

Political Competition and Economic Performance: Theory and Evidence from the United States*

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Abstract

One of the most cherished propositions in economics is that market competition by-and-large increases consumer welfare. But whether political competition has similarly virtuous consequences is far less discussed. This paper formulates a model to explain why competition may matter and uses the United States as a testing ground for the model's implications. It finds statistically robust evidence that political competition has quantitatively important effects on state income growth, state policies, and the quality of Governors.

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1 Introduction

One of the most cherished propositions in economics is that, by and large, monopoly is bad and market competition between firms raises the welfare of consumers. Whether competition between political parties has similarly virtuous consequences is far less discussed, despite the long-term monopoly on power by a dominant party observed in a number of existing democracies, such as Japan (the LDP), Malaysia (the UMNO), Mexico (the IRP), Paraguay (the Colorado Party), and South Africa (the ANC).¹ Moreover, there is little empirical evidence even to establish that political competition matters at all.²

In this paper, we argue that political competition may be crucial for economic performance. Even though aspects of the argument are quite general, our main motivation is the break-down in the strong-hold on political control that the Democratic party had established in the Southern U.S. following the Civil War. To illustrate this development, Figure 1 graphs political competition averaged by decade from the 1930s to the 1990s, using a measure (detailed below) that varies between -0.5 and 0 with larger values corresponding to more competition. The graph contrasts the 16 states of the US “South” (as defined by the US Census) against the remainder of the continental United States, the “Non-South”. It shows a clear increase in political competition in the South, particularly in the 1960s, but almost no change elsewhere.

The post-war economic transformation of the American South – with living standards converging to those in the rest of the US – is viewed as reflecting either economic forces alone, as in the macroeconomic growth literature (see, e.g., Barro and Sala-i-Martin, 2004, Ch.11), or a change in “culture”, as in the literature on political and economic history (see e.g., Wright, 1999). Our argument does not rule out these explanations for Southern convergence, but adds the force of political competition.³ Figure 2 plots the log of income per capita in each of the Southern states relative to the entire US against polit-

¹See, however, Wittman (1989, 1995) for a strong argument in favor of the efficiency of political competition. Polo (1998) and Svensson (1998) provide early formal analyses of how lopsided political competition may lead to excessive rent-seeking or lack of inefficient provision of government services.

²Besley and Case (2003) discusses some evidence from studies using U.S. data.

³Haber (2004) also argues that institutions that create competition are important to understand economic development in the U.S.

ical competition in the state relative to the entire US, again using averages for each decade from 1930 to 2000. The regression line has a slope of unity, suggesting that each percentage point of (relative) political competition is associated with a percentage point of (relative) income. Our paper will argue that this relation is not a mere coincidence, but the result of a causal mechanism.

To shed light on this mechanism, we use the abolition of voting rights restrictions. Figure 3 shows an “event-study diagram”, plotting growth rates within an average state five years before and after the last form of voting restriction was abolished. The picture gives a clear sense of a growth takeoff. In fact, the data suggest an average growth difference of around 2% before and after the “event”.

Against this background, Section 2 presents a theoretical model to illustrate how lack of political competition can harm economic performance. In the model, party attachments are formed on a non-economic issue (race in the example of the South). These attachments may give one party a large advantage, blunting the responsiveness to voters over economic issues. This lack of political accountability, in turn, allows narrow economic interests, antithetical to growth, to capture the political process. Our model weaves these ideas together by showing how lopsided political support and weak political competition may spill over into party selection of low-quality political candidates who are more susceptible to influence by special interests. It has a number of empirical predictions linking economic growth, the quality of government and economic policies to the degree of political competition.

In Section 3, we further discuss why the United States provide a good testing ground for these predictions. We briefly describe the economic and political transformation of the South in the post-war period. The description pays particular attention to the 1960s, and the events leading up to the federal Voting Rights Act of 1965, which eliminated poll taxes, literacy tests and other means of disenfranchising large parts of the black and poor population. We argue that this shock fundamentally changed the nature of political competition and reduced the electoral advantage enjoyed by Southern Democrats, and that it was largely exogenous to the political, policy and economic outcomes of interest. The section also details our data set, which is based on annual observations from 1929 and onwards in the 48 U.S. continental states.

We use fixed-effects, instrumental-variable methods to estimate the effect of political competition. Our results are presented in Section 4. Political

competition has a statistically significant and quantitatively important positive effect on state income and growth. According to our IV estimates, the stiffer political competition induced by the Voting Rights Act raised long-run income in the average affected state by almost 30%. Moreover, we find empirical evidence for the mechanisms highlighted by the theoretical model. Thus, higher political competition leads to policies of lower overall state taxes and more business friendly labor regulation, and to a larger share of manufacturing in state production. We also find that the quality of politicians – as measured by state Governor fixed effects – are increasing in the degree of political competition. The empirical strategy and the results are robust to a number of legitimate statistical concerns.

Section 5 offers concluding comments, and an Appendix collects some proofs of theoretical results.

2 Theory

Our model illustrates how political competition may affect policy and economic growth via the “quality of politicians”. While the argument is quite general, our specific purpose is to explain the development in the US states. To that end, we model a state where two parties compete by picking candidates for Gubernatorial elections. We distinguish two groups of citizens – those holding a traditional asset (called “land”) and those drawing incomes only from the modern sector. Policy is set by the elected Governor and may favor the traditional economy. Owners of the traditional asset protect their quasi-rents by lobbying, but their influence depends on the characteristics of the Governor. Political (non)competition is defined as an electoral advantage of one party arising from a surplus of “committed voters”, due to the parties’ non-pliable stance on non-economic issues, which – in the Southern example – we can think about as “race”. Such electoral advantage gives a dominant party less incentive to appeal to “swing voters”, who are not committed on racial issues and prepared to vote against candidates susceptible to lobbying. The model assumes away all intrinsic differences between the parties except for the asymmetric political support for their stance on non-economic issues. Of course, this assumption is patently unrealistic. But it allows us to focus on the implications of party competition pure and simple.

The timing of the model is as follows. At a first stage, each of the parties picks a candidate for Governor under uncertainty about a popularity shock.

Second, this shock is realized as voters cast their ballot. Third, whoever is elected Governor receives transfers from vested interests and selects a policy. At the last stage, all private economic choices are made. The next three subsections deal with these choices in reverse order. Thus, we first describe the economic part of the model, then the political part, and finally the full politico-economic equilibrium.

2.1 The Economic Model

We use a model of the economy and policy based on Persson and Tabellini (2000, Section 14.3). It has two sectors – a traditional sector and a modern sector – and two time periods. The key question is how the owners of traditional factors can protect their quasi-rents.

Preferences and Technology Consider a continuum of citizens, of measure M , where each citizen has an economic type and a political type. Political types are discussed in the next subsection. Economic types denoted by $I \in \{K, L\}$ refer to the ownership of factors. One group, $I = K$ has size $(1 - \alpha)M$, owns no land and is referred to as capitalists. In the group of landowners, $I = L$ of size αM , each member holds the same amount of land l/α , where l is the per capita amount of land in the population.

Every citizen has the same period 1 endowment, y_1 , which can be consumed, c_1 , or invested in either of two sectors: $k^{I,S}$, $S = T, N$. Their period 1 budget constraint is thus:

$$c_1^I + k^{I,T} + k^{I,N} = y_1 .$$

In period 2, the same consumption good can be produced with two different technologies, associated with the two different sectors of production. In the “new” sector, production requires only capital and takes place according to a linear “ Ak ” technology. Thus per-capita output is $N = Ak^N$, where, k^N refers to per-capita holdings. The “traditional” sector has a well-behaved, constant-returns-to-scale production technology defined over (per capita) capital k^T and land l , namely $T = Q(k^T, l)$. In a slight re-formulation of the model, the two sectors could be based on technologies requiring alternative sets of skills, as in Krusell and Rios-Rull (1996).

A citizen in group I evaluates economic outcomes by the quasi-linear utility function:

$$v^I = H(c_1^I) + c_2^I , \tag{1}$$

where c_j^i is consumption in period j .

Policy and Growth Investment is governed by the relative profitability of capital in the two technologies. This will be affected by a host of different policies, including regulatory, industrial, labor-market, and commercial policies. For simplicity, we represent such detailed policies by a catch-all sectorial tax $\tau \geq 0$, levied on the output of the new sector. The per-capita tax proceeds ak^N are distributed as an equal lump-sum transfer f to every individual in the economy. The period 2 budget constraint is thus:

$$c_2^I = (1 - \tau)Ak^{I,N} + Q_k k^{I,T} + Q_l l^I + f ,$$

where we have exploited the equilibrium condition that the reward to each factor equals its marginal product.

When savings and investments are chosen, a is already known, as these choices are made after the election in the political model below. Optimal economic decisions by citizens imply:

$$H_c(e - k^I) = A(1 - \tau) = Q_k(k^T, l) .$$

Each person thus saves the same amount $k^I = k^{I,N} + k^{I,T}$, irrespective of whether she owns any land. In equilibrium, citizens must be indifferent between the two forms of investment and their net return must coincide. As H_{cc} is negative, we get a savings function, $k^I = K(\tau)$, which defines total investment as a declining function of the sectorial tax. But as $Q_{kk} < 0$, investment in the traditional sector is an increasing function of the tax on the new sector, $k^T = K^T(\tau)$. Moreover, as $Q_{kl} > 0$, the quasi-rents to land become an increasing function of the tax $R(\tau) = Q_l(K^T(\tau), l)$. A tax on the new sector with its capital-intensive technology drives down the marginal return to capital and reduces aggregate investment. But since capital flows to the traditional sector, the rents to the fixed factor rises. Thus, $R_\tau(\tau) = Q_{lk}K_\tau^T > 0$.⁴

⁴The model does not explicitly allow for a market in land. As long as there is some indivisibility in land, such that inequalities in land holdings remain, we would obtain similar conclusions with the existence of a land market as the conflicts of interest over policy would remain. In the Krusell-Rios Rull (1996) interpretation of the model the issue does not arise, as a market for human-capital specific knowledge is more difficult to imagine.

The government budget constraint is:

$$f = \tau A(K(\tau) - K^T(\tau)) .$$

Substituting this into the utility function (1) yields:

$$V^I(\tau) = F(\tau) + R(\tau)(l^I - l) ,$$

where l^I denotes per capita holdings of land in group I , and where

$$F(\tau) = H(y_1 - K(\tau)) + A(K(\tau) - K^T(\tau)) + Q(K^T(\tau))$$

is an expression for average utility.

As these indirect utility functions illustrate, the model entails a conflict of interest in policymaking between landowners and capitalists. Since $F_\tau(0) = 0$ (see below) and $R_\tau(0) > 0$, landowners with above average land holdings prefer a strictly positive value of τ . The utilitarian optimum is to set $\tau = 0$. Formally, average utility has a maximum at the point $\tau = 0$.⁵ Intuitively, the sector-specific tax depresses growth for two reasons: it distorts the accumulation as well as the allocation of capital. The best policy for the average individual is to maximize period-2 per capita output,

$$y_2 = A(K(\tau) - K^T(\tau)) + Q(K^T(\tau)) ,$$

which calls for a zero tax.

Two key observations is that economic growth

$$g(\tau) = \frac{M(y_2 - y_1)}{My_1} = \frac{1}{y_1} [A(K(\tau) - K^T(\tau)) + Q(K^T(\tau))] - 1 \quad (2)$$

is a decreasing function of the sectorial tax (for positive τ)⁶, as is the modern sector share in period 2 output

$$s^N(\tau) = \frac{Ak^N}{y_2} = \frac{A(K(\tau) - K^T(\tau))}{A(K(\tau) - K^T(\tau)) + Q(K^T(\tau))} .$$

⁵We have

$$F_\tau = (A - H_c)K_\tau + (Q_k - A)K_\tau^T .$$

From the definition of $F(\tau)$, $F_\tau = 0$ at $\tau = 0$. One can check that F is concave, so that this defines a unique optimum, under mild conditions on H and Q .

⁶In our simple two-period model, this result would hold even if total savings were inelastic in the sectorial tax rate, as the latter would still lead to misallocation of capital (and thus a lower period 2 TFP level).

2.2 The Political Model

As mentioned above, each citizen has a political type, denoted by P . We distinguish three types: Democrats, Republicans and independents, $P \in \{D, R, 0\}$. The independents make up a share σ of the population. The political types are defined with reference to the utility obtained from non-economic issues. Let $\delta(P, p)\Delta$ be the utility gain a citizen gets from having his preferred political type, p in the Governor's office. We assume that $p \in \{D, R\}$, only Democrats and Republicans are organized in parties, which field candidates for Gubernatorial office. Thus, we set $\delta(0, p) = \delta(D, R) = \delta(R, D) = 0$, and $\delta(P, P) = 1$.

The political part of the model concerns the behavior of interest groups, political parties, elected Governors, and voters. We next describe each of these political players.

Interest groups Agents who benefit from the use of capital in traditional technologies become vested interests and have strong incentives to get organized in order to protect their quasi-rents. In sectors based on new technologies, on the other hand, interest groups are harder to form. These difficulties are especially pronounced before the necessary factors or skills have been accumulated, as in this model where policy decisions precede economic decisions. Thus, we realistically assume that only economic group L lobbies the elected governor and his party, by paying a per-member transfer t in exchange for policy favors.

To simplify the analysis, we assume that the land-owning group only consists of ideologically motivated citizens from both parties. After the election, however, any political conflict is moot. Moreover, as all members own the same amount of land, there is no policy conflict within the group either. The utility level of the representative member, at the point of lobbying, is:

$$V^{P,L}(\tau, t) = V^L(\tau) - t = F(\tau) + \frac{1-\alpha}{\alpha}R(\tau)l - t. \quad (3)$$

Parties and Elected Governors Each of the two parties, D and R , comprises a small fraction of ideologically motivated citizens, with $P = D, R$. We rule out any direct vested interests in the party, by assuming that all party members are capitalists, i.e., they have economic type K . Parties pick candidates for Governor among the party members. Hence, the approach is in the spirit of the citizen-candidate models of Osborne and Slivinski (1986) and

Besley and Coate (1997). Candidate selection provides a process through which policies become credible.

After the election, the candidate elected Governor picks the policy τ and decides how much transfers to take from the special interest. Elected candidates share any transfers they receive with the party members, according to a fixed sharing rule where the party's share is given by ρ . Party members differ in the amount of "shame" they attach to any bribe received. Let q , with $0 \leq q \leq 1$, denote the discounting due to shame, so a unit of transfers has value $(1 - q)$ to a politician. In the following, we refer to q as the "quality" of a candidate. The preferences of an elected Governor, at the point where he sets policy, can thus be written as:

$$\begin{aligned} V^{g,K}(q, \tau) &= V^K(\tau) + (1 - \rho)(1 - q)t\alpha M + \Delta \\ &= F(\tau) - R(\tau)l + (1 - \rho)(1 - q)t\alpha M + \Delta . \end{aligned} \quad (4)$$

The party share of transfers is split equally between members. Let the size of the party be mM , with $m < 1$, and denote the average quality of party members by q^P . We assume that parties are "Coasian", maximizing the indirect utility of the average member. Before the election, when party p picks a candidate for Governor, average-member utility is:

$$V^{P,K}(\tau) = V^K(\tau) + \frac{\rho}{m}(1 - q^P)\alpha Mt + \delta(P, p)\Delta . \quad (5)$$

Selecting a candidate for Gubernatorial office thus amounts to picking a type q_p , so as maximize the average utility of party members.

Voters The two groups of voters correspond to the political types defined above. We assumed that a share $(1 - \sigma)$ of the population, the types $P = D, R$, strongly prefers one of the parties due to non-economic issues. We now assume this preference to be strong enough that committed citizens vote for their preferred party no matter what (i.e., the utility gain Δ is large enough to dominate any economic concerns). Of these committed voters, a fraction $(1 + \lambda)/2$ prefers party D . To fix ideas on the US South example, we consider the case where $\lambda > 0$.

The remaining share σ of voters are independent "swing voters". We have already assumed that all landowners are committed, which means that all swing voters are found among the capitalists. The payoff to a swing voter of having party $p \in \{D, R\}$ in office is $v_p = V^K(\tau_p)$, i.e. it depends solely on the party's tax policy.

To make the electoral outcome uncertain, we assume a swing voter casts her ballot for party D whenever:

$$\omega + \eta + v_D - v_R > 0 ,$$

where ω is an individual taste parameter, and η an aggregate popularity shock. If G_ω denotes the c.d.f. for ω , it is easy to show that party D wins if:

$$\sigma [1 - 2G_\omega(-\eta - v_D - v_R)] + (1 - \sigma) \lambda > 0 .$$

If, in addition ω is uniform on $\left[-\frac{1}{2\phi}, \frac{1}{2\phi}\right]$, the condition becomes:

$$\sigma\phi[\eta + v_D - v_R] + (1 - \sigma) \lambda > 0$$

and the critical value of the popularity shock is:

$$\hat{\eta} = \frac{1 - \sigma}{\sigma} \cdot \frac{\lambda}{\phi} - [v_D - v_R] .$$

Finally, we let η be uniform on $\left[-\frac{1}{2\xi}, \frac{1}{2\xi}\right]$ and define the parameter $\kappa = \frac{1-\sigma}{\sigma} \cdot \frac{\lambda}{\phi}$.

We assume that as parties pick their candidates for Governor, they know the distributions of ω and η , but not the realization of η . At that point in time, the probability that the Democratic party D wins is:

$$P_D(\kappa + v_D - v_R) = \begin{cases} 1 & \text{if } \xi[\kappa + v_D - v_R] \geq \frac{1}{2} \\ \frac{1}{2} + \xi[\kappa + v_D - v_R] & \\ 0 & \text{if } \xi[\kappa + v_D - v_R] \leq -\frac{1}{2} . \end{cases} \quad (6)$$

Hence, this probabilistic voting model predicts the electoral success of the Democrats to primarily depend on two factors. One is any utility difference in the eyes of the swing voters between the policy pursued by the Democratic and Republican candidates, $v_D - v_R$.

The second factor favoring the Democrats is their inherent electoral advantage, as summarized by the composite parameter κ , a policy-neutral measure of political competition. Note that competition is stiffer when κ is lower. According to the model, this happens when λ is lower – the Democrats have a smaller number of committed supporters. Political competition is also stiffer when σ is greater – the swing voters make up a larger fraction of the voting population (recall that we assume $\lambda > 0$). More predictable behavior of the swing voters – higher ϕ , a smaller variance of ω – also increases political competition, as would a more ideologically neutral set of swing voters.⁷

⁷Our assumption that ω is uniformly distributed is made for analytical convenience.

Post-election Politics The type of candidate and party that win the election is described by the pair $\{q_p, p\}$. In the lobbying game after the election, suppose that the elected Governor can make a take-it-or-leave-it offer to the interest group (less drastic assumptions about the bargaining would yield similar qualitative results). But the reservation utility of an interest group member cannot fall below the utility of a capitalist (e.g., because of the possibility of land sales), i.e., $V^K(\tau) = F(\tau) - R(\tau)l$. It follows from (3) that equilibrium transfers satisfy

$$t = \frac{R(\tau)l}{\alpha} .$$

In other words, the rent from land is fully captured and transferred to the Governor and his party. Since $R_\tau > 0$, higher taxes go hand in hand with higher transfers.

Using this result in (4), yields the Governor's ex post payoff

$$F(\tau) + \Delta + R(\tau)l(1 - \rho)(1 - q_p)M - 1) . \quad (7)$$

Since there is no commitment in policy, the equilibrium tax rate is the ex post optimal tax rate for the elected Governor, i.e.,

$$\tau(q_p) = \arg \max_{\tau \in [0,1]} \{F(\tau) + R(\tau)l(1 - \rho)(1 - q_p)M - 1\} .$$

It is straightforward to see that for q_p below \bar{q} , defined by $(1 - \rho)(1 - \bar{q})M = 1$, we have $\tau(q_p) > 0$. Unless his quality is very high, the elected Governor wants to protect production in the traditional sector, because he can extract the rents of protection from the landowners through the lobbying process.

Given that $q_p < \bar{q}$, $\tau(q_p)$ follows from the first-order condition:

$$\frac{F_\tau(\tau(q_p))}{R_\tau(\tau(q_p))l} = -[(1 - \rho)(1 - q_p)M - 1] . \quad (8)$$

By the second-order condition, the left-hand side of (8) is decreasing in τ . As the right-hand side is increasing in q_p , $\tau(q_p)$ must be a decreasing function. By fielding a gubernatorial candidate of lower quality (a lower q_p), a (winning) party can thus implement a higher tax rate with more protection of the traditional sector and higher transfers to party members.

If instead ω had a smooth unimodal distribution, a shift of the mass in this distribution towards the middle would raise the p.d.f. g_ω in that range. An increase in the density ϕ of our assumed uniform can be thought of as approximating such a shift towards a more ideologically neutral electorate.

Pre-election Politics The main check on rent extraction by parties is the contest over swing-voter support. Effectively, parties compete by offering equilibrium utility levels of their candidates to the swing voters. The range of utility levels $[\underline{v}, \bar{v}]$ that the party can credibly offer, however, depends on the range of ex post optimal taxes. To define this range, let

$$\underline{v} = F(\tau(\underline{q})) - R(\tau(\underline{q}))l$$

be the swing voter's payoff, when a party picks its most preferred tax rate without worrying about the electoral consequences. Thus, the party just maximizes its ex post policy preferences, which from (5) are

$$F(\tau) + R(\tau)l\left(\frac{\rho M}{m}(1 - q^P) - 1\right). \quad (9)$$

This simple problem of strategic delegation calls for a Governor type whose weight on rents in the ex post payoff (7) coincides with the party's weight in (9). The solution \underline{q} is given by

$$\underline{q} = \max\left\{1 - \frac{\rho(1 - q^P)}{m(1 - \rho)}, 0\right\}. \quad (10)$$

If ρ is close enough to one and/or the fraction of party members is small enough relative to the population, then the party would like the most corruption politician that they can find. Next, let

$$\bar{v} = F(0) - R(0)l$$

be the swing voters' highest utility level, i.e., when $\tau = 0$. By our previous results, this will be delivered by any Governor with $q_p \geq \bar{q}$. Without loss of generality, we can thus confine the party's choice of politician types to the range $q \in [\underline{q}, \bar{q}]$ or, equivalently, to the range of swing-voter utilities $v \in [\underline{v}, \bar{v}]$, where v is defined by .

$$v = F(\tau(q(v))) - R(\tau(q(v)))l.$$

We can write the (ex post) payoff to party members if they offer v to the swing voters as:

$$W(v) = F(\tau(q(v))) - R(\tau(q(v)))l\frac{(m - \rho(1 - q^P))}{m}.$$

It is straightforward to show that the derivative of this function satisfies

$$W_v(v) = 1 - \frac{\rho(1 - q^P)}{m(1 - \rho)(1 - q_p)} < 0 \quad (11)$$

on $v \in (\underline{v}, \bar{v}]$.

With these preliminaries in hand, we write the pre-election maximands of the Democratic party:

$$W(v_R) + P_D(\kappa + v_D - v_R)[\Delta + W(v_D) - W(v_R)] \quad (12)$$

and the Republican party:

$$\Delta + W(v_R) - P_D(\kappa + v_D - v_R)[\Delta + W(v_R) - W(v_D)] . \quad (13)$$

The trade-off facing parties should now be clear. By offering a higher utility to the swing voters – i.e., by picking a higher quality Gubernatorial candidate (someone with higher q_p) – they raise their chance of winning. However, this reduces the rents that they capture from the interest group, if winning (τ and hence t will be lower). The full politico-economic equilibrium reveals how this trade-off is resolved by party strategies. The only difference between the parties is captured by κ which measures the extent of political competition. As we will see, because $\kappa > 0$ the Democrats (more generally the party with an inherent electoral advantage) are less pro-growth. Intuitively, a party with a larger set of committed voters is tempted to pick politicians who care more about rents, protect the rents and the size of the traditional sector, and thereby retard growth.

2.3 Politico-economic Equilibrium

In this section, we close the model by studying its full equilibrium. We show that, over a range of values for κ , growth and the quality of politicians is increasing in the degree of political competition.

An equilibrium is a pair of the utility levels $\{v_D, v_R\} \in [\underline{v}, \bar{v}]^2$ which forms a Nash equilibrium in pre-election game between the two parties, given the equilibrium behavior of voters, interest groups and elected Governors, as described above. We will study the equilibrium of the model for the case where the reaction functions between the parties slope upwards. This is true if:

Assumption 1

$$\frac{1}{2} \cdot \frac{\rho(1 - q^P)}{(1 - \rho)m} > 1.$$

This assumption holds when m is very small and ρ is close enough to one. In this case, we have:

Lemma 1 *An equilibrium exists.*

This follows because the two parties play a game with strategic complementarities., such that Tarski's fixed point theorem applies. This result is convenient as it does not require any appeal to concavity.

Before characterizing the equilibrium, we deal with some preliminaries. It follows from (6), (12) and (13) that – at an interior equilibrium – the reaction functions of the two parties satisfy:

$$\left\{ \frac{1}{2} + \xi[\kappa - v_D(v_R) - v_R] \right\} W_v(v_D(v_R)) + \xi[\Delta + W(v_D(v_R)) - W(v_R)] = 0.$$

and

$$\left\{ \frac{1}{2} - \xi[\kappa - v_D - v_R(v_D)] \right\} W_v(v_R(v_D)) + \xi[\Delta + W(v_R(v_D)) - W(v_D)] = 0.$$

We consider equilibria for different values of parameter κ . At no loss of generality, we focus on the empirically relevant case where $\kappa > 0$, i.e., the electorate is biased towards the Democrats. We also assume

Assumption 2

$$\frac{1}{2} \cdot \frac{\rho(1 - q^P) - m}{m} > \xi\Delta.$$

Assumption 2 says that the party's marginal cost of in terms of foregone rents exceeds the marginal benefit in terms of ideological stance, at the point where no protection is given to the traditional sector. This means that (dominant) parties will tend to pick an outcome where $v_p < \bar{v}$. Clearly, Assumption 1 holds for small enough m or q^P , since then rents are concentrated in a small elite or the party members do not have large inhibitions in extracting political rents.

Consider first the extreme case where the party bias is so large that the Democrats win any election. They can thus pick their most preferred

Governor \underline{q} , offering minimum utility \underline{v} to the swing voters, and still win for sure even though the Republicans offer them maximum utility \bar{v} . Define

$$\kappa_H = \frac{1}{2\xi} + \bar{v} - \underline{v}$$

as the level of κ which guarantees victory to the Democrats in this circumstance. Then we have (proof in the Appendix):

Lemma 2 *If $\kappa \geq \kappa_H$, the Democratic party wins for sure and picks $q_D = \underline{q}$ and $v_D^* = \underline{v}$. Growth and the quality of Governors are minimized and do not depend on political competition.*

We next consider what happens when competition is sufficient to give the Republicans some chance of winning. Under Assumption 1, there is a range of κ such that the equilibrium has $v_R^* = \bar{v}$ and $\underline{v} < v_D^* < \bar{v}$. Thus, the Republicans still do exactly what the swing voters want and the Democrats pick an interior point. Define:

$$\kappa_L = \kappa_H - \frac{\Delta m}{(\rho(1 - q^P) - m)}.$$

Assumption 1 guarantees that $\kappa_L > 0$. At this level of κ , the Republicans will pick \bar{v} even if the Democrats pick \underline{v} . Thus we have:

Lemma 3 *For $\kappa \in (\kappa_L, \kappa_H)$, $\underline{v} < v_D^* < \bar{v} = v_R^*$. Over this range, stiffer political competition improves the quality of the Governor, brings about lower taxes, and raises growth. This improvement comes about only through Democratic candidates and policies.*

The Republicans (more generally the underdog party) are more pro-growth than Democrats (the overdog party), but are still at a corner solution giving swing voters what they want. Stiffer political competition now has two effects: raising the utility the Democrats offer to swing voters which increases growth when they are in office, and making it more likely that the Republicans win.

Finally, we consider the outcome when competition becomes very stiff. Under Assumption 1, we have an interior equilibrium, such that both Democrats and Republicans offering something below \bar{v} . The effect of an increase in political competition is now ambiguous (proof in the Appendix).

Lemma 4 *When $\kappa < \kappa_L$, there exists an interior equilibrium with $v_p^* \in (\underline{v}, \bar{v})$ for $p \in \{D, R\}$. In any interior Nash equilibrium, $v_D^* < v_R^*$. Hence, growth is higher with a Republican than a Democratic Governor in office.*

For small enough κ , an increase in political competition (smaller κ) leads to a higher v for the Democrats and a lower v for the Republicans. At the same time, the probability that the Republicans win is increasing. Hence, the overall effect on growth is ambiguous.

To summarize, under Assumption 1, the model predicts the following relations between political competition, political outcomes and economic growth.

- For very high κ above an upper threshold (κ_H) the Democratic party pursues its own preferred (anti-growth) policy by optimally picking bad Governors who win for sure and take bribes from the traditional sector which they protect.
- For high κ above a lower threshold (κ_L), the Republicans pick highly pro-growth policies, and the Democrats still choose bad candidates for Governor, but are somewhat constrained. As competition increases, the probability of observing a Republican Governor goes up and the Democrats improve the quality of their gubernatorial candidates. Hence, taxes go down, while the quality of politicians, the output share of the modern sector and economic growth go up with competition.
- For κ close enough to zero, the Republicans are still more pro-growth, but the party gap is more narrow. The effect of political competition on economic growth is ambiguous in this range.

3 The US States as a Testing Ground

In this section, we discuss how to apply the insights from the model to the impact of political competition on economic growth in the United States. As already mentioned in the Introduction, the main historical episode we want to exploit is the increase in political competition after the relative breakdown of the Democratic monopoly on power in the US South post World War II.

3.1 Historical background

Developments in the South Understanding economic development in the U.S. South inevitably requires a joint understanding of the society, economy and polity of these states, which all have strong historical roots. The reliance on slave labour and its attendant inequality resulted in a conservative political economy revolving around race. These forces themselves reflected the values of a politically influential, conservative, and mainly white population. Because the post-war transformation changed virtually all elements of Southern life, it is not trivial to isolate causal factors amongst social, political and economic developments. For example, Wright (1999) argues that the civil-rights movement underpinned a broader cultural shift which also influenced the economy.

Differences in (average) living standards between Southern states and the remainder of the United States are long-standing and rooted in patterns of specialization. The Civil War may have abolished slavery for good, but its aftermath left a polity dominated by the a single party – the Democrats – and an economy dominated by a single form of production – e.g., the plantation for cotton or tobacco. As noted by Naylor and Clotfelter (1975, p.190)

"Through most of its history, the South's political structure has been dominated by a conservative rural minority that sought to advance its self-interests through policies such as the perpetuation of a ready supply of cheap labor. Because of the South's rigid social structure, the rural middle class was abnormally subordinated to the planter class."

The so-called "planter class" represents the elite from a traditional sector, like the one in our theoretical model. Another group with similar goals was the owners of the traditional textile mills located in the South. These elites clearly wanted to protect their quasi-rents. As vested interests they worked to suppress public infrastructure and reduce educational attainment, neither of which was conducive to rural diversification. Slowly, the issue of bringing modern industry to the south increased in its salience and by the nineteen thirties this had become a significant issue with a number of southern states waking up to the possibility of promoting economic growth. For example, Governor White of Mississippi was elected in 1935 on a pro-industrialization ticket (see Cobb, 1993).

In the post-war period, however, Southern states began to adopt a variety of policies that were aimed at explicitly at attracting industry. This included discouragement of unionization, a relatively regressive tax base, provision of infrastructure and subsidies, particular in urban areas. By 1975, the business friendliness of the states as compiled by Fantus consulting, out three southern states – Texas, Alabama and Virginia – at the top of the list and eight southern states in the top twelve (see Cobb, 1993, Table 15).

A key element of our model is the notion that economic interests support low-quality politics producing bad politicians who are subservient to the interests of the planter class. Implicitly, we have assumed that within-party competition in a dominant party, say through primary elections, can not play the same role as between party competition in fostering a good selection of candidates.⁸ That the political domination of the South by Democrats resulted in low quality politicians being elected is indeed a resounding theme in the political-science literature. In his classic book on Southern politics, V.O. Key (1955) demonstrates just why relying on within-party politics was an imperfect substitute for between party competition in bringing forward the best candidates. According to Key, personal connections was the main selection device rather than high skill and integrity. In his treatise on US Governors, Sabato (1978, p. 122) echoes this general theme when he argues:

"A one-party system is undesirable for a state because it can easily result in second-rate government. If a party is assured a victory regardless of whom it chooses to nominate for governor, then it is likely to treat the governorship more as a "reward" for dedicated service to the party than as a public trust where the best qualified men and women should be placed."

Our theoretical analysis puts a lot of weight on the role of the Governor as determining policies that affect growth. This rhymes well with the received view that Governors in the one-party south were decisive, especially in determination of the budget (see Naylor and Clotfelter, 1975). It also fits with the more general trend emphasized by Sabato (1978) that Governor became more important in policy making. The results in Besley and

⁸Adding primaries (at least closed primaries) in the model of the previous section would not significantly change the results, under the same assumption about the motives of party members.

Case (2003) also confirm the view that the incentives facing Governors shape policy making in U.S. states.

Whether the quality of Southern political life was a symptom or a cause of economic backwardness is less than clear-cut. Moreover, this issue has not received much attention in the literature. There is no reason *per se* why the dominance of a small, mainly rural elite should prevent rural diversification and hinder economic growth. Indeed Britain's industrial revolution is a major counter-example. The key feature of our theoretical model is that the modern sector uses capital and not land. In nineteenth century Britain, the rural elite were needed as financiers in the equivalent of our modern sector creating a complementarity between landownership and industrial development. It is less clear that the Southern elites had anything like this to offer.

The trends in post-war economic developments are undisputable – income per capita in the south converging to the rest of the U.S. Income convergence surely, in part, reflects the economic force of catch-up emphasized in the growth literature (see Barro and Sala-i-Martin, 2004, for an overview and applications to the U.S. States).

The Voting Rights Act The trends in political competition are also dramatic. Since the 1880s, the white Democratic majority in the South had kept blacks largely disenfranchised through a variety of methods. These included discriminatory regulatory measures such as “grandfather clauses”, that reserved the franchise to individuals whose grandparents had that right (before the Civil War). Other requirements for voter registration did not discriminate *de jure*, but *de facto*. *Poll taxes* might have been relatively low, but they were still significant for poorer voters; moreover, tax liabilities were cumulative over years and elections, and could only be paid at a few specific dates and collection points very inconvenient for prospective black voters. *Literacy tests* were used and administered in a very discretionary fashion, as shown by the description in Mackaman (2005) of the rules in a county where, in 1960, only 3.3% of registered voters were black despite the voting-age population being 58,7% black.

"In Selma, the county seat of Dallas County, for example, voter registration took place only two days per month. An applicant was required to fill in more than 50 blanks, write from dictation a part of the Constitution, answer four questions on

the government process, read four passages from the Constitution and answer four questions on the passages, and sign an oath of loyalty to the United States and Alabama. ... Between May 1962 and August 1964 only 8.5 percent (93 out of 795) of blacks who applied to register were enrolled, while during the same period 77 percent (945 of the 1232) applications from whites were accepted."

The 1965 Voting Rights Act (and its 1970 amendment) passed by the US Congress gave the Attorney General authority to appoint federal examiners to oversee voter registration in areas using literacy or other qualification tests and where less than 50% of the voting age population was registered. The Attorney General could also seek legal action against poll taxes as a prerequisite for voting in state and local elections, and the Federal Supreme Court indeed ruled such usage illegal in a 1966 decision.⁹ Just before this, Supreme Court judgements had also dealt with malapportionment of electoral districts, which over-represented rural areas.¹⁰

There is no question that the federal interventions through legislation and adjudication drastically changed the political landscape of the South. Registration rates among blacks went up from about 20% on average, and 5-10% in states such as Alabama and Mississippi, to above 60% over a few years. At the same time, the electoral support for the Republicans went up very significantly, so as to raise drastically our measures of political competition displayed in Figures 1 and 2 and described in the next subsection.

Can we treat the federal interventions striking a blow to the Democratic monopoly on power in the South as exogenous to the outcome variables of interest – such as Southern policies, quality of politicians, and economic growth? We would like to argue that, largely, the answer is yes, and that our empirical strategy takes care of any remaining simultaneity. The most serious challenge is that the Civil Rights Movement of the 1960s may have caused both political and economic change. For some of the effects predicted by the model, however, this is hardly plausible. The Civil Rights Movement, as such, surely did not carry the seeds of tax cuts or regulations favoring new

⁹Harper v. Virginia State Board of Elections (1966). The Twentyfourth amendment to the US Consitution in 1964 had made poll taxes illegal for national elections.

¹⁰Baker vs. Carr (1963) and Reynolds vs. Simms (1964).

businesses.¹¹

The argument may have more force when it comes to state incomes and growth – one could hypothesize that removal of discrimination in Southern labor markets following the Civil Rights Movement may have raised output and income. We note, however, that economic historians have not been able to identify large economic effects of these events (see e.g., the overview in Wright, 1999).

One could perhaps also claim that the Voting Rights Act was part of a premeditated federal strategy to raise living standards in Southern states. But this claim is unconvincing. In his 1965 State of the Union Address, which otherwise outlined a very ambitious legislative agenda for the coming term, newly elected President Lyndon Johnson did not mention anything whatsoever about black voting rights. Neither did Senate minority leader Everett Dirksen – whose support would become critical, given the resistance of Southern Democrats – in speeches about his legislative ambitions at the same time. It appears that the legislation was initiated very quickly, in response to the graphic media coverage of brutal crackdowns, on March 7, 1965, by state troopers on the protesters against political discrimination who were marching from Selma, AL to the state capital of Montgomery.¹²

Moreover, we show in the next section that our results survive a number of robustness checks for simultaneity between federal measures and Southern economic developments, such as allowing for flexible income or growth trends specific to Southern states.

In summary, we believe that the federal measures described in this section can serve as a valid instrument for changes in political competition. Our contribution is thus to link the economic and political developments in the South in the last few decades, and to suggest that the stiffer political competition brought about by federal legislation and adjudication may be an important explanation for the income convergence of the Southern states.

3.2 Data

We have collected our data from a number of sources. We measure state economic performance – corresponding to y_2 and $g(\tau)$ in the model – by per

¹¹Recall that Husted and Kenny (1997) used the federal interventions in the 1960s to explain how an increase in the franchise might trigger hikes in welfare spending.

¹²See Mackaman (2005) for an account of the political events in 1965 and the adoption of the Act.

capita state personal income, provided by the Bureau of Census in electronic form and are available from 1929 onwards. The structure of production is measured via sectoral income shares, obtained from the same source; we mainly identify $1 - s^N(\tau)$ in the model with the share of non-farm income in total personal income. All nominal variables are deflated with the CPI for all urban consumers with the base year 1982-1984 provided by the Bureau of Labour Statistics.

The empirical work also demands a proxy for κ in the model, the composite parameter for the dominant party’s electoral advantage. Our principal measure of this comes from data in in Ansolabehere and Snyder (2002) who collected election results for a number of directly elected state executive offices other than the governorship, such as Lieutenant Governor, Secretary of State, Attorney General, etc. The results for these elections should be a good proxy for the relative strength of the Democratic and Republican party, because name recognition rates for such lower-state offices are typically very low implying that ballots are mainly cast along party lines. Let d_{st} be the vote share of the Democrats in the lower-office elections in state s at time t . While we formulated our argument for the case where the Democrats are ahead, several states – such as Iowa, Kansas, South Dakota and Wyoming – have been solidly Republican over the entire time period that we study. Thus, we use a “party-neutral” measure of competitiveness:

$$p_{st} = -abs(d_{st} - 0.5) .$$

A value of p_{st} close to zero means a high level of political competition (corresponding to a low value of κ). This variable has a distribution skewed to the left: its mean and standard deviation are both -0.084 . The maximum value in the sample is -0.000 (Illinois in 1998), while the minimum is -0.447 (Texas in 1940). We also use a more conventional measure of political competition, namely the combined seat advantage of the stronger party in the state senate and house combined, as compiled by Besley and Case (2003) based on the reports in the *Book of the States*.¹³

Obviously, these measures of (lack of) political competition may not be exogenous to the variables of interest. To address the prospective simultaneity, we exploit the federal legislation and adjudication discussed in the previous subsection. Because our estimates will be identified entirely from

¹³The index is closely related to a well-known measure in the political science literature known as the “Ranney index”.

the time variation within states, we can use information on the use of poll taxes and literacy tests to isolate an exogenous variation in political competition (corresponding to a change in κ in the model). As argued above, changes in the uses of poll taxes and literacy tests as requirements for voting at the state level were largely driven by the federal Voting Right Acts of 1965 and 1970, rather than state-specific or region-specific developments. To gauge these changes, we use data originally collected by Husted and Kenny (1997) and extended in Besley and Case (2003). These take the form of a binary indicator for the use of poll taxes, and a continuous indicator for the percentage of the state population living in areas affected by the federal legislation concerning literacy and qualifying tests. In the first years when these variables are available (1929 and 1950, respectively), poll taxes are used in 10 states, while literacy and qualifying tests are used in 15 states.

We also want to investigate the specific channels through which political competition affects economic growth and the composition of output. To capture aspects of economic policy (corresponding to τ in our model), we analyze some components of the state budgets, such as total taxes and corporate income taxes. This data was provided by the Bureau of the Census in electronic form and originally appeared in the *State Government Finances* series of the Census; it is available on a yearly basis from 1950 onwards and for selected years between 1942 and 1950. In addition, we exploit the presence of so-called right to work laws – which make it illegal to demand that employees join a union, to deduct union fees automatically from wages, etc. We collected data on the year when a state first passed (if at all) a right to work law.¹⁴ The first state to pass such a law was Arkansas (in 1944), while 22 states have one by the end of the sample (in 2001).

Finally, to measure the quality of gubernatorial candidates in terms of susceptibility to pressure from vested interests in traditional sectors (the parameter q_p in the model), we estimate a set of Governor fixed effects. Each governor's party affiliation and tenure in office were taken from Congressional Quarterly (1998). The estimation of the Governor fixed effect is discussed in the following section.

¹⁴Information on the use of right-to-work laws was taken from the webpage of the National Right to Work Legal Defense Foundation at <http://www.nrtw.org/rtws.htm>.

4 Empirical evidence

4.1 Basic Specification and Results

Our basic results concern the relationship between political competition, the level of income per capita and economic growth. Our most basic specification is:

$$y_{st} = \zeta_s + v_t + \chi p_{st} + \varepsilon_{st} , \quad (14)$$

where y_{st} is the log income per capita in state s in year t , ζ_s is a state fixed effect and v_t is a year dummy variable and p_{st} our political competition measure. When it comes to the error term ε_{st} , we allow for arbitrary state-specific serial correlation properties, as we always report robust standard errors clustered by state. To allow for convergence in income among states, we typically include lagged income on the right hand side, and estimate this relationship in the following way:

$$g_{st} = \zeta_s + v_t + \beta y_{st-1} + \chi p_{st} + \varepsilon_{st} \quad (15)$$

where g_{st} is the annual growth rate in state s at time t , and where $\beta < 0$ indicates income convergence. There are well-known issues from dynamic panels with fixed effects, but the large number of time periods we have (at least 50) makes us confident that any bias is of small order.

We run these equations using OLS and using an IV specification where the first stage equation is:

$$p_{st} = f_s + n_t + \theta z_{st} + \mu_{st} . \quad (16)$$

As explained above, the instruments z_{st} indicate whether voting in state s in year t requires passing a literacy test and/or paying a poll tax. As we shall see, the first stage regression reveals a strong impact of poll taxes and literacy tests on competition. In terms of our model and for the case of the south, we can interpret this as follows. Enfranchising many black voters raises the parameter σ – the share unattached voters. It may also have reduced λ , in so far as black voters became committed Republicans – given the Democrats record on race – or have raised ϕ , to the extent that the distribution of the party preferences of black swing voters on non-economic issues was more neutral than that of white swing voters (recall the discussion

in Section 2.2)¹⁵

Estimation results are collected in Table 1. Column (1) considers the full period over which we have data, namely 1929-2001, and displays estimates of (14) by OLS. It shows a strong positive correlation between political competition (as measured by the Ansolabehere and Snyder data) and income per capita. The IV version corresponding to (16) and (14) is found in columns (2) and (3). Clearly, the poll tax (the only one of our instruments available back to 1929) is strongly associated with lack of political competition. Moreover, the IV estimate suggests a causal effect of political competition on per capita state income. This estimate is precise and considerably higher than the OLS estimate, as would be the case if political competition is measured with error.

Columns (4) and (5) shows the corresponding OLS and IV specifications when we replace the levels specification of state income, with the growth specification in (15). The negative coefficient on lagged income suggests quite rapid convergence of income per capita.¹⁶ To a large extent, this income convergence reflects the catch-up of the southern states with the rest of the U.S. Nevertheless, we still find a strong effect of political competition. The implied long-run effects on income per capita, namely $\chi/(1 - \beta)$, is similar to the one obtained from the static specifications. And the IV estimate continues to exceed the OLS estimate by a factor of three.

Columns (6) and (7) shows the first and second stage of the IV for the period 1950-2001, when our second instrument – the use of literacy tests – is also available. While the two instruments are quite strongly correlated (on the order of 0.38), the F-statistic of excluding them from the first stage suggests they are not very weak. The coefficient on political competition in the growth regression is identical to the one estimated for the longer time period. Column (8), finally, shows an estimate of the reduced form, when we estimate the effect on income growth of our two instruments. Despite their

¹⁵It should also be remembered that in the 1960s, the civil rights act was making it more difficult for southern Democrats to maintain their stance on race. Thus the abolition of poll taxes and literacy tests could be correlated with other forces that weakened the Democratic hegemony.

¹⁶Convergence coefficients tend to be about 2-3% when estimated from cross-sectional national or regional data (see Barro and Sala-i-Martin, 2004), but much higher for panel data. For example, our estimated convergent coefficients around 10% are comparable to those reported by Caselli, Esquivel and Lefort (1996). It is possible, however, that business cycle patterns in our yearly data bias this coefficient upward.

collinearity, each instrument has an effect on growth that is individually significant.

The basic results reported in this section show that political competition has a strong positive effect on economic performance. This effect is not only precisely estimated but also quantitatively important. A increase in political competition corresponding to one standard deviation (about 0.08) appears to raise personal income by about 12.5% in the long run $((e^{0.08 \cdot 1.488} - 1) \cdot 100)$, whereas an increase corresponding to the full range of our sample (0.45) would raise income by a whopping 90%. More interesting, perhaps, is the estimated effect of the Voting Rights Act. The results from the 1st and 2nd stage of our IV in columns (2) and (3) suggest an effect on the order of 25% of income. The estimates in the following columns imply a similar magnitude. Our theory suggests that such improvements in income came about because higher quality politicians choose more growth-friendly policies. The next subsection asks whether this mechanism finds support in the data.

4.2 Inspecting the Mechanism

Thus, we turn to the mechanism whereby political competition improves economic performance. As in the model, we analyze both policy outcomes and the quality of governors.

Policy To study policy, we run equations of the form:

$$a_{st}^k = \zeta_s^k + v_t^k + \chi^k p_{st} + \varepsilon_{st}^k, \quad k = 1, 2, \dots, K, \quad (17)$$

where a_{st}^k is the k th policy outcome variable, ζ_s^k is a state fixed effect and v_t^k a year effect. As in the previous section, we estimate robust standard errors allowing for clustering at the state level.

Which policy variables, do we look at? Column (1) in Table 2 reports the OLS estimate of χ^k in (17), when a^k is set equal to total taxes as a share of state income. Using total taxes focuses on the role of state policy in affecting overall accumulation, one of the channels whereby a in our model diminishes growth. Clearly, more political competition is correlated with a lower overall burden of taxation. Column (2) reports the IV estimate, when we instrument political competition by the use of poll taxes, in the same way as in the previous subsection. The resulting estimate is very similar to the OLS estimate.

Columns (4) and (5) report OLS and IV estimates of χ^k , when is set equal to corporate taxes (again, normalized by state income). While the estimated coefficients are negative, they are not significantly different from zero. Finally, columns (6) and (7) replace taxes by labor market regulation in the form of Right to Work laws. These laws indeed seem strongly dependent on political competition.

Quality of Governors The model predicts Governor quality to be a key determinant of policy and growth. To address this prediction, we first test for evidence of Governor quality, as such, and then ask whether quality is indeed related to political competition. During the period 1950 to 2000, there were 753 different Governors in office in the 48 continental states. We now allow for the possibility that the quality of Governors has an impact on income per capita in their state. This is similar in spirit to Bertrand and Schoar (2003) who test for the importance of CEO's by estimating CEO fixed effects for a set of U.S. firms.

Specifically, we estimate the following empirical model:

$$y_{gst} = \gamma_g + v_t + \vartheta_s t + \varepsilon_{gst} , \quad (18)$$

where y_{gst} is now the level of income per capita with Governor g in state s in year t and γ_g is a Governor fixed effect. As above, v_t is a year indicator, while the new parameter ϑ_s allows for a state-specific time trend. The standard errors are estimated robustly and clustered by state. The resulting test is quite stringent, because a “high-quality” Governor has to deliver increases in income per capita above trend. Note, however, that since each Governor serves only in one state, the average quality of the Governors is “absorbed” in a state fixed effect, which we exclude from this regression. We also estimated “growth” specifications:

$$g_{gst} = \gamma_g + v_t + \beta y_{st-1} + \varepsilon_{gst} \quad (19)$$

again with standard errors estimated robustly and clustered by state.

To assess whether Gubernatorial quality “matters”, we test the equality of γ_g *within a state*. This allows us to test whether all Governors are of uniform quality. Figure 4 shows the distribution, by state, of the F-statistics of this test from (19).¹⁷ Even though the degrees of freedom vary across states,

¹⁷The results are similar for the estimated level fixed effects. The correlation in the F-statistics is 0.64.

it is evident already from this graph that these are highly significant. In fact, there is no case in which we can reject the hypothesis that there is no difference in quality of Governors. This presents quite strong evidence of an important quality dimension in holding political office.

An interesting by-product of the approach is that we can look at how specific governors perform. This is particularly interesting among those who go on to higher office, like the Presidency. Among recent presidents, we find that Bill Clinton and, especially, George W. Bush were above-average performers while Ronald Reagan was a below-average performer, relative to other chief executives in their states. Figure 5 displays a histogram of the estimated fixed effects on the growth rate of personal income for our entire sample of Governors, each expressed as an annualized mean relative to the state mean.¹⁸ The graph gives a feel for the general distribution of Gubernatorial quality uncovered by this approach.

Even though these results are highly suggestive, there is no guarantee that they are not the result of luck – i.e., some Governors benefit from a series of positive exogenous shocks through their terms, while others suffer from negative ones. However, our model suggests that quality should be systematically related to selection, which in turn should be determined by political competition in the state at the time the Governor is elected. Thus, for example, we would expect the U.S. south to display a rising pattern of Gubernatorial fixed effects as a symptom of improving quality. We investigate this as follows. Let o be an index of the order in which a Governor comes in our sample within a state. Since Governors enter at different dates in different states, this is a natural metric.¹⁹ Let $\hat{\gamma}_{gso}$ be the Governor fixed effect for Governor g , estimated from (18), of order o in state s . We then run the following regression for the estimated effects in (18) and (19):

$$\hat{\gamma}_{gso} = \varphi_s + \omega_o + \rho p_{gso} + \nu_{gs} , \quad (20)$$

where ω_o is an order indicator, φ_s is a state indicator and p_{gso} is the state of political competition at the date of the Governor’s first election. The error term ν_{gs} is estimated with robust standard errors clustered at the state level. Now, if the quality of the Governor is affected by political competition, we should find $\rho > 0$.

¹⁸The graph omits the 59 (out of 443) governors in the underlying regression, who have served for only one or two years.

¹⁹The results are similar if we use year effects for the date at which the Governor was first elected.

Table 3 shows our estimates of (20) to test for a positive relationship between political competition and Governor quality. In column (1), we report the OLS results. They indicate a significant positive association. Column (2) introduces poll taxes and literacy tests as instruments for competition and – in line with the results shown earlier – the coefficient becomes more precisely estimated and increases in size. In column (3), we look at the “reduced form” effect of the poll tax and literacy tests on Gubernatorial quality. Again these show that there is a significant reduced form relation. These specifications are repeated in columns (4)-(6) for Gubernatorial growth effects. The same pattern of significance is observed and the order of magnitude of the effects is similar. Overall, these results suggest that stiff political competition when Governors are elected seems to have a positive effect on their economic performance in office.

Further Implications of the Theory Table 4 investigates some further implications of the model in Section 2. We begin with the specific implication that higher political competition changed policy so as to allocate resources away from the main traditional sector, namely agriculture – cf. the result concerning $s^N(\tau)$ at the end of Section 2.1. To test this prediction, we use the share of non-agricultural income in state income as the left hand side variable. Columns (1) and (2) shows that political competition is indeed positively correlated with a greater share of non-agricultural income, and that this also holds when political competition is instrumented with poll taxes and literacy tests.

The model also predicted a possible non-linear relationship between political competition and economic performance – cf. the three regions for κ in Section 2.3. To approach this issue, we create three indicator variables. The first takes a value of one when the state is in the top 25% of political competition scores for our sample, the second a value of one when it is in the range 25%-75% and the third when the state is in the lowest 25%. These indicators crudely correspond to the three regions suggested by the theory. Once we omit the low-competition indicator, we expect to see the other two indicators to come out positive and significant. This is indeed confirmed in column (3) of Table 4. Moreover, the coefficients suggest a heterogenous treatment effect in line with the theory, since being in the highest category of political competition is slightly better for performance than being in the

middle category.²⁰

Our model supposed that the political competition shapes the incentives for a party selecting the quality of its Gubernatorial candidates. In the model, these incentives do not vary systematically by party. We now take this idea more seriously by splitting up our measure of political competition, defined in Section 3.2, by party. Thus, we multiply the competition measure with an indicator for the Governor’s party, creating separate measures for Democratic and Republican party advantage. We then put these measures into the regression, along with a control for whether the Governor is a Democrat or a Republican. The results are found in columns (4) and (5) of Table 4. For income as well as growth, both coefficients are negative indicating that the negative effect of weak political competition exists regardless of which party dominates. However, there is some evidence that it is the diminishing political advantage of Democratic Governor’s that is more important (in line with the discussion in Section 2.3, given that Democratic party dominance is more important empirically). As an aside, we note that being a Democratic Governor appears to be positively correlated with growth as long the political advantage is small.

Finally, our model focused on political competition as the sole difference between parties. However, the stereo-typical view of the Republican party is that it is more pro-business. Since the increased political competition in the South is mainly about the growth of Republicanism, we need our results are not driven by a “party-preference” effect. To investigate this, the remaining columns of Table 5 add in measures of political control in state legislatures to some of our previous specifications. In columns (5)-(7), we find that neither the party of the Governor nor which party controls the state legislatures is correlated with the level or growth rate of personal income. An F-test comfortably rejects the significance of these variables. The final column of the table shows that the party-control variables do have some bearing on the share of taxes in state income, but that the relationship with our measure of political competition remains strong independently of these effects.

²⁰ An F-test (p-value 0.055) confirms that we can just reject the hypothesis that the two coefficients are identical.

4.3 Robustness Checks

Finally, we present a few robustness checks of our results, with the main focus on the validity of our empirical strategy in exploiting the mid-1960s political reforms at the Federal level. In column (1) of Table 5, we take much more literally the importance of the 1965 Voting Rights Act and its timing. Four states – Alabama, Mississippi, Texas and Virginia abolished their poll taxes directly in response to the Voting Rights Act. We create an indicator variable for these four states, which takes the value one after 1965 and zero before, and then use this as our sole instrument for political competition. Hence our identification is coming solely through these four states. This indicator variable is strongly significant in predicting the change in political competition. Moreover, the IV estimate in column (1) finds political competition to be highly significant with a magnitude of the effect, which is similar to column (3) in Table 1.

As discussed in Section 3, the most serious challenge to our results (on economic performance) may be that some underlying factor, such as the Civil Rights movement, drive the political events we use as instruments as well as the economic convergence we seek to explain. Our second robustness check thus tests the validity of the timing of the changes in voting law. We create ten-year leads and lags of our instruments and include them along with the “true” variables in the reduced-form regression for personal income per capita to test whether the “false” variables better predict the change in economic performance. As shown in columns (2) and (3), the false variables are not jointly significant, while the true poll taxes and literacy test variables remain significant, whether we take ten-year leads or lags. This exercise confirms that the timing of the economic change agrees with the timing predicted by our instruments.

Columns (4) and (5) further address the concern of a common omitted factor driving both economic performance and political competition. To this end, we create a separate set of year indicators for each of the four main census regions. Including them in our first-stage as well as our second-stage specification, we thus allow for separate and very flexible time trends for the South (as well as the other regions). Inevitably, we expect this to reduce the power of the political competition variable in explaining economic performance since most of our identification now comes from the variation observed within each census region. It is thus encouraging that the size and sign of the coefficients remain robust, even though the coefficients are now

only significantly different from zero at the 10% level.

Finally, we have measured political competition by the variables constructed by Ansolabehere and Snyder (2002) throughout the paper. What happens if we instead use the alternative measure discussed in Section 3.2 based on seat shares in the state house and senate? Most of our earlier results can be replicated under this alternative measurement, with the qualification that it is only available from 1950 and onwards. Thus, columns (6) and (7) of Table 5 illustrate how the main results on income from Table 1 remain robust.

5 Final Remarks

How politics and economics interact in promoting the quality of government and economic performance is of first order importance. This paper argues that the structure of political competition, and a fortiori the underlying political institutions, can have a profound impact on economic life. Two forces take center stage in our story: attachment to parties on the basis of core non-economic issues, and support on such issues skewed towards parties. Even if the electoral institutions of democracy are nominally functioning, such forces create an entree for malign political influences – in this case those who wish to protect their quasi-rents.

The results demonstrate convincingly that the extent of political competition is a factor in shaping policy and economic outcomes. If economists wish to understanding patterns of long-run development, it is often inescapable to study their political preconditions.

Our analysis also casts light on efforts to understand the differences between political systems across the globe. In formal terms, the southern United States had many institutions in common with the rest of the country. But small differences endured and historical factors shaped the way in which these institutions produced policy outcomes. Trying to understanding the performance of democracy without taking these into account would be quite misleading. Clearly a great deal more research is needed to understand the heterogenous performance of political institutions, due to interactions with social and historical factors.

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6 Appendix: Proofs

Proof of Lemma 2: Sketch of the argument: First, we show for all $\kappa > \kappa_L$, the Republicans will pick $v_R = \bar{v}$. To see this, observe that at $v_R = \bar{v}$ and $v_D = \underline{v}$, the change in the payoff of the Republican party from a small change in v is:

$$\begin{aligned} & - \left[\frac{1}{2} - \xi [\kappa + \underline{v} - \bar{v}] \right] \frac{\rho(1 - q^P) - m}{m} + \xi \Delta > \\ & - \left[\frac{1}{2} - \xi [\kappa_L + \underline{v} - \bar{v}] \right] \frac{\rho(1 - q^P) - m}{m} + \xi \Delta = 0. \end{aligned}$$

Moreover, strategic complementarity implies that this inequality holds for all $v_D > \underline{v}$. We now show that it is optimal for the Democrats to pick $v_D^* < \bar{v}$. Suppose not, such that $v_D = \bar{v}$. Then, a small change in v_D alters the Democratic payoff as follows:

$$- \left[\frac{1}{2} + \xi \kappa \right] \frac{\rho(1 - q^P) - m}{m} + \xi \Delta < - \frac{1}{2} \cdot \frac{\rho(1 - q^P) - m}{m} + \xi \Delta < 0$$

where the last inequality follows from Assumption 1. Thus, the best response for the Democrats must be $v_D < \bar{v}$. To see that $v_D > \underline{v}$, observe that $W_v(\underline{v}, \rho) = 0$ – this follows from evaluating (11) at the point $q_p = \underline{q}$. To prove the last statement, observe that v_D is decreasing in κ .

Proof of Lemma 4: Sketch of the argument: To prove the first part, observe that there exists $\kappa > 0$ such that:

$$- \left[\frac{1}{2} - \xi [\kappa + v_D - \bar{v}] \right] \frac{\rho(1 - q^P) - m}{m} + \xi \Delta < 0$$

by Assumption 1. (Needs a bit of work, it could be that we look at the case $\kappa = 0$ and then argue by continuity from there).

Now we show that we can't have $v_D^* > v_R^*$. Suppose that would be the case. Then we would have

$$\left\{ \frac{1}{2} + \xi [\kappa + v_D^* - v_R^*] \right\} W_v(v_D^*) + \xi [\Delta + W(v_D^*) - W(v_R^*)] = 0$$

and

$$\left\{ \frac{1}{2} - \xi [\kappa + v_D^* - v_R^*] \right\} W_v(v_R^*) + \xi [\Delta + W(v_R^*) - W(v_D^*)] < 0.$$

But since W is concave, these expressions imply $v_D^* < v_R^*$, a contradiction.

Table 1 Basic Results on Political Competition and Economic Performance

	(1) Personal income	(2) Political competition	(3) Personal income	(4) Growth of personal income	(5) Growth of personal income	(6) Political competition	(7) Growth of personal income	(8) Growth of personal income
Political competition	0.427*** (0.096)		1.488*** (0.352)	0.030*** (0.012)	0.112*** (0.046)		0.117*** (0.046)	
Lagged income				-0.094*** (0.014)	-0.112*** (0.016)		-0.124*** (0.031)	-0.107*** (0.026)
Poll taxes		-0.156*** (0.024)				-0.095*** (0.033)		-0.011*** (0.004)
Literacy tests						-0.108* (0.058)		-0.008* (0.004)
Method	OLS	OLS	IV	OLS	IV	OLS	IV	OLS
Sample	1929-2001	1929-2001	1929-2001	1930-2001	1930-2001	1950-2001	1950-2001	1950-2001
First-stage F-Statistic			40.78		59.21		8.37	
Observations	3463	3463	3463	3415	3415	2370	2367	2367
R-squared	0.995	0.489	0.992	0.770	0.765	0.394	0.576	0.598

Notes: Variables explained in text. All specifications include state and year indicator variables. In parentheses, standard errors, which are robust to heteroskedasticity and adjusted for clustering at the state level; * denotes significant at 10%; ** significant at 5%; *** significant at 1%

Table 2 The Impact of Political Competition on Economic Policy

	(1)	(2)	(3)	(4)	(5)	(6)
	Total taxes as share of state income	Total taxes as share of state income	Corporate taxes as share of state income	Corporate taxes as share of state income	Right to work laws	Right to work laws
Political competition	-0.036*** (0.010)	-0.045*** (0.011)	-0.005 (0.004)	-0.006 (0.005)	0.786*** (0.281)	1.802*** (0.703)
Method	OLS	IV	OLS	IV	OLS	IV
Sample	1942-2001	1942-2001	1942-2001	1942-2001	1929-2001	1929-2001
First Stage F-Statistic		60.07		67.08		40.78
Observations	2727	2727	2233	2233	3463	3463
R-squared	0.704	0.701	0.344	0.344	0.750	0.718

Notes: Variables explained in text. All specifications include state and year indicator variables. In parentheses, standard errors, which are robust to heteroskedasticity and adjusted for clustering at the state level; * denotes significant at 10%; ** significant at 5%; *** significant at 1%

Table 3 Determinants of Gubernatorial Quality

	(1) Governor income per capita	(2) Governor income per capita	(3) Governor income per capita	(4) Governor growth per capita	(5) Governor growth per capita	(6) Governor growth per capita
Political competition	0.189** (0.080)	0.443*** (0.148)		0.145*** (0.028)	0.454*** (0.112)	
Poll tax			-0.061** (0.029)			-0.051*** (0.014)
Literacy test			-0.006 (0.024)			-0.029** (0.012)
Method	OLS	IV	OLS	OLS	IV	OLS
Sample	48 States 457 Governors	48 States 443 Governors	48 States 443 Governors	48 States 457 Governors	48 States 443 Governors	48 States 443 Governors
First Stage F- Statistic		11.99			11.99	
Observations	457	443	443	457	443	443
R-squared	0.952	0.950	0.953	0.886	0.829	0.894

Notes: Variables explained in text. All specifications include state and year indicator variables. In parentheses, standard errors, which are robust to heteroskedasticity and adjusted for clustering at the state level; * denotes significant at 10%; ** significant at 5%; *** significant at 1%

Table 4 Further Implications of the Theory

	(1) Share of non- farm income in total income	(2) Share of non- farm income in total income	(3) Personal income	(4) Personal income	(5) Growth of personal income	(6) Personal income	(7) Growth of personal income	(8) Total taxes as share of state income
Political competition	0.108*** (0.035)	0.226** (0.104)				0.291*** (0.061)	0.031** (0.012)	-0.031*** (0.008)
Democratic governor advantage				-0.290*** (0.057)	-0.030** (0.013)			
Republican governor advantage				-0.051 (0.060)	-0.028* (0.015)			
Democratic governor				0.002 (0.005)	0.002** (0.001)	-0.006 (0.005)	0.001 (0.001)	0.000 (0.001)
Democrats control house and senate						-0.005 (0.008)	0.001 (0.001)	0.002** (0.001)
Republicans control house and senate						0.012 (0.008)	0.000 (0.001)	-0.002* (0.001)
Lagged income					-0.103*** (0.027)		-0.099*** (0.025)	
High political competition			0.051*** (0.015)					
Middle political competition			0.040*** (0.013)					
Method	OLS	IV	OLS	OLS	OLS	OLS	OLS	OLS
Sample	1929-2001	1929-2001	1929-2001	1950-2001	1950-2001	1950-2001	1950-2001	1950-2001
First Stage F-stat		40.78						
Observations	3414	3414	3481	2352	2352	2368	2368	2368
R-squared	0.749	0.739	0.994	0.997	0.592	0.997	0.589	0.829

Notes: Variables explained in text. All specifications include state and year indicator variables. In parentheses, standard errors, which are robust to heteroskedasticity and adjusted for clustering at the state level; * denotes significant at 10%; ** significant at 5%; *** significant at 1%

Table 5 Robustness

	(1) Personal income	(2) Political competition	(3) Political competition	(4) Personal income	(5) Personal income	(6) Personal income	(7) Personal income
Political competition	1.142*** (0.363)			0.203* (0.106)	1.061* (0.573)	0.592*** (0.102)	2.028*** (0.457)
Poll taxes		-0.078*** (0.021)	-0.054** (0.026)				
Literacy tests		-0.108*** (0.041)	-0.077** (0.037)				
Poll taxes (10-year lead)		-0.054 (0.037)					
Literacy tests (10-year lead)		-0.003 (0.069)					
Poll taxes (10-year lag)			-0.061* (0.036)				
Literacy tests (10-year lag)			-0.036 (0.044)				
Specification	Four core states	Ten year leads	Ten year lags	Year * Region included	Year * Region included	Alternative Competition Measure	Alternative Competition Measure
Method	IV	OLS	OLS	OLS	IV	OLS	IV
Sample	1929-2001	1950-2001	1950-2001	1929-2001	1929-2001	1950-2001	1950-2001
First-stage F-statistic	46.19				9.04		11.36
Observations	3463	2370	2370	3463	3463	2372	2372
R-squared	0.994	0.397	0.415	0.997	0.995	0.997	0.994

Notes: Variables explained in text. All specifications include state and year indicator variables. In parentheses, standard errors, which are robust to heteroskedasticity and adjusted for clustering at the state level; * denotes significant at 10%; ** significant at 5%; *** significant at 1%

Figure 1

Political competition by decades

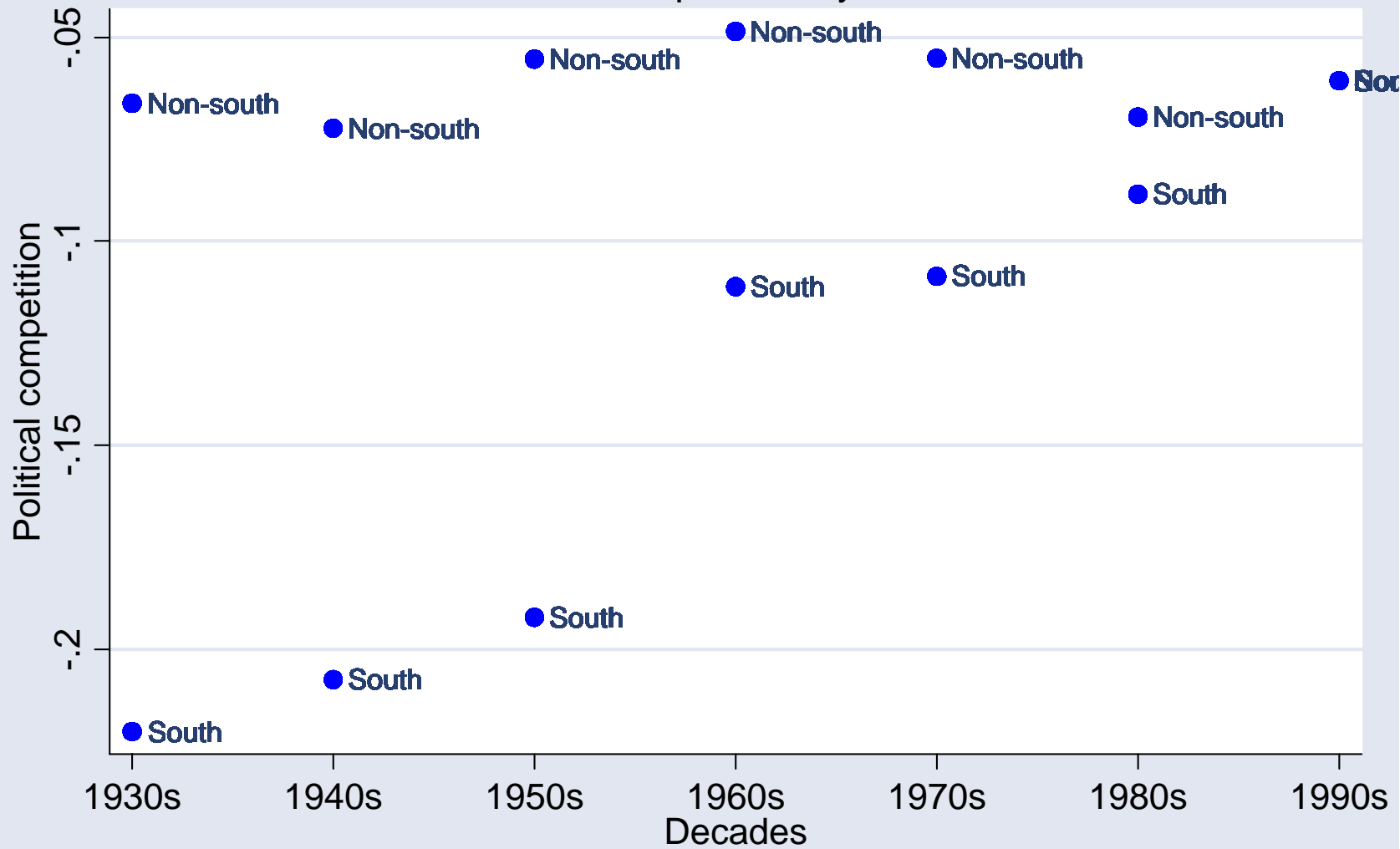


Figure 2

Political competition and income in Southern states relative to US

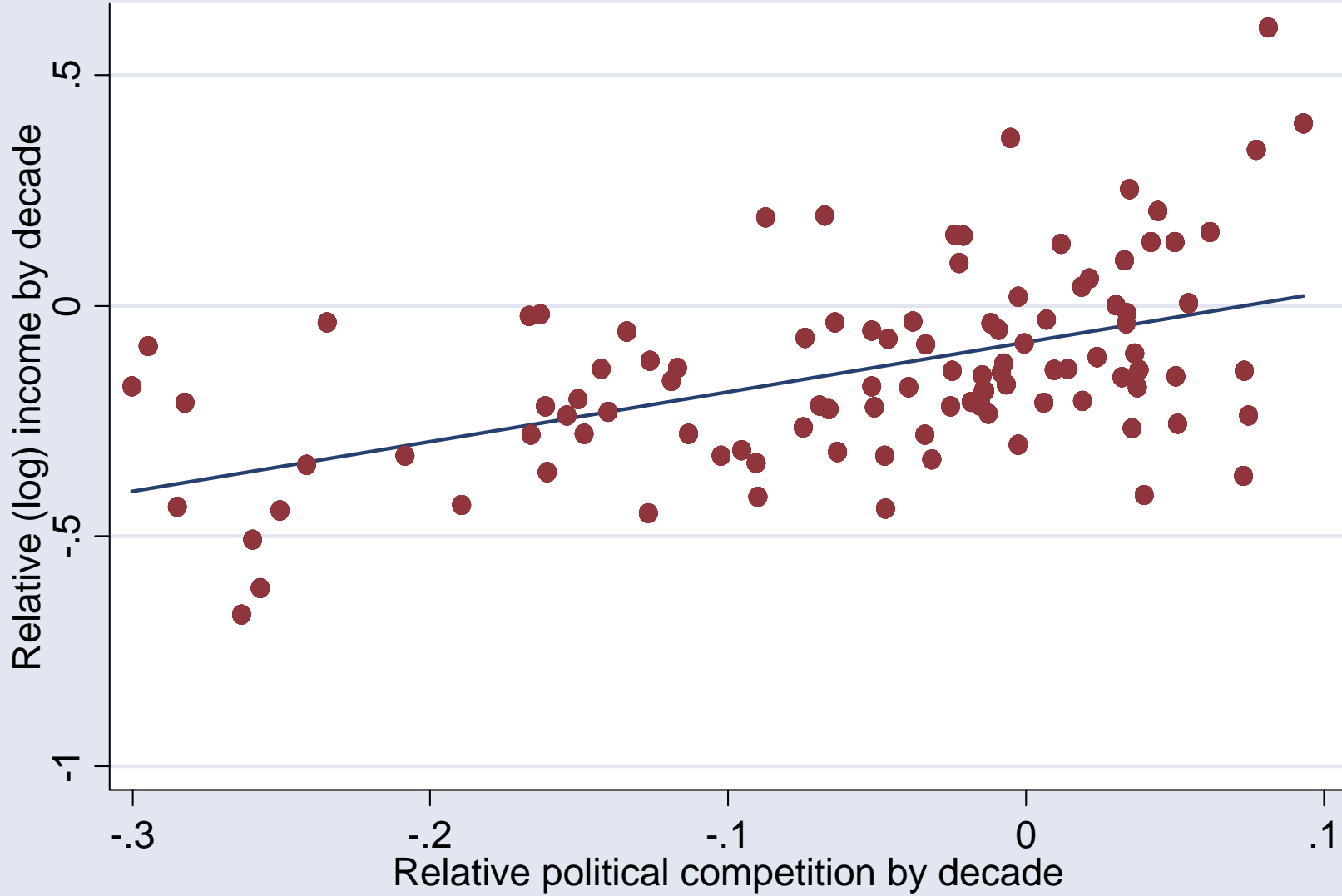


Figure 3: Growth Before and After Abolition of Voting Restrictio

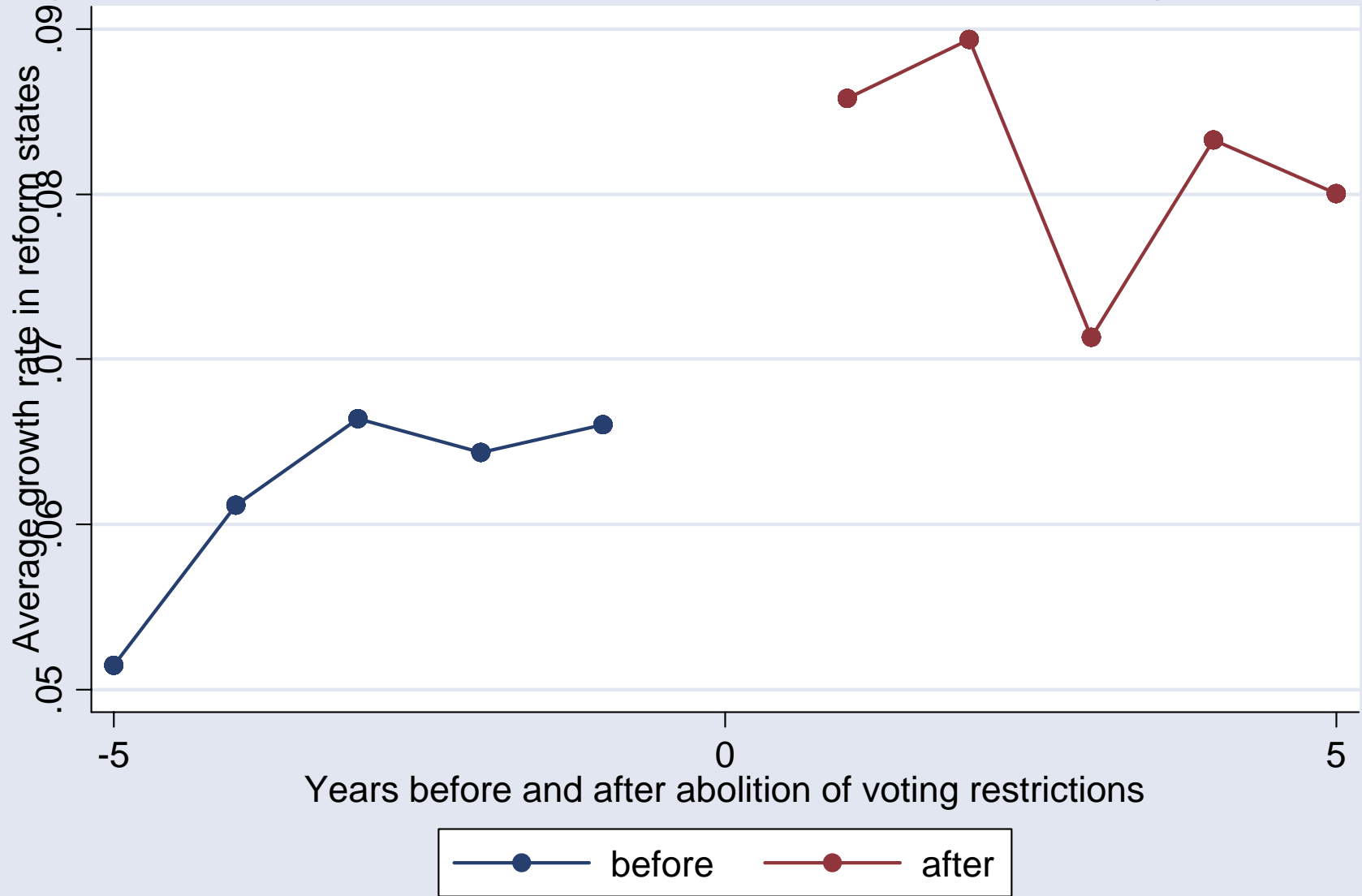


Figure 4: Distribution of F-Statistics

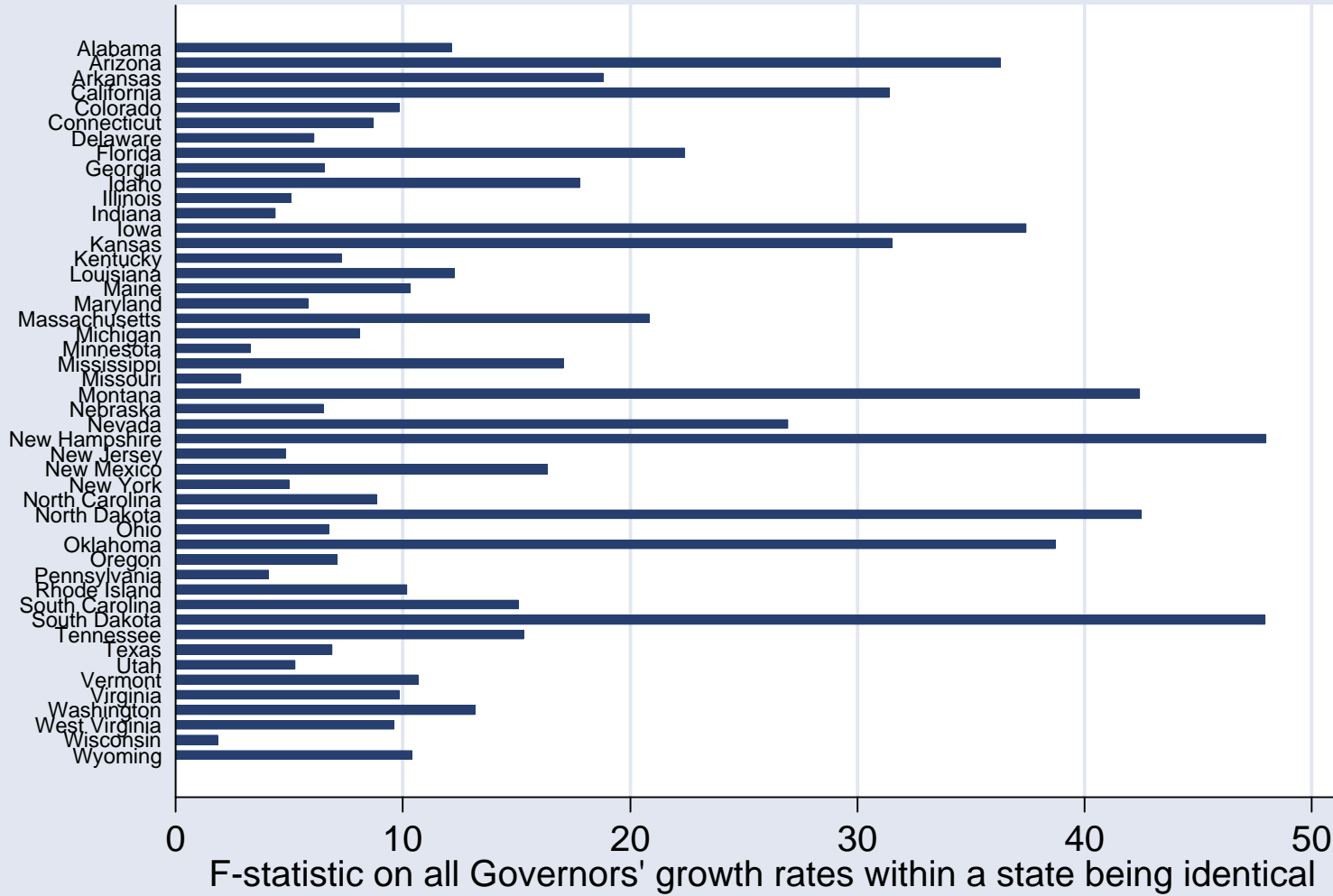
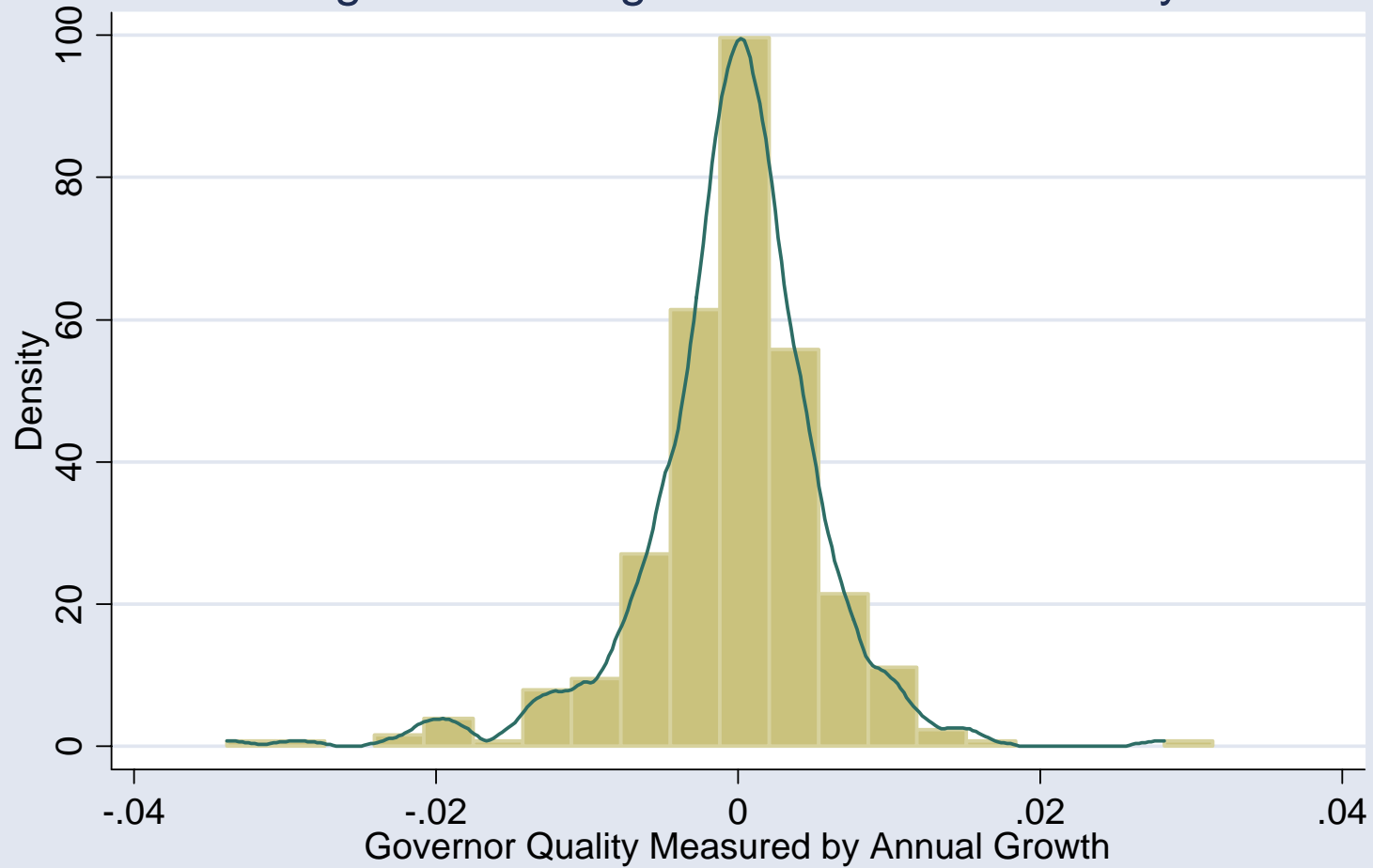


Figure 5: Histogram of Governor Quality



-- This is shown only for the 384 Governors who have served for more than two years.