds on and contributes to the literature on persistence and institutional change. It is generally acknowledged that nineteenth-century elites maintained their power even in the face of democratic reforms (DalBo et al., 2009; Querubin, 2012; Acemoglu et al., 2013). Acemoglu and Robinson (2008) suggest that ruling elites may have extended their *de jure* power via institutional reforms, but that they managed to maintain control in practice as a result of their *de facto* economic dominance. The more recent work by Dippel (2014) and Bertocchi and Arcangelo (2014) provides evidence to support this argument. In this paper we explore a complementary explanation. By leveraging institutions that regulated candidate eligibility, elites may have extended the suffrage without any real transfer of political power. Following the terminology in Acemoglu and Robinson (2008), elites were able to fully offset one *de jure* reform using another *de jure* reform. Naidu (2012) documents the presence of other types of offsetting *de jure* suffrage reforms. The enactment of poll taxes and literacy tests in some Southern states post-1870 can be understood as an attempt to disenfranchise black males that had been given the right to vote by the 15th Amendment following the Civil War.

Finally, our work is related to the empirical literature that studies the relationship between extending the franchise and government spending. We note that the results regarding the consequences of suffrage extension are, at the very least, inconclusive. Peltzman (1980) finds no effect for a cross-section of countries. Husted and Kenny (1997) show that extending the franchise in the United States led to a sharp increase in welfare spending but had no effect on other policy items, but Aidt et al. (2006) finds the opposite result in a cross-section of European countries. In recent works, Vernby (2013) finds that the effect of enfranchising non-citizens in Swedish municipalities was the increase of spending on education and social services, while Falch et al. (2014) find null causal effects of franchise extensions in Norwegian municipalities. Finally, for the case of England during the 19th Century, Chapman (2016) finds evidence of a non-linear effect between franchise extensions and government spending, with initial extensions to the middle class leading to increases in the size of government but further extensions to poorer citizens leading to a reduction.

3 THEORY

We build on the "citizen-candidate" model (Osborne and Slivinski, 1996; Besley and Coate, 1997), in which politicians' identity is key to achieving policy credibility. We ana-

lyze the set of policy outcomes that arises as the result of political competition that takes place in the context of a constitutional design that establishes suffrage restrictions and candidate eligibility requirements. We use the model to evaluate the theoretical consequences of removing these constitutional restrictions.

3.1 Preferences, Constitution and Political Competition

The polity consists of a continuum of citizens of mass one endowed with heterogeneous income y, which is distributed over the interval $[0, +\infty)$ according to a distribution F with a density f. For analytical simplicity, we assume that F is continuous and strictly increasing. Hence, any truncated distribution with density $\frac{f(\cdot)}{1-F(y)}$ with support in $[y, +\infty)$, $y > 0$, has a unique median, which we denote by $m(y)$. We let μ denote the mean income of the population.

The citizenry has to decide on a proportional income tax $\tau \in [-1, 1]$ in order to subsidize a redistributive transfer to individuals.[7] We assume that redistribution entails a deadweight loss of $\mu \tau^2 / 2$.[8] The resulting indirect utility function of an individual with pre-tax income y given tax τ is given by:

$$V(y, \tau) = y \cdot (1 - \tau) + \mu \cdot \left(\tau - \tau^2 / 2 \right).$$

It follows that citizens' preferences for tax rates are single peaked, with bliss points given by $\tau(y) = 1 - y/\mu$. A tax $\tau > 0$ has a straightforward interpretation. An amount τy is raised from a citizen with income y to finance a lump-sum transfer of $\mu \cdot (\tau - \tau^2 / 2)$ to each and every citizen. If $\tau < 0$, then each citizen is taxed a lump-sum amount $\tau \mu$ that is used to issue a transfer $\tau y - \mu \tau^2 / 2$ to an individual with income y. Therefore, while positive taxation constitutes a transfer from the rich to the poor, negative taxes would cause the rich to obtain positive net transfers. Hence, all citizens with income below society's mean prefer positive taxation, whereas individuals with a pre-tax income above the mean prefer a negative tax.

The polity chooses its representatives through elections. The constitution $\Omega = (y_S, y_O)$ specifies both *suffrage restrictions* y_S and *candidate (office) eligibility restrictions* y_O. The constituency is formed by citizens with income $y \geq y_S$, that is, only individuals with income

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[7]We explain the meaning of a negative tax below, right after introducing individuals' indirect utility functions. The assumption that taxes may be negative is made to avoid truncations in citizens' indirect preferences for taxation. All qualitative results carry over to the case where τ is constrained to be non-negative.

[8]We have chosen this particular specification of the deadweight loss for exposition purposes. All results hold for any increasing and convex function, as long as the deadweight loss for low levels of taxation is sufficiently small.

above y_S have the right to vote. Clearly, universal suffrage corresponds to $y_S = 0$. Similarly, the constitution establishes that only citizens with $y \geq y_O$ are eligible to run for office.

The political process consists of two strategic stages and a payoff realization stage. At stage 1, any individual who meets the candidate threshold y_O may run for office. Entering the political race entails a cost $c > 0$ for the candidate. At stage 2, citizens with an income $y \geq y_S$ cast their votes for one of the candidates running for office. Voting is costless, and is assumed to be sincere whenever strategic choices of votes may be relevant. In case voters are indifferent among a given number of candidates, we assume that an equal split of the indifferent voters casts their ballots for each candidate.

After elections have taken place, the candidate with the highest number of votes is proclaimed the winner. If there is a tie, a balanced die is rolled to determine the winner from among the tying candidates. Finally, the winner implements a policy of her choice. As is usual in citizen-candidate set-ups, policy promises are not binding. Consequently, any winning candidate implements her preferred tax rate. In addition, the winning candidate gets a payoff of $b \geq 0$ as her spoils of office. At the end of this political competition game, each citizen enjoys their corresponding utility, given their income and the tax rate chosen by the elected candidate. An anarchical society, in which no citizen runs, entails a payoff of $-\infty$ for each citizen.

If the spoils of office were significantly larger than the cost of running, we would have several candidates with the same preferences running for election simultaneously. For instance, for $b = nc$, for some integer n, and no suffrage restriction or eligibility qualifications, a number n of median-voter citizens running for office constitutes an equilibrium. In order to reduce the number of cases to consider and to simplify our exposition, we impose the assumption that $b < 2c$. [9]

3.2 Equilibrium

In this section, we evaluate a scenario in which eligible candidates are members of society with an income $y \geq y_O$. Each citizen can choose whether to run for office. The payoff for a citizen with income y, when a candidate with ideal policy τ^* is elected, is $1_b \cdot b - 1_c \cdot c + V(y, \tau^*)$, where 1_c and 1_b are indicator functions taking a value of 1 if the citizen runs for office and wins the election, respectively, and a value of 0 otherwise.

The key player in this electoral competition game is the *decisive citizen* $\hat{y}$, who we define as $\hat{y} \equiv \max \{y_O, m(y_S)\}$. If the median of the constituency $m(y_S)$ meets the eligibility

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[9]For a detailed description of the equilibria for $b \geq 2c$ and no suffrage or eligibility restrictions, see Osborne and Slivinski (1996).

threshold y_O (that is, if $m(y_S) \geq y_O$), then the median would be the decisive citizen, that is $\hat{y} = m(y_S)$. Although electoral competition may lead to non-median policies, the median of the constituency would be decisive, in the sense that she could run for office and defeat any other candidate. If the median did not meet the eligibility threshold, that is if $m(y_S) < y_O$, the decisive citizen would simply be the closest individual to the median among the set of eligible citizens, that is $\hat{y} = y_O$.

We solve for the Nash equilibria of this game. Propositions 1 and 2 characterize the equilibria involving one and two candidates, respectively. Equilibria in which three or more candidates run for office do not exist.[10] All the proofs are in the Appendix.

Proposition 1. (One-candidate equilibria)
An equilibrum with a candidate y^* running for office exists. Define citizen $y_O^{\mathrm{sup}} \equiv y_O + \sqrt{2\mu(c-b)}$, citizen $m^{\mathrm{sup}}(y_O) \equiv \frac{1}{2}(y_O + y_O^{\mathrm{sup}})$, and denote the income distance between citizens y_O^{sup} and m^{sup} as $t^* \equiv m^{\mathrm{sup}}(y_O) - y_O = \frac{1}{2}\sqrt{2\mu(c-b)}$. Then: (i) if $c \leq b$, we have that $y^* = \hat{y}$; (ii) if $c > b$ and $m(y_S) \leq m^{\mathrm{sup}}$, then $y^* \in [y_O, y_O^{\mathrm{sup}}]$; (iii) if $c > b$ and $m(y_S) > m^{\mathrm{sup}}(y_O)$, then $y^* \in [m(y_S) - t^*, m(y_S) + t^*]$.

The following corollary is an immediate consequence of Proposition 1.

Corollary 1. (Decisive citizen)
There is always an equilibrium in which the decisive citizen's preferred policy $\tau(\hat{y})$ is implemented.

In order to get the intuition for Proposition 1, first consider the case in which $c \leq b$. In this case, the perks of office exceed the cost of running as a candidate. Hence, any citizen would be willing to run if he were guaranteed a victory. If $m(y_S) \geq y_O$, then the median voter could run and secure office. If, on the contrary, $m(y_S) < y_O$, the median voter could not run for office. However, a citizen with income y_O, the closest to the median within the pool of possible candidates, could run and defeat any opponent. Hence, the only citizen who would run is the decisive citizen $\hat{y}$, whether she is the median of the constituency or the least-income eligible citizen.

Consider now the case where $c > b$, that is, when the cost of running exceeds the benefits of office. We first argue that the decisive citizen $\hat{y}$ running for office constitutes a single-candidate equilibrium. Clearly, the decisive citizen $\hat{y}$ would win an election against any

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[10]The non-existence of many-candidates equilibria is a consequence of the assumption $b < 2c$.

opponent. Also, leaving the electoral race would entail an infinite loss to the decisive citizen. Hence, $\hat{y}$ belongs to the set of one-candidate equilibria.

In order to get intuition on the role of eligibility requirements in determining the types of equilibria that may arise, consider a case in which the median voter of the constituency cannot run as a candidate, that is, when $m(y_S) < y_O$. In this situation, a citizen y_O could win the election against any other citizen, for this is the closest citizen to the median. Nonetheless, other candidates may also run uncontested. In particular, y_O would not be willing to enter an electoral race against any candidate with income $y \in [y_O, y_O^{\text{sup}}]$, for the policy gains of defeating such a candidate would be lower than the cost of running, even when taking into account the perks of winning office. This is true for all citizens in the set $[y_O, y_O^{\text{sup}}]$, as their payoff incentives to run against any other member of the set are strictly lower than those of y_O. Hence, any citizen in the set $[y_O, y_O^{\text{sup}}]$ may be a sole candidate in equilibrium. We have defined y_O^{sup} such that y_O would be willing to compete against any candidate with income $y > y_O^{\text{sup}}$, which completes the characterization of the equilibrium set.

Let us move now to the case in which the set of eligible candidates includes the median of the constituency. There is still a role for the eligibility constraint when this requirement is not too loose. Consider the case in which $y_O \le m(y_S) \le m^{\text{sup}}(y_O)$ and observe that y_O could be defeated by any citizen in the set $(y_O, 2m(y_S) - y_O)$. By construction of $m^{\text{sup}}(y_O)$, no such citizen would enjoy a sufficiently high policy gain to run against y_O –or y_O^{sup}–, since $(y_O, 2m(y_S) - y_O) \subset [y_O, y_O^{\text{sup}}]$. Hence, even when the median of the constituency could run as a candidate, the set of equilibrium candidates is given by $[y_O, y_O^{\text{sup}}]$, and hence is completely determined by the eligibility restriction y_O.

The last case to consider is one in which the eligibility requirement plays no role at all. When $m(y_S) > m^{\text{sup}}(y_O)$, y_O can no longer be an equilibrium candidate. A citizen with income $y' = m(y_S) + t^*$ would find it profitable to run against y_O, for the policy gain from defeating such a distant contestant would more than compensate for the net cost of running as a candidate. Moreover, the median of the constituency would prefer y', as this citizen is closer to her in the policy space. Hence, the equilibrium set is determined by an interval around the median of the constituency, which is characterized by the fact that the citizens at the extremes of the interval would be willing to stay away from an electoral race in which the citizen at the other extreme was running uncontested, but would be strictly willing to run against any citizen located further away.

We now turn to the analysis of equilibria with more than one candidate. The following proposition characterizes such equilibria.

Proposition 2. Two-candidate equilibria

For any $t > 0$, define $y'(t)$ implicitly as the unique value satisfying $F\left(\frac{m(y_S)-t+y'(t)}{2}\right) = 1 - F\left(\frac{m(y_S)+t+y'(t)}{2}\right)$, and also define $\bar{t}$ implicitly as the unique value satisfying $F\left(\frac{m-\bar{t}+y'(\bar{t})}{2}\right) = \frac{1}{3} = 1 - F\left(\frac{m+\bar{t}+y'(\bar{t})}{2}\right)$. In addition, define the threshold $\underline{t} \equiv \frac{1}{2}\sqrt{2\mu(2c-b)}$. Then, there exists a two-candidate equilibrium if and only if $F\left(\frac{m-\underline{t}+y'(\bar{t})}{2}\right) \geq \frac{1}{3}$ and $y_O \leq m(y_S) - \underline{t}$. A two-candidate equilibrium entails citizens $y_l^* = m(y_S) - t$ and $y_r^* = m(y_S) + t$ running for office, for any $t \in T$. If $y_O \leq m(y_S) - \bar{t}$, then $T \equiv [\underline{t}, \bar{t}]$. If $m(y_S) - \bar{t} < y_O$, then $T \equiv [\underline{t}, m(y_S) - y_O]$.

In contrast to the Downsian paradigm, any two-candidate equilibrium entails some policy divergence among candidates.[11] This equilibrium property can be noticed at a glance in the expression for any two contesting candidates y_l^* and y_r^*, who must be t units to the left and right of the median of the constituency, respectively. Notice that, by constructing the equilibrium, we have that $t \geq \underline{t} > 0$. The reason for this divergence can be best understood by comparing the expected benefit of running against a candidate who has the same bliss policy as oneself. Since both candidates would implement the same policy if they won, the expected gain from defeating an opponent would simply be $\frac{b}{2} - c$, since running as a candidate would entail a cost of c and a benefit of b in the $\frac{1}{2}$-chance event that she wins. The same logic applies to candidates who are very close to each other. Hence, in any two-candidate equilibrium, the contestant citizens must be sufficiently far away from each other. The threshold $\underline{t}$ guarantees that the expected policy gain from running against a certain candidate is large enough to justify the cost of running. Notice that $\underline{t}$ is increasing in c and decreasing in b: the more costly it is to run as a candidate, and the less profitable the perks of office, the larger the minimum necessary distance between candidates.

Also, candidates must be symmetrically located around the median of the constituency in equilibrium. We show in the Appendix that any citizen y would be indifferent between the policies that would be implemented by any two candidates y_l and y_r if and only if $y = \frac{y_l+y_r}{2}$.[12] Hence, any two candidates must be symmetrically located around the median of the constituency, as otherwise the one closest to the median would win for certain. Notice that, since the cost of running c is strictly positive, any citizen running as a candidate must have an *ex ante* positive probability of winning.

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[11]This insight was set forth by Osborne and Slivinski (1996).

[12]This property greatly simplifies the analysis, as we can indistinctly work on the space of income or on the policy space. This particular characteristic is inherited from the preference structure that we assume, and does not hold in general. However, all qualitative results would hold for any single-peaked preferences, although different specifications would lead to more cumbersome characterizations of thresholds.

Candidates cannot be too distant, either. If they were further apart than $\bar{t}$ from the median of the constituency, a citizen with an income between y_l^* and y_r^* would have an incentive to enter the race and implement his favorite policy.

The constitutional qualifications for office y_O set an additional limit on the largest possible distance between any two candidates. The minimum income that a candidate may have is precisely y_O, so the maximum distance between the median and any candidate is additionally bounded by $m(y_S) - y_O$ when the eligibility constraint binds.

3.3 Theoretical Implications

The model offers several implications regarding the effects of extending suffrage and relaxing candidate eligibility requirements.[13] Figure 1 presents the space of constitutions as pairs $\Omega = (y_S, y_O)$ in the Euclidean plane.

*** FIGURE 1 HERE ****

The constituency median-voter mapping, $m(y_S)$, is a strictly increasing function of y_S, with an intercept at m, the unrestricted median. This mapping divides the constitutional space into two exhaustive and mutually exclusive sets.

We label the upper contour set of $m(y_S)$ the *eligibility-restriction set*. By construction, for any given constitution in the eligibility-restriction set, the decisive citizen is determined by the eligibility restriction, that is, $\hat{y} = y_O$. Similarly, we label the lower contour set of $m(y_S)$ the *suffrage-restriction set*. For any constitution in the suffrage-restriction set, the decisive citizen is determined by the suffrage restriction, namely $\hat{y} = m(y_S)$. We draw an *isodecisive line* as the loci of constitutions with the same decisive citizen $\hat{y}$. To draw an isodecisive line, one can start from any constitution $\Omega = (y_S, y_O)$ on the constituency median voter mapping $m(y_S)$. By construction, the decisive citizen is given by $\hat{y} = y_O = m(y_S)$. On the one hand, the horizontal line on the eligibility-restriction set passing through Ω corresponds to the set of constitutions with the same eligibility restriction y_O as Ω. Hence, all these constitutions have the same decisive citizen $\hat{y} = y_O$ as Ω, and are on the same isodecisive line. Conversely,

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[13]The model delivers multiplicity of equilibria, which makes it impossible to make determinate predictions about policy without selecting one equilibrium from among the set of equilibria. While we make no attempt to single out any particular equilibrium, in this section we focus on the decisive citizen $\hat{y}$ as a focal point in the sense of Schelling (1980) and analyze the implications of a change in the restrictions by assessing its effect on determining this decisive citizen. Notice that the decisive citizen is the unique equilibrium when $c \leq b$. When $c \geq b$, only citizens that are sufficiently close to the decisive citizen – in the sense that she would not be willing to run against them – can run in equilibrium. Moreover, the expected policy in any two-candidate equilibria is the decisive citizen's bliss policy.

any constitution in the eligibility-restriction set with $y'_O \neq y_O$ is such that the decisive citizen $\hat{y} = y'_O$ is different, so that it must belong to another isodecisive line. On the other hand, the vertical line on the suffrage-restriction set passing through Ω corresponds to the set of constitutions with the same suffrage restriction y_S as in Ω, and therefore lie on the same isodecisive line. Clearly, any other constitution in the suffrage-restriction set belongs to another isodecisive line. Hence, the isodecisive line map is given by inverted L-shaped lines intersected by the constituency median voter mapping.

Restrictions on political enfranchisement and eligibility were ultimately lifted by the end of the nineteenth century in the United States, as illustrated in Figure 2. That said, the sequencing of these reforms may have mattered. Constitutional reforms were typically sequential, beginning with extensions of the franchise and only later followed up by the elimination of eligibility requirements.[14]

We observe that for any constitution in the eligibility-restriction set, eligibility restrictions are binding (and thus determine the decisive citizen). Hence, relaxing eligibility requirements would result in a less wealthy decisive citizen. Yet starting from a constitution in the eligibility-restriction set, extending the suffrage would be inconsequential, because median voter policies would be precluded from implementation by restrictions on the set of potential candidates. A result of our model, given a sequential implementation of reforms, is that removing suffrage restrictions may be irrelevant for policy, while relaxing eligibility requirements should lead to more redistributive policies through the emergence of politicians who are less wealthy.

To illustrate this, consider a sequential reform of the constitution $\Omega^0 = (y_S^0, y_O^0)$, depicted in the eligibility-restriction set in Figure 1. We assume that Ω^0 is located within the eligibility-restriction set because the majority of nineteenth century U.S. state constitutions had much more stringent restrictions on who could run for office than on who could vote.

In the first stage, a constitutional reform would consist of removing all restrictions on voting, that is, $\Omega^1 = (y_S^1 = 0, y_O^1 = y_O^0)$. Eligibility restrictions would then be lifted in the second stage, so that $\Omega^2 = (y_S^2 = 0, y_O^2 = 0)$. While the second-stage reform changes the constituency median from $m(y_S)$ to m, the move from Ω^0 to Ω^1, which lies on the same isodecisive line, leaves the decisive citizen unchanged: $\hat{y}^1 = \hat{y}^0 = y_O^0$. Only when restrictions on eligibility are lifted does the median voter of the society as a whole become the decisive citizen.

Finally, our model also has implications for the extent of electoral competition. A two-candidate equilibrium only arises when eligibility restrictions are not binding. Hence, one

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[14]As depicted in Figure 2, 10 out of 13 states abolished suffrage and eligibility restrictions sequentially, while 3 (Pennsylvania, Virginia and Rhode Island) did so simultaneously.

should expect that relaxing qualifications for office may have caused fewer elections to be decided by races in which only one candidate ran. Moreover, eliminating these restrictions opens the door for a more polarized contested election between two candidates $\{y_l^*, y_r^*\}$, to the left and right of the median of the constituency, as described in Proposition 2.

4 DATA AND EMPIRICAL STRATEGY

In this section we present the data and our empirical strategy to test the theoretical implications of our model. We focus on the sample of the 13 original U.S. colonies from 1776-1900. We chose this sample and period for several reasons. First, at the beginning of the period all 13 colonies, with the exception of Pennsylvania, had in place some form of property requirements, for both the right to vote and the right to run for office. During this period these requirements were abolished at different points in time by the different colonies, giving us both cross-sectional and time-series variation to estimate the effect of eliminating these requirements on political and economic outcomes. In contrast, other states admitted to the union after the original 13 colonies, with the exception of Louisiana, Mississippi and Tennessee, did not include any property restrictions on suffrage or eligibility in their original constitutions, and thus do not exhibit any variation in our key explanatory variables of interest. Moreover, for Louisiana, Mississippi and Tennessee we only have government expenditure data starting after such property requirements had been abolished and thus we cannot perform a differences-in-differences analysis with them.

Second, we have access to data on various economic and political outcomes. While other countries also enacted electoral reforms during this period, the within-country variation and data availability make the United States a unique setting to study the sequential introduction of democratization reforms.

4.1 Data on Eligibility Property Requirements

The American 13 colonies implemented a variety of qualifications for both office and suffrage after independence. The restrictions included requirements on property, income, residence, citizenship, race, religion, education and gender amongst others. We focus here on property requirements for white adult males, coding these restrictions in each state at different points in time. The main source of information on candidate eligibility requirements is Miller (1900). To our knowledge, this is the first work in which data on candidate eligibility is used for a quantitative exercise. As for rules regarding suffrage, the most thorough source

is Keyssar (2000).[15]

From 1691 onwards, every colony stipulated property requirements for both voting and running for office. At first, the requirement for both suffrage and eligibility was a simple freehold. More specific requirements regarding the value and location of the freehold were later prescribed. These provisions were upheld in all of the colonies until the late eighteenth century. The American Revolution brought a modest improvement in the right to vote, although in more than one-third of the states, colonial restrictions on suffrage remained in force. On the other hand, qualifications for office became more stringent. The first state constitutions, adopted between 1776 and 1790, specified detailed candidate eligibility restrictions. Property requirements were typically increased and extended to other public offices that had not been restricted under colonial rule.[16] According to Charles and Mary Beard, "special qualifications, laid down in several constitutions, for governors, senators, and representatives, indicated that the revolutionary leaders were not prepared for any radical experiments in democracy".[17] J.R. Pole writes that the ruling class was "prepared to extend the suffrage when it suited their interest to do so, in the 1760's, but refused to take the same step when it would have opened the question of political power, a generation later".[18]

Table 1 describes voting and office qualifications for state senators, state legislators and governors, as stated in the original constitutions.[19] The table also indicates the year when such qualifications or other property restrictions were modified or abolished. Typically, property qualifications for office were much stricter than requirements for voting, in the sense that candidates had to own significantly more property than voters. Note that all states eliminated property requirements for voting at the same time as (or prior to) eliminating property requirements for office.[20] This implies that we cannot estimate the effect of eliminating eligibility requirements by holding constraints on suffrage constant. However, we can estimate the marginal effect of eliminating requirements for suffrage given restrictions on office as well as the marginal effect of eliminating restrictions on office given no restrictions on suffrage.

*** TABLE 1 HERE ***

The gradual elimination of both suffrage and eligibility requirements in the 13 colonies

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[15]Other relevant works include Porter (1918), McGovney (1949) and Williamson (1960).

[16]Miller (1900) p 105.

[17]Beard and Beard (1921) p 110.

[18]Pole (1962) p 637

[19]All 13 colonies enacted constitutions after 1776 except Connecticut and Rhode Island, where colonial charters remained in force.

[20]While states with no restrictions for governors are an exception to this rule, in all those states, governors were indirectly elected by the legislature and thus in practice were as constrained as legislators.

during the nineteenth century is depicted in Figure 2. The upper line illustrates the gradual elimination of property requirements on voting. Voting enfranchisement enjoyed considerable momentum after the American Revolution. By the end of the 1820s, almost 80 percent of the original states had eliminated property requirements for voting. However, the removal of eligibility restrictions for running for office, indicated by the bottom line, did not occur until after the Jackson administration in the early 1840s. In fact, 10 out of 13 states abolished suffrage and eligibility restrictions sequentially; the remaining 3 did so simultaneously.[21] We observe that there is substantial variation across states not only in the year in which suffrage requirements were eliminated, but also in the lag with which qualifications for office were eliminated. For example, Delaware was the first state to eliminate property requirements for voting in 1792, but it only eliminated requirements for office more than a century later in 1897. Rhode Island, on the other hand, only eliminated property requirements for voters in 1888 but eliminated qualifications for office in that same year.

*** FIGURE 2 HERE ****

Were eligibility restrictions binding? A gross estimate for all the colonies is that about 50 per cent of the adult white male population was voting.[22] Hence eligibility restrictions needed to exclude everyone except the 25 percent of the richer adult male population in order to be binding. Data on the distribution of property after independence indicate that 30 per cent of the white male population had £500 or more.[23] Given that the typical requirement for senators and governors was higher than that,[24] we can infer that eligibility restrictions were indeed binding, so that access to these offices was limited to the very rich. For representatives, it seems that the qualifications were less stringent.

As for the consequences of these restrictions, we observe that reforms put in place soon after the revolution had a varying impact on the average wealth of those in office. Before the revolution, state representatives were fairly rich. About 80 percent of the representatives were significantly wealthy (with property worth over £2,000), and indeed 40 percent of the total were considered very rich (more than £5,000).[25] The revolution reduced these percentages – to 55 and 20 percent, respectively which means that it democratized access to office,

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[21]Pennsylvania, Virginia and Rhode Island.

[22]According to Keyssar (2000), in 1790 between 60 and 70 percent of adult white males had the right to vote, but this calculation includes the frontier states, which had higher rates. Engerman and Sokoloff (2005) compute an average of 60 percent for the most concurred election before 1824, see Table 2.

[23]Main (1965)

[24]We present data for all states in the next section.

[25]These figures are for 6 states: New Hampshire, New York, New Jersey, Maryland, Virginia and South Carolina. Main (1966), Table I, p 405

at least at the level of state representatives. This was not necessarily the case for higher offices such as governors or state senators. For some states, most notably Maryland and South Carolina, the Senate was completely in the hands of the rich.[26] Overall, it seems that imposing candidate eligibility requirements in the United States was a preemptive strategy that had a limited disenfranchisement effect.

As noted earlier, following the elimination of property restrictions for suffrage, other restrictions based on race and gender as well as poll taxes, literacy tests and residence and citizenship requirements remained in place or were subsequently enacted in some states. In this sense, the elimination of property requirements for suffrage cannot be interpreted literally as the introduction of "universal suffrage". Nonetheless, these reforms did enfranchise very large segments of the population. For example, Engerman and Sokoloff (2005) argue that by 1820 more than half of adult white males were casting votes, except in those states that still retained economic requirements for voting. In this regard, these reforms constituted important extensions of the right to vote, even if they fell way short of enfranchising all poor men and women.

4.2 Data on Economic and Political Outcomes

Our outcome variables can be divided into three groups. First, we consider economic policy variables, in particular the aggregate level and composition of state government expenditures. We use the Inter-university Consortium for Political and Social Research (ICPSR's) "Sources and uses of funds in state and local governments, 1790-1915,"[27] which contains information pertaining to the financial records of state governments, for different categories of expenditures. We use *total state expenditures per capita* as our main dependent variable. Our resulting panel is unbalanced, since data are available for different sub-periods for different states.[28] Additionally, political reforms may affect the overall level as well as the composition of expenditure. In their studies of the consequences of the extension of suffrage, Husted and Kenny (1997) and Falch et al. (2014) found effects on several budget sub-items. Data for specific sub-categories tend to be available for a smaller sub-set of years, but we still have enough information to perform our analysis at a disaggregated level. We

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[26]Main (1967).

[27]Sylla, Richard E., John B. Legler, and John Wallis. *Sources and Uses of Funds in State and Local Governments, 1790-1915*: [UNITED STATES] [PARTS 1-64] [Computer file]. New York, NY: Richard E. Sylla, New York University/Athens, GA: John B. Legler, University of Georgia/College Park, MD: John Wallis, University of Maryland [producers], 1991. Ann Arbor, MI: Inter-university for Political and Social Research [distributor], 1993.

[28]State data on population are from the decennial U.S. censuses. For each year, we use total population from the closest census available. For example, all years 1866-1875 are assigned the population from the 1870 census.

provide separate estimations for the following items: education, social spending and welfare, government administration and public safety.

Our second group of outcome variables focuses on the socio-economic background of legislators. We use ICPSR's "Biographical characteristics of members of the United States Congress, 1789-1978,"[29] which compiles biographical information on U.S. members of Congress. While the members of Congress are not the main focus of our study, given that they were not subject to the eligibility requirements stipulated in each state's electoral rules, the biographical file reports whether a U.S. congressman held a state office prior to first entering Congress (but not the specific years in which he did so). For U.S. Congressmen who previously served in their respective state's Senate, we coded the exact year of entry to this office, using the "Biographical Directory of the U.S. Congress."[30] We focus on state senators, as this was the office for which eligibility requirements were the most binding. The final dataset includes the biographical characteristics of all state senators who subsequently occupied a seat in the U.S. Congress. While this may not be a representative sample of all state senators, we do not believe that sample selection in this case is a major concern for our purposes. Our analysis does not rely on comparing state senators who served in the U.S. Congress to those who did not. Rather, among the state senators in this selected sample, we want to compare the socio-economic characteristics of those elected before and after suffrage and eligibility requirements were eliminated in their respective states. Moreover, if only the wealthiest and most elite members of the state senate subsequently served in the U.S. Congress, this may, if anything, bias our results *against* finding that the elimination of eligibility requirements decreased the elite background of state senators.

The biographical data for our sample of state senators does not include wealth, but we can use several other variables as proxies for the elite background of the politicians. First, we have data on education that are interlinked with social class. We construct dummy variables for whether the state senator attended a private high school or had a college degree.[31] Second, we have information on whether the state senator had other relatives in Congress. We consider two measures of membership of a political dynasty: the total number of relatives in Congress and the number of relatives belonging to the previous or the same

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[29]McKibbin, Carroll L. *Biographical Characteristics of Members of the United States Congress, 1789-1978* [Computer file]. Compiled by Carroll L. McKibbin, University of Nebraska. 3rd ICPSR ed. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [producer and distributor], 1979.

[30]http://bioguide.congress.gov/biosearch/biosearch.asp

[31]See for example, Querubin and Snyder (2013) for a brief description of congressional careers during this period. The composition of the U.S. Congress illustrates the link between education and class. For the Senate, which is generally considered the wealthier chamber, 48.9% and 63.1% of its members attended private schools and obtained a college education, respectively, during the nineteenth century. In the House of Representatives, these figures fall to 36.8% and 48.5%, respectively.

generation (see DalBo et al., 2009).[32] Finally, we have data on occupation. We use a dummy for lawyers, which according to Querubin and Snyder (2013) was an elitist profession during the nineteenth century, and a dummy for whether the state senator was a businessman in agriculture (landlord) or a banker.

While education, membership in a political dynasty and occupation are proxies for the elite status of state senators, a more direct approach would be to look directly at their property or wealth. To do this, we use the complete count dataset of the 1850 U.S. Population Census put together by the Minnesota Population Center.[33] This dataset reports the demographic and socio-economic characteristics of every individual enumerated in the 1850 Population Census. Most important for our purposes, the 1850 census was the first to collect information on the value of real estate owned by every individual, a measure of wealth tightly connected to the eligibility requirements of the time.[34] Querubin and Snyder (2013) provide evidence of the reliability of census wealth figures from the 1850 census.

In order to test the effect of democratizing suffrage and office on the wealth of elected state senators, we chose the sample of seven states that eliminated eligibility requirements for office shortly before or after 1850: Connecticut, New Hampshire, New Jersey, New York, North Carolina, South Carolina and Virginia (see Table 1).[35] Based on multiple sources, we put together a comprehensive list of elected senate senators in these states in the 30-year window around the year when eligibility requirements were eliminated (15 years before and 15 years after).[36]

We then performed a fuzzy merge to match each state senator to the 1850 census file to find the value of his real estate wealth in 1850. We merged by full name, first name, last name and state. A *perfect match* is a complete coincidence of the full name and state, while

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[32]To have a relative in a previous generation means to be either a son, daughter, grandson, granddaughter, nephew, niece or son-in-law (and so on) of a member of Congress. To have a relative in the same generation means to be either a brother, sister, cousin, husband, wife or brother-/sister-in-law of a member of Congress.

[33]Minnesota Population Center. North Atlantic Population Project: Complete Count Microdata. Version 2.0 [Machine-readable database]. 1850 Complete Count File [preliminary]. Minneapolis: Minnesota Population Center, 2015.

[34]The 1860 and 1870 censuses collected information on real estate wealth as well as personal wealth. However, these censuses have not yet been fully digitized, and thus a machine-readable file with the full population count does not exist. While there exists a full count and machine-readable file for the 1880 U.S. census, it did not collect any information on wealth.

[35]We chose Connecticut, New Hampshire, New Jersey, New York and Virginia because they eliminated eligibility requirements within 10 years of 1850, the census year. We also included North Carolina and South Carolina, which eliminated eligibility requirements much later (in 1868 and 1865, respectively) in order to include in our sample state senators elected while office qualifications were in place, and for which 1850 corresponds to a baseline (pre-election) wealth.

[36]The time periods considered for every state are Connecticut: 1830-1860; New Hampshire: 1835-1865; New Jersey: 1830-1860; New York: 1830-1860; North Carolina: 1840-1883; South Carolina: 1850-1880; Virginia: 1835-1865.

a *fuzzy match* allows for minor spelling differences or typos in an individual's name in either source.[37] After this first round of merging, we dropped all matches to individuals in the census who would have been younger than 20 when the state senator was first elected to the senate, or older than 85 when he was last elected in our 30-year window, as well as matches to women. Whenever we ended up with a unique match for a state senator following this process of elimination, we preserved the match and coded the state senator's wealth based on this uniquely matched record. For state senators with common names, there were often multiple matches even after the process of elimination in the first round. In these cases, whenever one of the multiple matches resided in one of the counties in the district represented by the state senator, we kept this as the correct match. Whenever it was impossible to narrow multiple matches of a state senator to a unique match, to be conservative we simply dropped these politicians from our sample. In the end we were able to match 60.68% of state senators to a unique individual in the census, a success rate similar to previous work using the 1850 census.[38] Moreover, the success rate was relatively uniform across states.[39] We do not believe that the failure to match several state senators to the census file is a major concern for our empirical analysis. First, in previous work Steckel (1988) and Ferrie (1996) find that having a common name (which in our case may result in multiple matches and thus being dropped from the sample) is not correlated with an individual's wealth. Querubin and Snyder (2013) find that the probability of matching a member of Congress to the 1860-1870 population censuses is not correlated with reported wealth in the 1850 census. Moreover, our analysis relies on comparing the wealth of matched state senators who were first elected before and after eligibility requirements were eliminated. For selection bias to affect our results, it would need to happen differentially across rich and poor politicians, and for those elected before and after eligibility requirements were eliminated, which seems unlikely.

Our last set of outcome variables focuses on political participation and political competition. The "Candidate and Constituency Statistics of Elections in the U.S." database compiled by the ICPSR[40] provides information on nearly every election to the U.S. Congress,

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[37]More precisely, we used Stata's *reclink* command, and we define a perfect merge as a matching score of 1.0 and a fuzzy merge as a matching score greater than or equal to 0.97.

[38]For example, Steckel (1988) reports a 59% success rate when trying to match over 1,800 household heads from 300 different counties in the 1850 census.

[39]The success rate was 71% for Connecticut, 65% for New Hampshire, 60% for New Jersey, 73% for New York, 41% for North Carolina, 45% for South Carolina and 68% for Virginia. The lower success rates for North and South Carolina are understandable, since many of the state senators in these states served many years after 1850 and thus may have been too young in 1850, or may have been living in a different state at the time of the census.

[40]Inter-university Consortium for Political and Social Research. *Candidate and Constituency Statistics of Elections in the United States, 1788-1990* [Computer file]. 5th ICPSR ed. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [producer and distributor], 1995.

presidency and state governorship in the United States from 1788 to 1900. We focus on gubernatorial elections, since congressional and presidential elections were not regulated by state legislation but rather by the U.S. constitution.[41] Gubernatorial elections were very frequent, and term length was between one and three years. From Table 1, we observe that candidates for governor were also restricted in terms of property. Moreover, the elimination of these restrictions varied over time and across states. In all states except Georgia, property qualifications for governors were abolished simultaneously with qualifications for legislators.

We also observe that minimum wealth requirements for gubernatorial candidates were typically much higher than for the legislature. In several states the first gubernatorial elections were indirect and decided by the legislature, but our dataset only includes direct elections. The data contain the number of votes cast for every candidate in every race. The theoretical implications of the model suggest that abolishing eligibility requirements may have led to a lower number of unopposed races (decided by acclamation of a single candidate).

To test this prediction, we look at the number of candidates. The raw number of candidates is a very noisy measure of competition, since races in our dataset often have irrelevant candidates who get a negligible number of votes. There are 105 out of 591 gubernatorial elections in which more than five candidates ran, and in many of them all candidates except the winner and the runner-up received a negligible number of votes. To circumvent this issue, we construct a measure of the *effective number of candidates*, in which candidates are weighted by their vote shares. We use the standard index of effective number of candidates, described by Laakso and Taagepera (1979) as $N = 1/\sum_{i=1}^{n} s_i^2$, where n is the number of candidates and s_i is the share of votes of candidate i.

As this measure has received some criticism in the case that the most successful candidate exceeds 50 percent of the total number of votes, which is usually the case for gubernatorial elections in the United States, we also construct the effective number of candidates as defined by Golosov (2010).[42] We show the robustness of our results by using these two measures as dependent variables.

We also construct a measure of political competition. We compute the *margin of victory* in every race as the difference in the vote share of the winner, s_1, and the runner-up, s_2.[43]

In sum, we have several measures of economic outcomes, politicians' identity and electoral outcomes that we will use as the dependent variables of our estimations. Table (2) displays

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[41]Unfortunately we do not have access to systematic data on elections for state senators and state legislators.

[42]The index by Golosov (2010) is defined as $N = \sum_{i=1}^{n} s_i/(s_i + s_1^2 - s_i^2)$, where s_1 is the vote share of the candidate with the largest number of votes.

[43]For uncontested races, this measure takes a value of 100.

all of these variables, their descriptive statistics and a brief reference of the source for each.

*** TABLE 2 HERE ***

4.3 Empirical Strategy

Since we are interested in estimating the effect of *removing* property requirements on suffrage and office, our independent variables capture the extent to which a given state has already eliminated these requirements at any point in time. Thus, S_{it} is a dummy variable that takes a value of 1 if state i has eliminated property requirements for suffrage prior to year t and 0 otherwise. Similarly, E_{it} is a dummy variable that equals 1 if state i in year t has removed candidate eligibility restrictions prior to year t and 0 otherwise. Take Connecticut, for example: for both legislators and governors, S_{it} takes a value of 1 for every year after 1818 and 0 otherwise, while E_{it} takes a value of 1 for every year after 1845 and 0 otherwise. To estimate the effect of removing property requirements for voting or running for office, we use the following specification:

$$y_{it} = \alpha y_{it-1} + \beta_1 S_{it} + \beta_2 E_{it} + \delta_i + \gamma_i t + \varepsilon_{it}, \tag{1}$$

where y_{it} corresponds to the outcome variable in state i in year t, S_{it} and E_{it} are our main explanatory variables of interest, and δ_i is a full set of state fixed effects. In order to allow for heterogeneity in the trends of our outcome variables across states, we include in every regression a full set of state-specific linear time trends $\gamma_i t$. For outcomes on politician characteristics reported in Tables 5 and 6, the unit of analysis is the politician and not the state. In some specifications we also include additional control variables that we describe in more detail below. Our sample consists of an annual panel for the 13 original states covering the period 1776 to 1900 (when available) unless otherwise stated.

The specification described in equation (1) is best suited for cases in which the dependent variable has serial correlation, as is the case with our economic policy outcomes. For a long dynamic panel, the standard assumption is that the error term is first-order autoregressive: $\varepsilon_{it} = \rho \varepsilon_{it-1} + z_{it}$, where $|\rho| < 1$ and z_{it} is i.i.d. with a mean of 0.[44] Thus, in our baseline specification described by equation (1) we include one lag of the dependent variable, but we perform robustness checks with additional numbers of lags. More generally, equation (1) also encompasses cases in which the dependent variable is not correlated over time, which is more appropriate for specifications with politician characteristics and political competition

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[44]See Baltagi and Wu (1999).

as outcome variables. In this case, we set $\alpha = 0$ and assume that errors are clustered at the state level.

Since every state eliminated property restrictions on suffrage earlier, or at the same time, as restrictions on running for office, the coefficient β_1 measures the independent effect of removing restrictions on suffrage, while β_2 measures the effect of removing restrictions on office, conditional on having already eliminated restrictions for voting. The effect of eliminating restrictions on both voting and running for office is then equal to $\beta_1 + \beta_2$.

Our empirical results must be interpreted cautiously, as the timing of suffrage and eligibility reforms is not exogenous and may confound the effect other time-varying state characteristics. State fixed effects account for any time-invariant differences across states, while state-specific time trends account for any overall trend in the different outcome variables over time in each state. Our estimates of β_1 and β_2 cannot be given a causal interpretation, but are nonetheless informative as to whether the within-state variation in our outcome variables of interest, before and after suffrage and eligibility requirements were eliminated, are consistent with the predictions of our theory. Also, we provide estimates for a broad set of outcome variables including government spending, elite background of elected politicians and political competition, which gives us further confidence that our estimates capture the effect of eligibility reforms and not of other potential confounding variables.

5 RESULTS

5.1 Economics Outcomes

We first focus on the relationship between suffrage and eligibility reforms and government size. Table 3 displays our results for the log of state expenditure per capita as the dependent variable. As state expenditures experienced a major spike during the Civil War, we add in all regressions a dummy equal to 1 for the period 1861-1865 as an additional control.

*** TABLE 3 HERE ***

Columns (1) and (2) in Table 3 report the results for suffrage and eligibility reforms separately, while Column (3) combines the two reforms. These three columns use our baseline specification given by (1), which includes state fixed effects, state-specific time trends and the Civil War dummy (the coefficient on this dummy is not reported to save space, but is positive and significant at the 1% level in all regressions). Our main finding is that the coefficient for eligibility is positive and significant. On the contrary, the suffrage dummy has no effect, even if the extension of the franchise is considered separately. The magnitude

for eligibility is about 0.15, which implies a 16% increase in local government spending once office qualifications are eliminated. The long-run effect, computed as $\beta/(1-\alpha)$, is about four times higher, which implies a substantial increase in government size due to the eligibility reform.

In Columns (4) to (8) we perform several robustness checks on our baseline specification. In Column (4) we move from fixed to random effects and eliminate the time trend, while in Column (5) we drop the state time trend and the Civil War dummy but keep the state fixed-effects. In Column (6) we replace the state-specific time trend with a unique time trend at the national level. The last two columns include 3- and 5-year lags of the dependent variable, respectively; we do not report the coefficient on the additional lags, but note that the magnitude of the coefficient on the first lag falls. The positive and significant effect of candidate eligibility reform is robust to all of these alternative specifications, while the coefficient on the suffrage dummy remains insignificant in all of them. In what follows, we report the results for our preferred specification (Columns 1-3).

Next we move to the analysis of specific expenditure components. Table 4 summarizes the results for different measures of expenditure: education, social welfare, government administration and public safety. The first four columns report the results for total expenditure on those sub-items, measured as log expenditure per capita in each case. The next four columns capture the composition (percentage) of total expenditure represented by each item.

*** TABLE 4 HERE ***

We observe that the two redistributive components of state expenditures, education and social services and welfare, are uncorrelated with suffrage but depend positively and significantly on eligibility. Their total increase was about 7% after the reform, and their increase in the total budget was about 3 and 2 percentage points for education and social welfare, respectively. The spending on government administration increases, but its share of the total expenditure actually falls after the reform. The coefficient for public safety is statistically insignificant.[45]

Overall, our results are consistent with the theoretical implications of our model. We find that simply removing property restrictions on voting has no significant effect on the size of government. However, once requirements for office are also eliminated, there is evidence of a noticeable effect on government spending per capita. Moreover, we observe similar results for the composition of expenditure. This suggests that changes in policy variables do not follow simply from a change in the identity or socio-economic background of the median

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[45]The number of states falls from 13 to 12 in Table 4 since we have no disaggregated information on government spending for Georgia.

voter. Extending access to office to individuals from more diverse (less elite) backgrounds seems like a necessary condition for the preferences of a newly enfranchised poor majority to be reflected in government policies.

5.2 Elite Background of Politicians

In this section, we explore whether the results on government spending reported in Tables 3 and 4 are consistent with the mechanisms proposed in our theoretical model. In particular, we test whether the reforms to suffrage and eligibility changed the elite background of politicians in office. The results of Table 5 report estimates on the education, dynasty and occupation variables constructed from the congressional biographical dataset for state senators who went on to serve in the U.S. House of Representatives. In order to code the S_{it} and E_{it} dummies for each individual senator, we use the year when the politician first entered the state senate. In all regressions we control for the age and age squared of the politician in the year in which he first entered the state senate, since age is a potential confounder of several measures of status.

<center>*** TABLE 5 HERE ***</center>

In Table 5, the dependent variables are dummies that indicate whether the politician shares various characteristics associated with an elite status. We report marginal effects from Probit regressions but our results are qualitatively similar if we use linear probability models. For the probability of attending a private school, reported in Column (1), the effect on the eligibility dummy reform is small and statistically insignificant. On the contrary, in Column (2) we find that after eligibility requirements were eliminated, the probability that a state senator had a college degree decreased by 17 percentage points. Column 3 shows that universal eligibility decreased the probability of belonging to a political dynasty by about 10 percentage points. This holds for both the measure of dynasty based on total relatives as well as that based on relatives who are in a previous or contemporary generation. Finally, we also find that after requirements for candidacy were abolished, some traditionally elitist occupations decreased their political representation. The number of lawyers diminished by about 16 percentage points after the eligibility reform. As for wealthy businessmen, defined as either agricultural businessmen (landowners) or bankers, the reduction was about 8 percentage points.[46] Finally, notice that the coefficient on the suffrage dummy is usually statistically insignificant, or if anything, positive. The overall picture that emerges from

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[46]The sample size is slightly reduced in Column (6) since we have no information about landowners or bankers in Rhode Island.

<center>24</center>

Table 5 is that the elimination of eligibility requirements led to a democratization of the states' upper chamber.

Next we test directly whether suffrage or eligibility reforms led to the election of state senators with lower real estate wealth (as measured in the 1850 census). In Columns (1)-(3) of Table 6 we limit our analysis to state senators for whom we found a *perfect match* in the 1850 census. In Columns (4)-(6) we increase our sample to allow a *fuzzy match* (though still unique) with the 1850 census. Again, in order to code the S_{it} and E_{it} dummies, we use the year when the politician first entered the state senate (in our 30-year window around the year of eligibility reform). In this analysis it is particularly important to control flexibly for the state senator's age. Those elected after suffrage or eligibility reforms were enacted will tend to be younger in 1850 (when we observe their wealth) than those elected before such reforms took place. Thus, in every specification we control for a state senator's age and age squared in 1850. The dependent variable in all specifications is the log of real estate wealth.

*** TABLE 6 HERE ***

The estimates reported in Table 6 are reassuring regarding the change in the elite status of state senators when qualifications for office ended. In Columns (1) and (4) we consider the full sample of state senators elected in the 30-year window around the eligibility reform year. The coefficient for the eligibility dummy is negative and statistically significant in Column 1. The point estimate implies that eliminating qualifications for office led to a reduction in the average real estate wealth of state senators of about 40%.

We perform several robustness checks on this analysis. One potential concern is that for many state senators first elected to the state Senate prior to 1850, their measured wealth is post-Senate, and thus the wealth figures may confound the effect of the eligibility constraints with the economic effect of serving in the state Senate. Using census data for the same period, Querubin and Snyder (2013) find no causal effect of serving in the U.S. Congress on an individual's wealth, but the patterns for state offices may be different. This issue becomes more problematic the larger the window of years that we consider for each state. For example, for New York, wealth is measured 20 years after first entering the Senate for those elected in 1830, and 10 years prior to entering the Senate for those first elected in 1860. In order to address these potential concerns, we use two separate approaches. First, in Columns 2 and 5, we consider a narrower window of 20 years around the eligibility reform date (those elected 10 years before and 10 years after). Second, in Columns (3) and (6) we simply drop all state senators first elected before 1850, in which case we are certain that the value of real state attributed to each state senator cannot confound the effect of serving in this office. The results broadly confirm that eligibility reforms led to a decrease in elected

state senators' wealth. The coefficients in Columns (2)-(3) and (5)-(6) remain negative and statistically significant, and in fact become larger in absolute value. The coefficients on the suffrage reform dummy, on the other hand, are less stable and usually smaller (or positive) than those for the eligibility dummy (the one exception is the coefficient in Column 2, where the effect of suffrage is negative and larger in absolute value than the effect of eligibility).

The ambiguous, or often insignificant, effect of suffrage reform documented in Tables 5 and 6 complements the findings by Larcinese (2014) for Italy and Berlinski et al. (2014) for England, suggesting that extending the franchise had no effect on the elite background of legislators. The elite maintained their political power, at least in terms of their political positions, after the democratization of political participation.

5.3   Elections: Number of Candidates and Competition

Finally we move on to the study of political competition. A theoretical implication of our model is that removing restrictions on running for office would increase the number of candidates (or parties) and lead to more competition. Table 7 exhibits estimations for both the effective number of candidates N and the margin of victory M. As the number of candidates may be correlated with the population size of the state, we control for logged population in all columns.

<div align="center">*** TABLE 7 HERE ***</div>

Columns (2) and (3) in Table 7 show that the removal of qualifications for office indeed led to an increase in the effective number of candidates, with a coefficient of 0.25. Given that the mean number of candidates is 2.0 with standard deviation 0.4, the magnitude of the coefficient implies an increase in about one-half of a standard deviation. Column (4) exhibits a similar result for an alternative measure for the effective number of candidates.

Columns (5) to (7) show similar results for margin of victory. The margin of victory is related to the effective number of candidates, but their correlation is far from perfect and thus we include it as an alternative dependent variable. Abolishing economic requirements for candidacy decreases the margin of victory by about 10 percentage points, which is about one-half of the standard deviation, as shown in Table 2. The estimates for the suffrage dummy, on the other hand, are unstable and usually statistically insignificant.

6   CONCLUSIONS

We have studied democratization as the interplay between two different dimensions: the extension of the franchise and the abolition of eligibility restrictions. Our analysis stems from

the fact that elites at the beginning of the nineteenth century used these two mechanisms to impose their control over the decision making process. We have presented a model in which the implemented policy depends not only on the constraints on who is entitled to vote, but also on who is allowed to run as a candidate. Our analysis provides predictions that are confronted with empirical evidence. In particular, the model shows that when suffrage is extended prior to the elimination of eligibility restrictions, the expected redistributive effects of democratization should only be observed once the two reforms have been implemented. We study the empirical relationship between suffrage and eligibility reforms in the 13 original U.S. states and several outcomes of interest. All our results point to the importance of eligibility restrictions in the process of democratization.

We emphasize again that we do not see our thesis as alternative to the extension of suffrage. The enfranchisement of the entire population is a fundamental stage in the democratization process. Rather, we assert that suffrage is a necessary but not a sufficient condition. In a model in which commitment to policies is imperfect, if people can vote but cannot run, then democratic reforms will fall short of empowering broader segments of the population. Both theories, suffrage and eligibility, should be seen as complementary explanations of the process of incorporating the masses into the political system.

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y_o

Ω^1 Ω^0

$\widehat{y}^1 = \widehat{y}^0$ ← ← ←

Eligibility-
Restriction Set

$m(y_s)$

$\widehat{y}^2 = m$

Suffrage-
Restriction Set

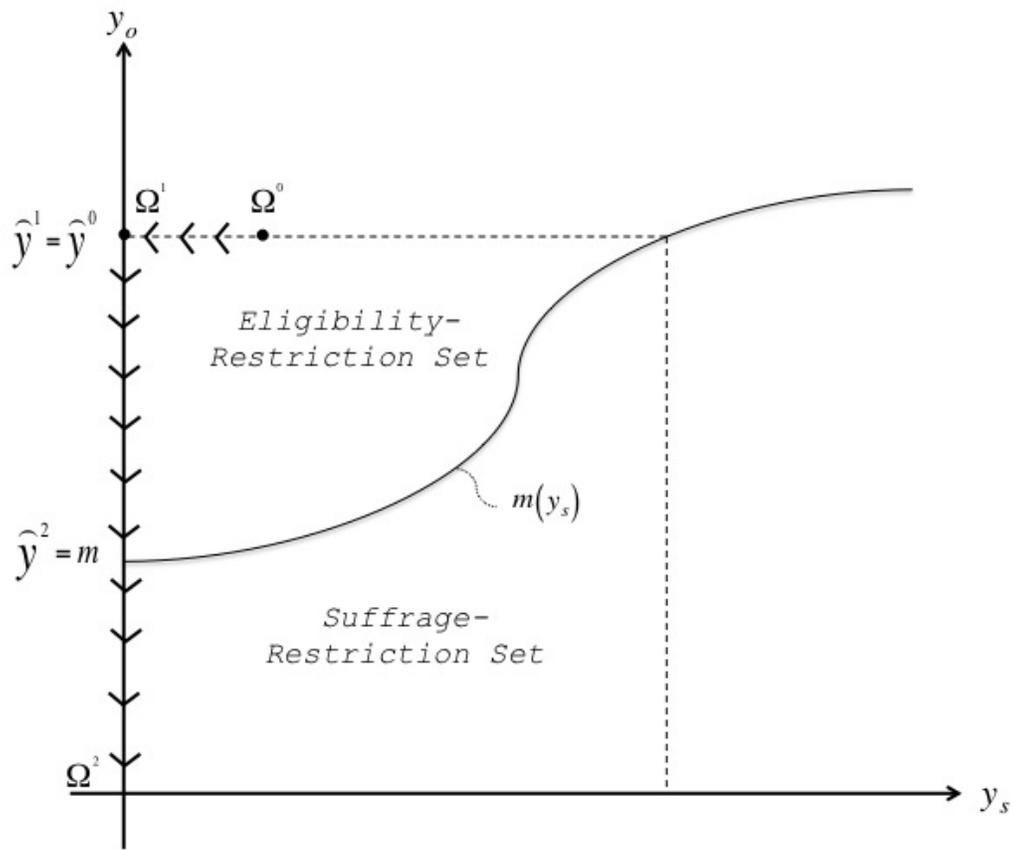$\underline{\Omega}^2$

y_s

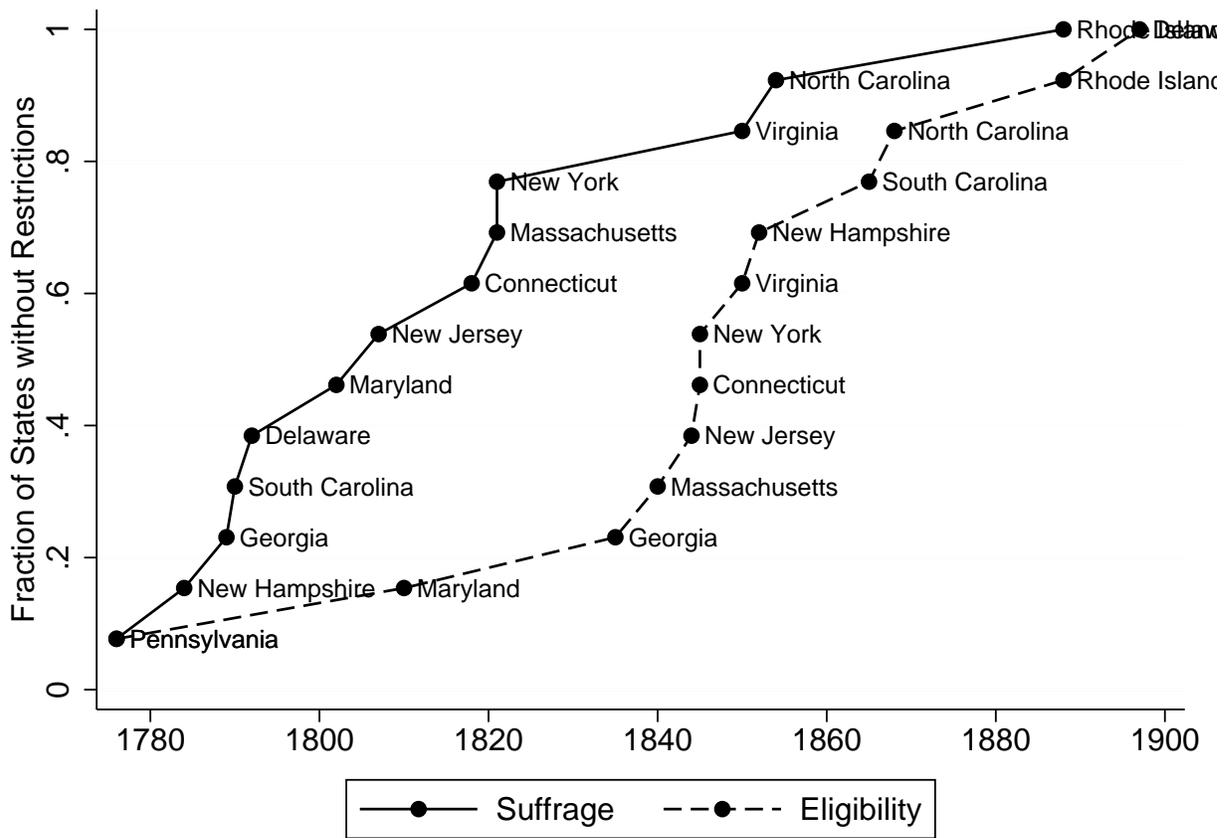**Figure 1:** Isopolicies in the Constitutional Space

Figure 2: States without Restrictions for Voting and Running for Office

Table 1: Suffrage and Eligibility Restrictions for the Original 13 Colonies

State	Year	Document	Suffrage	Senator	Representative	Governor
Connecticut	1818	Constitution	None	FH	FH	FH
Connecticut	1845	Amendment	None	None	None	None
Delaware	1776	Constitution	FH: 50A	FH	FH	FH; Leg.
Delaware	1792	Constitution	None	FH: 200A-1,000L	FH	None
Delaware	1831	Constitution	None	FH: 200A-1,000L	None	None
Delaware	1897	Constitution	None	None	None	None
Georgia	1777	Constitution	10L	FH:250A-250L	-	None; Leg.
Georgia	1789	Constitution	None	FH:250A-250L	FH:200A-150L	FH:500A-1,000L; Leg.
Georgia	1798	Constitution	None	FH:500D-1,000D	FH:250D-500D	FH:500A-4,000D; Leg.
Georgia	1824	Amendment	None	FH:500D-1,000D	FH:250D-500D	FH:500A-4,000D
Georgia	1835	Amendment	None	None	None	FH:500A-4,000D
Georgia	1847	Amendment	None	None	None	None
Maryland	1776	Constitution	FH:50A-30L	1,000L	FH:500L	FH:1,000L; Leg.
Maryland	1802	Amendment	None	1,000L	FH:500L	FH:1,000L; Leg.
Maryland	1810	Amendment	None	None	None	None; Leg.
Maryland	1838	Amendment	None	None	None	None
Massachusetts	1780	Constitution	FH	FH:300L-600L	FH:100L-200L	1,000L
Massachusetts	1821	Amendment	None	FH:300L-600L	FH:100L-200L	1,000L
Massachusetts	1840	Amendment	None	None	None	None
New Hampshire	1776	Constitution	FH	FH: 200L	FH: 100L	FH: 500L
New Hampshire	1784	Constitution	None	FH: 200L	FH: 100L	FH: 500L
New Hampshire	1792	Constitution	None	FH: 200L	FH: 100L	FH: 500L
New Hampshire	1852	Amendment	None	None	None	None
New Jersey	1776	Constitution	50L	1,000L	500L	None; Leg.
New Jersey	1807	Amendment	None	1,000L	500L	None; Leg.
New Jersey	1844	Constitution	None	None	None	None
New York	1777	Constitution	FH: 20L	100L	None	FH
New York	1821	Constitution	None	FH	None	FH
New York	1845	Amendment	None	None	None	None
North Carolina	1776	Constitution	FH: 50A	300A	100A	1,000L; Leg.
North Carolina	1835	Amendment	FH: 50A	300A	None	None
North Carolina	1856	Amendment	None	300A	None	None
North Carolina	1868	Constitution	None	None	None	None
Pennsylvania	1776	Constitution	None	None	None	None
Rhode Island	1776	Charter	FH: 40L	Elector	Elector	Elector
Rhode Island	1843	Constitution	FH: 134D	Elector	Elector	Elector
Rhode Island	1888	Amendment	None	None	None	None
South Carolina	1778	Constitution	None	2,000L	Elector	10,000L; Leg.
South Carolina	1790	Constitution	None	300L	500A-150L	1,500L; Leg.
South Carolina	1861	Constitution	None	300L	500A-150L	1,500L; Leg.
South Carolina	1865	Constitution	None	None	None	None
Virginia	1776	Constitution	FH: 50A	FH	FH	None; Leg.
Virginia	1830	Constitution	FH: 50A	FH	FH	None; Leg.
Virginia	1851	Constitution	None	None	None	None

Notes: Sources are Keyssar (2000) for Suffrage and Miller (1900) for Senator, Representative and Governor. FH is for Freehold; A, L and D are Acres, Pounds and Dollars, respectively. For Governor, Leg. means that the election was indirect and depended on the Legislature.

Table 2: Descriptive Statistics and Sources

	Obs.	Mean	S.D.	Source
Total Expenditure per capita	956	0.103	1.086	Sylla, Legler and Wallis (1993)
Spending on Education	742	0.201	0.241	Sylla, Legler and Wallis (1993)
Spending on Education (%)	742	11.614	11.922	Sylla, Legler and Wallis (1993)
Spending on Social Services	760	0.161	0.250	Sylla, Legler and Wallis (1993)
Spending on Social Services (%)	760	7.607	7.551	Sylla, Legler and Wallis (1993)
Spending on Gov.Adm.	926	0.301	0.253	Sylla, Legler and Wallis (1993)
Spending on Gov.Adm. (%)	926	30.229	24.324	Sylla, Legler and Wallis (1993)
Spending on Public Safety	851	0.366	1.836	Sylla, Legler and Wallis (1993)
Spending on Public Safety (%)	851	11.337	13.631	Sylla, Legler and Wallis (1993)
Private School	737	0.411	0.492	McKibbin (1992), Congressional Biographical Directory
College	737	0.512	0.500	McKibbin (1992), Congressional Biographical Directory
Relatives	737	0.206	0.405	McKibbin (1992), Congressional Biographical Directory
Relatives Previous	737	0.140	0.347	McKibbin (1992), Congressional Biographical Directory
Lawyer	737	0.570	0.495	McKibbin (1992), Congressional Biographical Directory
Landlords and Bankers	737	0.136	0.343	McKibbin (1992), Congressional Biographical Directory
Real State Wealth; All Sample; Perfect Match (Score=1.0)	687	8.494	1.317	Roster of State Senators collected by the authors / Minnesota Population Center (2015)
Real State Wealth; All Sample; Fuzzy Match (Score=0.97)	946	8.389	1.360	Roster of State Senators collected by the authors / Minnesota Population Center (2015)
Effective Number of Parties	591	2.007	0.406	ICPRS (1995)
Effective Number of Parties (Golosov)	591	1.832	0.370	ICPRS (1995)
Margin of Victory	583	19.884	25.786	ICPRS (1995)

Notes: All sources are described in the text. In the variables that use McKibbin (1992), we also relied on the Biographical Directory of the U.S. Congress.

For the Roster of state senators we used the following sources. Connecticut: Connecticut State Library, Connecticut General Assembly Members (available in http://www.cslib.org/comga.asp); New Hampshire: New Hampshire Manual for the General Court (1987); New Jersey: Manual of the Legislature of New Jersey, F.L. Lundy (Compiler), 1872; New York: Civil List and Constitutional History of the Colony and State of New York, Edgar A. Werner, 1889-1891, pp402-805; North Carolina: http://www.carolana.com/NC/1800s/home.html; South Carolina: http://www.carolana.com/SC/home.html; Virginia: The General Assembly of Virginia, July 30th 1619 - January 11th 1978: A Bicentennial Register.

Table 3: Total State Expenditure Per Capita

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Dependent Variable is Log (State Expenditure per capita)				
Dep.Var. (t-1)	0.780***	0.764***	0.764***	0.834***	0.812***	0.788***	0.290***	0.319***
	(0.019)	(0.020)	(0.020)	(0.017)	(0.019)	(0.019)	(0.032)	(0.035)
Suffrage	0.0291		-0.0836	-0.065	-0.0319	-0.0526	-0.0871	-0.0375
	(0.064)		(0.073)	(0.051)	(0.069)	(0.069)	(0.088)	(0.086)
Eligibility		0.155***	0.189***	0.220***	0.235***	0.223***	0.203***	0.179***
		(0.052)	(0.060)	(0.047)	(0.057)	(0.057)	(0.072)	(0.069)
State FE	YES	YES	YES	NO	YES	YES	YES	YES
State TT	YES	YES	YES	NO	NO	NO	YES	YES
Obs.	943	943	943	956	943	943	861	793
States	13	13	13	13	13	13	13	13

Notes: All regressions assume that the error term is first order auto-regressive. We include state fixed effects in all specifications except in column (4) where we assume random effects. State-specific linear time trends and a dummy for the Civil War years (1861-1865) are included in all specifications except in columns (4) and (5). Specifications in columns (7) and (8) include 3 and 5 lags, respectively, of the dependent variable (coefficient on lags 2-5 not reported). *, **, ***, significance at the 10%, 5% and 1% level, respectively.

Table 4: Composition of State Expenditure

| | Total Expenditure | | | | Share of Total Expenditure | | | |
| | Education | Social Serv. and Welfare | Government Adm. | Public Safety | Education | Social Serv. and Welfare | Government Adm. | Public Safety |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep.Var. (t-1)	0.768***	0.610***	0.364***	0.508***	0.681***	0.678***	0.542***	-0.008
	(0.025)	(0.029)	(0.031)	(0.028)	(0.027)	(0.027)	(0.028)	(0.033)
Suffrage	-0.002	0.01	-0.032	-0.081	-1.084	-0.862	3.47	-5.179*
	(0.025)	(0.030)	(0.033)	(0.216)	(1.397)	(0.741)	(2.184)	(3.023)
Eligibility	0.061***	0.077***	0.116***	-0.109	2.893**	2.077***	-9.141***	0.952
	(0.021)	(0.023)	(0.026)	(0.171)	(1.186)	(0.612)	(1.796)	(2.375)
Obs.	730	748	914	839	730	748	914	839
States	12	12	12	12	12	12	12	12

Notes: The dependent variables in columns (1)-(4) correspond to the log of total expenditure per capita of the different components. Dependent variables in columns (5)-(8) correspond to the share of each component as a percentage of total expenditure. All regressions assume that the error is first order autoregressive and include one lag of the dependent variable. All specifications include state fixed effects, state specific time trends and a civil war dummy. *, **, ***, significance at the 10%, 5% and 1% level, respectively.

Table 5: Biographical Characteristic of State Senators

	Private School	College	Relatives	Relatives (previous)	Lawyers	Land Owners and Bankers
	(1)	(2)	(3)	(4)	(5)	(6)
Suffrage	0.113***	-0.023	0.045	0.007	-0.054	0.081**
	(0.041)	(0.101)	(0.052)	(0.061)	(0.088)	(0.033)
Eligibility	0.006	-0.178**	-0.112**	-0.082*	-0.161*	-0.087***
	(0.055)	(0.076)	(0.050)	(0.046)	(0.092)	(0.024)
Obs.	737	737	737	737	737	727
State	13	13	13	13	13	12
PR-sq.	0.071	0.144	0.059	0.038	0.137	0.191

Notes: Dependent variables are dummy variables for whether the state senator has that attribute. All estimates come from Probit regressions and coefficients reported correspond to marginal effects. All specifications include state fixed effects, state specific time trends and controls for age and age squared of the state senator in the year in which it first entered the state senate. Standard errors are clustered at the state level. *,**, ***, significance at the 10%, 5% and 1% level, respectively.

Table 6: Real State Wealth of State Senators

	Dependent Variable is Log (Real State Wealth)					
	Perfect Match			Fuzzy Match		
	S1	*S2*	*S3*	*S1*	*S2*	*S3*
	(1)	(2)	(3)	(4)	(5)	(6)
Suffrage	-0.171	-1.376***	-0.415***	-0.011	0.625**	-0.253
	(0.182)	(0.173)	(0.092)	(0.228)	(0.205)	(0.200)
Eligibility	-0.506*	-0.496**	-1.269***	-0.300	-0.552**	-0.819***
	(0.232)	(0.180)	(0.291)	(0.172)	(0.216)	(0.178)
Obs.	687	401	344	946	532	495
States	7	7	7	7	7	7
R-sq.	0.137	0.211	0.162	0.120	0.168	0.137

Notes: In columns 1-3 we limit the analysis to state senators for which we could find a perfect match in the 1850 census. In columns 4-6 we allow for a fuzzy match between the state senators roster and the 1850 census file (but still restrict the score of Stata's *reclink* command to be at least 0.97. Columns (1) and (4) use the entire sample of state senators elected in a window of 15 years around the year of elimination of eligibility requirements; columns (2) and (5) use the sample with state senators elected in a window of 10 years around the date of eligibility reform; columns (3) and (6) restrict the sample to state senators elected after 1850. All specifications include state fixed effects, state specific time trends and control for age and age squared (not reported). Standard errors are clustered at the state level. *,**, ***, significance at the 10%, 5% and 1% level, respectively.

Table 7: Number of Candidates and Margin of Victory in Gubernatorial Elections

	Effective Number of Candidates				Margin of Victory		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Suffrage	-0.04		-0.091	-0.056	12.616	9.532	
	(0.111)		(0.068)	(0.082)	(7.833)	(9.790)	
Eligibility		0.232***	0.245***	0.263***	-14.053***		-12.287***
		(0.061)	(0.059)	(0.027)	(3.363)		(2.882)
Obs.	591	591	591	591	583	583	583
States	13	13	13	13	13	13	13
R-sq.	0.215	0.234	0.236	0.253	0.343	0.326	0.335

Notes: Effective number of candidates from Laakso and Taagepera (1979) in columns (1) to (3) and from Golosov (2010) in column (4). Margin of victory is measured as a percentage. All specifications include state fixed effects, state specific time trends and control for the log of population. Standard errors are clustered at the state level. *,**, ***, significance at the 10%, 5% and 1% level, respectively.

APPENDIX

Proof of Proposition 1.

The proof of existence is trivial, for the decisive citizen $\hat{y}$ running as a sole candidate constitutes an equilibrium. No citizen with a different income level would have incentives to run against her, as he would incur a positive cost $c > 0$ and lose the election for certain. A citizen with the same income $\hat{y}$ would not have incentives to contest a single candidate, for the net gains of entering this electoral race would be $\frac{b}{2} - c < 0$. The decisive citizen would not have incentives to renege on her candidacy, for that would entail a payoff of $-\infty$.

(i) Let $c \leq b$. We have shown that $y^* = \hat{y}$ constitutes an equilibrium. It remains to show that this equilibrium is unique. Since the perks of winning office b exceed the cost c of running as a candidate, any citizen who was guaranteed an electoral victory would contest any standing candidate. Hence, the only citizen who could run uncontested is the decisive citizen $\hat{y}$.

(ii) and (iii) Let $c > b$. As argued above, the decisive citizen $\hat{y}$ running as a sole candidate constitutes an equilibrium. We now show that the set of equilibria is larger. Consider $y' \neq \hat{y}$. Define the set $y'_{\succ} \equiv \{y \geq y_O : V(\hat{y}, \tau(y)) \geq V(\hat{y}, \tau(y'))\}$ of all eligible candidates y who could run against y' and defeat him with positive probability. Clearly, $y'_{\succ}$ is non-empty, for it includes the decisive citizen herself. Also, define the set $y'_{c-b} \equiv \{y \geq y_O : V(y, \tau(y)) - V(y, \tau(y')) \leq c - b\}$ of all eligible candidates y who would not be willing to run against a citizen y' (and, consequently, incur the loss $c - b$), even if they were guaranteed to win against him and therefore implement their own bliss policy. Then, y' running as a sole candidate constitutes an equilibrium of the electoral game if and only if for all $y'_{\succ} \subseteq y'_{c-b}$, that is, if each and every citizen who could run against y' and defeat him with positive probability would not be willing to do so.

In order to construct the set of equilibria, it is convenient to notice the following property, which can be shown by tedious but straighforward algebra:

$$V(y, \tau(y)) - V(y, \tau(y')) = \frac{1}{2\mu}(y - y')^2.$$

This property implies:

(a) $V(y, \tau(y)) - V(y, \tau(y')) = V(y', \tau(y')) - V(y', \tau(y))$, that is, that the policy gains for citizen y of defeating candidate y' are the same as the policy gains for citizen y' of defeating candidate y.

(b) If $|y_1 - y_2| < |y_1 - y_3|$ then $V(y_1, \tau(y_1)) - V(y_1, \tau(y_2)) < V(y_1, \tau(y_1)) - V(y_1, \tau(y_3))$,

that is, that the policy gains of winning against another citizen are larger the further away the candidate is in the income space.

(c) $V(y, \tau(y - t)) = V(y, \tau(y + t))$ for any $t > 0$, that is, that preferences are symmetric in the space of income.

Equipped with this property, we can now construct the set of equilibria. We have defined above citizen y_O^{sup} as:

$$y_O^{\text{sup}} \equiv \sqrt{2\mu(c - b)} + y_O,$$

citizen m^{sup} as:

$$m^{\text{sup}} \equiv \frac{1}{2}(y_O + y_O^{\text{sup}}),$$

and, finally, the income distance between citizens y_O^{sup} and m^{sup}:

$$t^* \equiv m^{\text{sup}} - y_O = \frac{1}{2}\sqrt{2\mu(c - b)}.$$

First, observe that citizen y_O would not be willing to run against any candidate with income $y \in [y_O, y_O^{\text{sup}}]$. Conversely, from observation (a), no candidate with income $y \in [y_O, y_O^{\text{sup}}]$ would be willing to run against y_O. Moreover, from observation (b), it follows that if citizen y_O is not willing to contest any candidate in the set $[y_O, y_O^{\text{sup}}]$, no other citizen in $[y_O, y_O^{\text{sup}}]$ would have an incentive to enter the electoral race against any candidate in that set either.

Now, observe that we have drawn from observation (c) to construct citizen m^{sup} as the one who is indifferent between y_O and y_O^{sup}. Again, from observation (b), it follows that citizen m^{sup} would strictly prefer candidate y_O over any candidate $y > y_O^{\text{sup}}$. Similarly, any citizen to the left of m^{sup} would prefer y_O against any candidate $y > y_O^{\text{sup}}$. Hence, we have that if $m(y_S) \leq m^{\text{sup}}$, then the set of equilibria is given by $[y_O, y_O^{\text{sup}}]$.

Now consider the set of citizens $[m(y_S) - t^*, m(y_S) + t^*]$, who are around the median of the constituency. By construction, a citizen with income $y = m(y_S) - t^*$, that is, the citizen on the left extreme of this set, would be willing to run against any candidate y' with a higher income than himself if and only if this candidate is outside this set, that is, if and only if $y' > m(y_S) + t^*$. Conversely, by observation (a), a citizen with income $y = m(y_S) + t^*$ would only have incentives to contest a candidate with lower income if and only if this candidate did not belong to this set. By observation (b), no citizen in the set $[m(y_S) - t^*, m(y_S) + t^*]$ would be willing to electorally contest any other member of this set. Moreover, observe that any member of this set would defeat any member outside this set. Hence, for $m(y_S) > m^{\text{sup}}$, the set of equilibria is given by $[m(y_S) - t^*, m(y_S) + t^*]$.

Proof of Proposition 2.

Suppose that there exists an equilibrium with two candidates, y_l^* and y_r^*, with $y_l^* \leq y_r^*$, running for office. Clearly, since running entails a cost $c > 0$, it must be that both candidates win with positive probability in equilibrium. Hence, they must be symmetrically located around the median of the constituency. Hence, for some $t > 0$, we can write $y_l^* = m(y_S) - t$ and $y_r^* = m(y_S) + t$.

A necessary condition for a two-candidate equilibrium to exist is that no candidate is better off not running. The expected non-policy payoff of running is $\frac{1}{2}b - c < 0$. Hence, it must be that $\frac{1}{2}[V(y_l^*, \tau(y_l^*)) + V(y_l^*, \tau(y_r^*))] + \frac{1}{2}b - c \geq V(y_l^*, \tau(y_r^*))$. The left-hand side of this expression is citizen y_l^*'s payoff from running, while the right-hand side is his payoff if he were not running (from observation (c) above, the condition for y_r^* is the same). We can write this expression as $\frac{1}{2}[V(y_l^*, \tau(y_l^*)) - V(y_l^*, \tau(y_r^*))] \geq c - \frac{1}{2}b$ or $y_r^* - y_l^* \geq \sqrt{2\mu(2c - b)} > 0$. Hence, defining $\underline{t} \equiv \frac{1}{2}\sqrt{2\mu(2c - b)} > 0$, we have that $t \geq \underline{t}$.

Another necessary condition for an equilibrium with two candidates to exist is that a third candidate is not willing to enter the race. Clearly, since $y_r^* - y_l^* > 0$, a third citizen y' entering the electoral race could only defeat the candidates if $y_l^* < y' < y_r^*$, as otherwise his share of the votes would be strictly below one-half, whereas one of the other candidates would exactly obtain one-half of the votes. For any t characterizing the distance from candidates to the median of the constituency, we can define the best-contender citizen $y'(t)$ as the one who could leave both y_l^* and y_r^* with the same share of the vote, that is, $F\left(\frac{y_l^* + y'(t)}{2}\right) = 1 - F\left(\frac{y_r^* + y'(t)}{2}\right)$. Clearly, $y'(t)$ is unique. Let $S(t)$ be the share of the votes that the best-contender citizen $y'(t)$ could obtain by entering the race. We have that $S(t)$ is a continuous strictly increasing function with $S(0) = 0$ and $S(m(y_S)) > \frac{1}{2}$. Hence, there exists a unique $\bar{t}$ such that $S(\bar{t}) = \frac{1}{3}$. Notice that $\bar{t}$ is defined by $F\left(\frac{m - \bar{t} + y'(\bar{t})}{2}\right) = \frac{1}{3} = 1 - F\left(\frac{m + \bar{t} + y'(\bar{t})}{2}\right)$. Hence, we have that $t \leq \bar{t}$, as otherwise a third citizen could enter the race and defeat the contenders.

Hence, when eligibility is unrestricted, an equilibrium with two candidates exists as long as $\underline{t} \leq \bar{t}$. A necessary and sufficient condition for that is that $F\left(\frac{m - \underline{t} + y'(\bar{t})}{2}\right) \geq \frac{1}{3}$.

We can characterize an equilibrium with eligibility restrictions by recognizing that if $y_O \leq m(y_S) - \bar{t}$, then the set of equilibria is unaffected by the eligibility restriction. If $m(y_S) - \bar{t} \leq y_O \leq m(y_S) - \underline{t}$, then there cannot be equilibria such that $y_l^* < y_O$, so the set of equilibria is restricted by $t \in [\underline{t}, m - y_O]$. If $m(y_S) - \underline{t} \leq y_O$, then y_l^* should be closer to $m(y_S)$ than $\underline{t}$, so that there does not exist a two-candidate equilibrium.