Electoral Competition and Endogenous Barriers to Entry

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Abstract

As institutions matter for political and economic outcomes, they are (at least partly) shaped by the interests of political agents acting under these limitations. However, empirical evidence documenting such endogenous change of institutions is scarce. We address the issue by examining the link between the degree of electoral competition and the design of ballot access restrictions in the United States. Exploiting exogenous variation in electoral competition at the state level induced by the federal Voting Rights Act of 1965, our main finding is that ballot access rules have been systematically tightened in response to stronger electoral competition.

Keywords: Political institutions, electoral competition, ballot access

JEL Classification: D72, D78

1. Introduction

Acemoglu (2005) argues that rational economic and political agents *must* be understood as having induced preferences not only over policies, but over the institutional settings they are acting in.[1] Despite the fact that a design of political institutions by self-interested political elites has potentially far-reaching consequences, the literature has provided little quantitative empirical evidence for endogenous institutional change.[2] Among the few available studies, Trebbi et al. (2008) show that the choice of electoral rules in U.S. cities varies

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[1]For related evidence see, e.g., Mayhew (1971) on redistricting, Husted and Kenny (1997) on voting rights and redistributive taxation and Glaeser and Shleifer (2005) on shaping the electorate by inducing self-selection among voters.

[2]Qualitative evidence is provided by Congleton (2011) and Martin and Thomas (2013). Theoretical work explicitly addressing the endogeneity of institutions includes Aghion et al. (2004), who analyze the tradeoff between delegation of power and ex-post control of politicians as a force shaping the design of institutions.

with the share of minorities in a way that effectively limits minority representation. Ticchi and Vindigni (2010) provide cross-sectional evidence suggesting that, as predicted by their theoretical model, societies which have a more unequal income distribution show a higher probability of adopting a majoritarian democracy.

We study rules that regulate the access of potential parties and candidates to elections and ask whether (and how) established policymakers try to shape political procedures to deter the entry of potential opponents. We address this issue by examining the stringency of ballot access restrictions in the United States and exploit exogenous variation in electoral competition at the state level induced by the federal Voting Rights Act of 1965. We find evidence that ballot access rules have been systematically tightened in response to stronger electoral competition as measured by the number of parties.

Regulations that restrict the access of potential candidates to the ballot exist in many countries. To reduce the impact of confounding factors typically present in cross-country studies, we concentrate on ballot access laws in the United States. Ballot access laws define the requirements minor party and independent candidates need to fulfill in order to participate in general elections and are particularly promising for empirical research for a number of reasons. First, in contrast to the prediction of Duverger (1972), third party and independent candidates are a widespread phenomenon of the political system of the United States. During the period considered in our study (1946-1976), 46% of the gubernatorial races saw three or more candidates. Although rarely elected into office, these candidates can be highly influential, as has become evident by the prominent examples of Ralph Nader in the 2000 and Ross Perot in the 1992 presidential elections.[3] Second, because ballot access restrictions have a strong deterrent effect on non-major party candidates,[4] imposing such rules presents the (major) parties with the opportunity to limit the degree of electoral competition. The re-design of these regulations should therefore be attractive from the point of view of current political elites.[5] Third, ballot access rules are set by the states and vary considerably across states and over time, giving us the opportunity to investigate the determinants of institutional change in a broad panel of socially and economically relatively homogenous jurisdictions.[6] Finally, the stringency of ballot access laws is easily measurable since the states' election laws commonly require that minor parties and independent candidates file a petition signed by a certain number of eligible voters.

As discussed by Trebbi et al. (2008) and Ticchi and Vindigni (2010), identifying the endogenous response of institutions is typically burdened by severe endogeneity problems.

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[3]The dynamics of the 2000 presidential elections is analyzed by Hillygus (2007).

[4]The effectiveness of ballot access restrictions in reducing electoral competition has been shown by Drometer and Rincke (2009), who analyze the effect of the 1968 Supreme Court decision to strike down Ohio's highly restrictive petition requirement. For additional evidence, see Ansolabehere and Gerber (1996), Stratmann (2005) and Burden (2007).

[5]Lewis-Beck and Squire (1995) argue in the case of U.S. presidential elections that the parties in power try to build up barriers to the entry of competing parties. Their empirical study shows that states with more electoral votes impose stricter ballot access rules.

[6]Rosenstone et al. (1984) provide detailed evidence that most state legislatures have changed ballot access laws over time.

In our case, the identification problem is pretty obvious, as the observable degree of electoral competition already reflects the deterrent effect of existing ballot access requirements on potential third-party and independent candidates. To deal with this problem, we exploit the federal Voting Rights Act (VRA) of 1965 as a source of exogenous state-level variation in electoral competition as measured by the number of parties. Before the mid-1960s, politics in the southern states[7] was characterized by a quasi-monopoly of the Democratic Party and the disenfranchisement of most black voters. The VRA effectively removed barriers to the political participation of blacks such as poll taxes and literacy tests and led to a rapid and significant increase in registration rates among black voters. This in turn had a substantial effect on the political supply side, i.e. on political parties and potential candidates for public office: while in all states not affected by the VRA the average number of candidates in gubernatorial elections showed a moderate change from 2.8 in the period before the VRA (1946-1964) to 3.0 in the years 1966-1976, states affected by the VRA experienced a substantial increase from 2.2 to 3.1. As the expansion of voting rights came unexpectedly and was imposed on the southern states by the federal government, the VRA carries the potential to provide us with sufficient exogenous variation in electoral competition to achieve identification.[8] Using data on gubernatorial elections from 1946 to 1976, we demonstrate that the stringency of ballot access rules is systematically related to the degree of electoral competition. On average, an additional candidate on the gubernatorial ballot is estimated to trigger an increase in petition requirements in the order of 4,750 to 9,700 petitions. This estimated response in the design of ballot access rules amounts to 56% to 114% of the mean signature requirement of 8,746 in the sample. We perform several robustness checks and find all results confirmed across various changes in specification, including alternative ways to capture the impact of the VRA on electoral competition.

This paper illustrates how an established elite tries to undo an institutional reform initiated by external forces that threatens its current status. Given the effectiveness of ballot access laws in reducing electoral competition, the number of candidates would have been risen even more without the adjustments analyzed in our paper. As the VRA made elections more contested, the efforts of the established parties to contain electoral competition were obviously not successful enough to keep the status quo; they simply seem to have dampened the total effect.

The paper is organized as follows. Section 2 offers a theoretical explanation of the existence of third parties in a plurality voting system and displays the history of ballot access laws in the U.S. The empirical approach and the data are discussed in Section 3. Section 4 presents our results, and Section 5 concludes.

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[7]We use the definition of the Census Bureau and treat as southern states Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, and Virginia.

[8]In methodological terms, drawing on the VRA as a natural experiment relates our study to a number of previous works, e.g. Husted and Kenny (1997), Trebbi et al. (2008), and Besley et al. (2010).

2. Third Parties and Ballot Access Rules in the U.S.

Due to the majoritarian voting system, the main competitors for political power in the U.S. are the two dominating political parties as asserted by Duverger's law (Duverger (1972)). However, third party and independent candidates are a widespread both in state as well as federal elections.[9] At least two rationales could explain this phenomenon. One reason for the existence of third parties under plurality rule is preference heterogeneity at the district level.[10] The United Kingdom and Canada, which both have a plurality voting system and a well-established third party, may serve as examples.[11] Yet, in the case of the U.S. this explanation does not fit well. An alternative rationale is that third parties might enter an electoral contest in order to influence its outcome or the electoral campaign. The citizen-candidate model by Osborne and Slivinski (1996) and Besley and Coate (1997), where the number of candidates is endogenously determined, supports this simple intuition when discussing equilibria with more than two candidates under plurality rule. Osborne and Slivinski, for instance, show that an equilibrium exists where a third candidate enters because he prefers the resulting equal-probability lottery over the two other candidates to the certain victory of the candidate who would win if he withdrew.

Obviously, each major party would welcome a third party 'stealing' votes from its opponent. In practice, however, it is unlikely that major parties can control which candidates are going to run and, accordingly, whether they will be better or worse off with competition from minor-party candidates. As discussed by Adams and Merrill, III (2006) and Meguid (2005), the entry of new opponents increases the uncertainty of the race and forces the two major parties react on the policy agenda of third parties that often take on new and popular issues.[12] Therefore, the common long-term interest of the established mainstream parties to prevent third-party candidates should dominate over potential strategic considerations regarding 'asymmetric' entry of new parties. The notion that the major parties in a plurality voting system are interested in sustaining their position as incumbents in a political quasi-duopoly by restricting the access of third parties to electoral contests is supported by the fact that most U.S. states use ballot access laws imposing significant barriers to entry of non-major party candidates. In the empirical part of this paper we are testing whether this intuition is supported by the data, and whether there is a statistically measurable and significant reaction of established parties towards the entry of new competitors.

As part of the body of state election laws, ballot access regulations are enacted by a state's legislature and signed into law by the governor.[13] In contrast to major parties who

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[9]See, among others, Rosenstone, Behr, and Lazarus (1984), Maisel (1991) and Kruschke (1991).

[10]See Ordeshook and Shvetsova (1994) and Amorim Neto and Cox (1997).

[11]See Nagel and Wlezien (2010) for a detailed analysis of the case of the British Liberal Democrats as a centrist party in a majoritarian voting system.

[12]Lewis-Beck and Squire (1995) also argue that a party wishes to avoid uncertainty since it makes it more difficult to select, implement and promote a party programme. They provide empirical evidence that states with parties in power that are organizationally more secure demand less petitions for accessing the ballot. Meguid (2005) provides a detailed analysis of the interdependence of mainstream and niche parties' strategies.

[13]The U.S. does not have a unitary election law. Until the 1890s, ballot access remained entirely unreg-

are allowed to hold primary elections or caucuses to determine their candidates for the general election, minor parties and independent candidates are commonly required to pay filing fees and submit a petition signed by a certain number of eligible voters to gain ballot access. Filing fees for gubernatorial candidates are of negligible size in the majority of states, and where they are not, several Supreme Court rulings require that alternative means for gaining ballot access have to be specified, typically including the filing of petitions. Moreover, a number of court decisions limit the leeway to adjust deadlines during the application process. In effect, petition requirements are the most significant barrier minor parties and independent candidates need to overcome, which makes the stringency of ballot access laws easily measurable and comparable across states.[14]

Due to their decentralized setting, the variation in signature requirements across states and over time is substantial. For example, in 1976 signature requirements for gubernatorial elections ranged from nil in New Mexico and Oklahoma to well above 50,000 in Maryland, California and Georgia. Georgia, being the most restrictive state in absolute terms, required a gubernatorial candidate to obtain signatures of 5% of the registered voters in order to be placed on the state ballot, resulting in a barrier to entry of more than 104,000 signatures for the 1974 gubernatorial election.[15]

Before turning to our identification strategy, it is instructive to take a closer look at some historical examples providing anecdotal evidence of how state policy makers respond to the electoral success of non-major party candidates. From the late 19th century until the end of the 1960s, both Arkansas and Virginia had liberal ballot access laws: In Arkansas, any political party could get on the ballot, just by requesting to be on, while Virginia required third-party candidates to provide 1,000 petitions. At the same time, voting restrictions such as poll taxes (Arkansas and Virginia) and literacy tests (Virginia) supported the virtually unopposed political quasi-monopoly of the Democratic Party. When these voting restrictions, barring mostly poverty-stricken African-Americans from participating in the electoral process, were removed by federal intervention in 1964 and 1965, black voter registration started to soar. These changes stirred up the so far highly stable party system in the U.S. South. In Arkansas, for example, the candidate of the pro-segregationist American Independent Party polled 5.9% of the popular vote in the 1970 gubernatorial election. Thereafter, the state legislature passed a law in 1972 providing that new parties could not get on the ballot unless they submit a petition signed by a number of voters equal to 7% of the last vote cast. Because this law was held unconstitutional in 1977, the legislature reduced the requirement to 3%. Still, until 1998 no third-party candidate ever appeared on the state's gubernatorial ballot. Remarkably similar things happened in Virginia: Four years after the Independent George L. Rockwell and William J. Story of the Conservative Party together had polled

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ulated, and it was common that candidates themselves were entitled to print and distribute paper ballots. These practices resulted in polling irregularities and led to the adoption of the Australian ballot which prescribed that ballots were to be printed and distributed by the state government. See Bott (1990) and Argersinger (1980) for a more detailed account of the history of ballot access rules.

[14]In a related study Burden (2007) finds that further institutional details (e.g., candidacy fusions, straight-party voting, etc.) have no effect on the number of candidates.

[15]For further details, we refer the reader to Section 3.

14.4% of the popular vote in the 1965 gubernatorial election, the state legislature adjusted the barrier to entry for third-party candidates to 0.5% of the number of registered voters, implying an increase in the petition requirement by about 780%.

3. Empirical approach and data

3.1. Estimation approach

The aim of our empirical analysis is to identify the effect of electoral competition on the design of ballot access laws in U.S. states. Before turning to the issue of identification, let us briefly discuss the structural equation of interest which reads

$$B_{it} = \alpha C_{it} + X_{it}\beta + \theta_i + \tau_t + e_{it}, \tag{1}$$

where B_{it} measures the stringency of ballot access restrictions in state i in year t, C_{it} is the degree of electoral competition, and X_{it} denotes a vector of state characteristics that potentially affect the design of ballot access rules. The remaining components of the estimation equation are unobserved state effects, θ_i, period-specific effects, τ_t, and an error term, e_{it}. In all estimations reported below, θ_i is treated as a fixed effect which is removed from the equation before estimation by the usual within-transformation.

The coefficient of interest in our structural equation is α. It captures the extent to which states re-design their ballot access requirements in response to changes in the degree of electoral competition.[16] We expect a positive sign of α, indicating that states tend to make access to the ballot more difficult for third-party and independent candidates if major parties face more competition. However, because the effective degree of electoral competition already reflects the impact of B, estimating α from a naive regression is generally uninformative. Technically, the dependence of C on B induces correlation between our main explanatory variable and the residual, which renders parameter estimates from simple ordinary least squares regressions inconsistent.

In order to solve the endogeneity problem we identify a source of exogenous variation in electoral competition at the state level and exploit this variation to derive instrumental variables (IVs) for C. If the exogenous variation captured by the instruments is sufficiently strong, two-stage least squares (2SLS) regressions will identify the effect of interest. Our instruments are based on the VRA of 1965 which fundamentally transformed the political landscape of the U.S. South, while having little direct impact on the remaining states. The VRA, proposed by the Johnson administration in March of 1965 in reaction to events like the attack of state troopers on civil-rights activists in Selma, Alabama, and signed into law on August 6, 1965, imposed a strict enforcement of voting rights on southern states. In particular, it suspended the use of poll taxes and authorized federal supervision of voter

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[16]Incumbent politicians are certainly aware of changes in political competition and ballot access laws are easy to adjust. Thus, it seems best to use the contemporaneous level of competition as an explanatory variable. An alternative specification would relate B_{it} to competition in the previous election, $C_{i,t-1}$. As some states have a two-year term and others a four-year term this alternative would imply using different lags (measured in years) in one model.

registration in states or counties where literacy tests had been used in the past and where less than 50% of the voting age population was registered.[17] Treating the VRA as exogenous to the design of state ballot access rules is suggested by the fact that it was imposed on the southern states in a quick succession of events and that the act itself did not address the use of ballot access requirements by the states.[18]

The VRA had an immediate and massive impact on black voter participation. Taking all southern states together, voter registration among blacks jumped from 35.5% in 1964 to 64.8% in 1969.[19] With millions of new voters, the number of candidates in southern gubernatorial elections quickly attained values comparable to those in the remaining states. While the average number of candidates in the states directly affected by the VRA was 1.91 between 1946 and 1964 compared to 2.71 in the remaining states, it increased to 2.96 between 1966 and 1976, only 0.06 below the number for the rest of the U.S.

We exploit the VRA as a specific 'treatment' of the southern states as opposed to the rest of the U.S. by defining two indicators, one for the states which were affected by the federal intervention, $BLACK$, and a second indicator, VRA, which takes value zero for all election years prior to 1966 and value one for the years starting from 1966 (the post-VRA years).[20] The interaction of both indicators, $BLACK \times VRA$, is a natural candidate for an IV as it carries the potential to capture the significant increase in electoral competition induced by the VRA. With respect to the definition of $BLACK$, recall that most of the southern states were immediately affected by the VRA because they were forced to abolish impediments to black voter participation like poll taxes and/or literacy tests. Note, however, that even in states that did use neither poll taxes nor literacy tests at the time of the VRA, the political participation of blacks rose considerably. Florida, for instance, had abolished poll taxes already in 1937 and did not use formal literacy tests. Notwithstanding, the registration rate of blacks increased from 39.4% in 1960 to 55.3% in 1970, while the registration rate among whites decreased from 69.3% to 65.5%.[21] In general, the available data on registration and voting behavior between 1960 and 1970 suggest that the VRA had substantial effects on the political participation of blacks in all states. To account for this, we define all states with more than 10% black population in 1960 as $BLACK$ since this provides us with a geographically cohesive set of states including all states of the solid south and in addition

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[17]Poll taxes as a requirement for voting were used by all southern states. Florida, Georgia, Louisiana, and North Carolina repealed the tax by 1945, followed by South Carolina and Tennessee in 1951 and Arkansas in 1964. The remaining poll taxes in Alabama, Mississippi, Texas, and Virginia were struck down by federal courts quickly after the VRA. Federal oversight on voter registration because of literacy tests and low turnout was imposed on Georgia, Louisiana, Mississippi, South Carolina, Virginia, 40 (out of 100) counties in North Carolina, and Apache County in Arizona. See Husted and Kenny (1997) for details.

[18]The Supreme Court's broad interpretation of Section 5 of the VRA in Allen v. State Board of Election (1969) required southern states to go through preclearance by the Justice Department when seeking to change their ballot access laws. Given the numerous and drastic increases in ballot access requirements after 1965 this preclearance procedure does not seem to have effectively constrained the southern states states in re-designing their petition requirements.

[19]See Statistical Abstract of the United States (1970, p. 369) and Husted and Kenny (1997).

[20]The VRA was signed into law on August 6, 1965.

[21]See Statistical Abstract of the United States (1971, p. 365).

the states of Delaware, Illinois, Maryland, and Tennessee.[22] Several tests of robustness of our findings regarding the definition of the threshold are discussed and reported in the results section.

As a measure for the barrier to entry B we use the number of petitions that minor-party and independent candidates need to submit in order to be placed on the gubernatorial ballot, *PETITIONS*. In some states ballot access laws specify an absolute number of signatures, while in others the requirement is given as a percentage of registered voters or votes cast in the preceding general election. In states with a relative definition, an increase in turnout (or the number of registered voters, depending on the specification of the corresponding state law) will automatically increase the number of petitions required to get access to the ballot in the next election. Since turnout sharply increased in the states affected by the VRA, it is important to account for this direct effect of participation. Therefore, we include the vote cast in the preceding election (*VOTE CAST*), an indicator for states with a relative definition of the signature requirement *REQUIREMENT REL*, and the interaction between both variables as additional control variables.

Of course, the coefficient of the interaction between vote cast and the indicator for states with relative provisions can only capture the average of the changes in the dependent variable that are directly related to changes in participation. Therefore, one might question the validity of the exclusion restrictions as changes in participation are only imperfectly controlled for.[23] To cope with this problem, we construct an alternative measure for the petition requirement, *PETITIONS ADJ*, that eliminates all variation which might be driven by participation. This is done as follows: We first compute the effective number of petitions required for all years where a state introduces or adjusts a relative ballot access regulation. As long as the respective state does not change the underlying law, we use these values for all following election years until the law is changed again. Then, we take the new effective number of signatures at the time where the change becomes effective, and so on. Hence, the described adjustment of the count of required signatures removes variation from the series which is driven by changes in participation but which is unrelated to changes in the institutional framework. The new series has a mean of 6,868, a maximum of 66,450 and a standard deviation of 12,460.

For the purpose of our analysis we define electoral competition C as the number of candidates running for office in an election.[24] We use either the total number of candidates

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[22]The group thus comprises Alabama, Arkansas, Delaware, Florida, Georgia, Illinois, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia. Examples of increasing electoral competition can also be found in states that did not have poll taxes or literacy tests prior to 1965. In Maryland an independent candidate polled 9.9% of the popular vote in the 1966 election, significantly more than the vote margin of the Republican over the Democratic candidate. One year later, the state increased its barrier to entry from 5,000 petitions to 3% of the number of registered voters, implying a requirement of 47,910 signatures based on 1970 registration records.

[23]We thank one of our anonymous reviewers for pointing out that (not) changing the existing relative rules can also be seen as a choice made by the representatives of the major parties.

[24]The number of candidates is the most natural measure of electoral competition in our context and can directly be linked to the stringency of ballot access laws, whereas their impact on the closeness of an election is certainly more complex and going through many different channels.

appearing on the ballot, *CANDIDATES*, or the number of third-party and independent candidates, *THIRD PARTY CANDIDATES*. At first glance, the latter measure seems to be the better choice since it is more closely related to the stringency of ballot access restrictions for minor-party and independent candidates. Recall, however, that uncontested gubernatorial races were quite frequent prior to 1965 in southern states. The significant increase in electoral competition faced by the Southern Democrats in the aftermath of the VRA was to some extent due to candidates of the Republican Party regularly appearing on gubernatorial ballots. This in turn has certainly made votes lost to minor-party and independent candidates more pivotal and thus might have triggered adjustments of their ballot access requirements as well. We therefore use the total number of candidates as a measure of electoral competition in most estimations, but also report results based on the number of third-party and independent candidates as a robustness check.

In our study, the VRA is used as a natural experiment, i.e. it was not imposed on a randomly selected set of states, but on states sharing certain common characteristics. Therefore, it is important to control for state characteristics which help to isolate the exogenous part of the variation induced by the VRA. In particular, our analysis reveals that it is important to take into account changes in the population size (*POPULATION*). Presumably, population size is relevant since it determines the relative nationwide political importance of a state and thereby the weight major parties attach to electoral competition arising in that state.[25] The prime role of the further control variables is to account for a possible effect of key economic, social-demographic and political characteristics on signature requirements. For instance, some third parties might find it easier to collect signatures among better educated people or might be supported by labor unions. We therefore account for educational attainment (*EDUCATION*) and unionization (*UNIONIZATION*). Furthermore, ballot access provisions could vary with the ideological orientation of potential third-party candidates, or state policies towards third parties might depend on which major party controls the state government and legislature. We therefore include among the controls indicators for states dominated by one of the major parties (*DEM STATE*, *REP STATE*). The indicator for states dominated by Democrats (Republicans) is set to one if the governor is a Democrat (Republican) and if the Democrats (Republicans) control both chambers of the legislature. In addition, we include an indicator for the ideological orientation of third-party candidates (*THIRD PARTY IDEOLOGY*),[26] and the interactions between the Party-Dominance dummies and the Third-Party Ideology indicator.

In some regressions (see online appendix), we also include a proxy variable for the income of those voting relative to the income of the general population among the controls. This is to account for the well-documented effect of the VRA to make the pivotal voter becoming less educated and less wealthy (Husted and Kenny, 1997). We use the variable $INCOME_{\text{voter}}/INCOME_{\text{pop}}$ as constructed by Husted and Kenny (1997) and defined as a state's average county median family income, weighted by the number voting in the county,

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[25]The IV estimations without further control variables confirm our main findings qualitatively, but reduce the statistical significance to the 10 percent level.

[26]See Section 3.2 for details on how we construct the ideology indicator for third parties.

divided by average county median family income, weighted by the county's voting-age population.

3.2. Data

The cross-sectional dimension of our sample is given by the population of contiguous U.S. states. Regarding the time dimension, we make use of the gubernatorial election years between 1946 and 1976. We do not make use of later years because our identification strategy is designed to exploit the VRA of 1965 as a source of exogenous variation in electoral competition.[27] Our measures of electoral competition are based on gubernatorial election outcomes as reported in ICPSR (1994). The data provide information on each individual candidate. Yet, especially for the early years, the assignment of party codes to individual candidates is imprecise in some cases. This is due to the fact that for some states the sources ICPSR (1994) is based on did not properly distinguish between minor-party candidates and write-in candidates. In all such cases, we checked and corrected the party codes by comparing the respective records in the ICPSR data to the information on individual candidates in various editions of the handbook on U.S. election statistics by R.M. Scammon.

Our measure for the stringency of ballot access restrictions for minor-party and independent candidates is the number of signatures needed on a petition. In states where the election law specified requirements that differed between minor party and independent candidates, we chose the lower number. In case the number of petitions was defined as a percentage of either the number of votes cast in the last general election or the number of registered voters, we calculated the implied absolute number of signatures using data on the number of votes cast from ICPSR (1994) and data on the number of registered voters from the Bureau of the Census (Statistical Abstracts). When the number of registered voters was unavailable for the respective election, we linearly interpolated using the numbers from the next available years. The main data sources are Winger (2006), providing information on petition requirements in presidential elections (in most states, ballot access requirements for presidential and gubernatorial elections are the same), and Bott (1990). We also cross-checked the figures in Winger (2006) and supplemented them (for years with gubernatorial but no presidential elections) using hard copies of the states' statutes for the whole period 1946-1976. In some cases we were unable to figure out the precise signature requirement for gubernatorial elections (mostly because the respective state laws specified alternative ways to get ballot access)[28], resulting in missing values for the signature requirement. We had to exclude the following states from the analysis altogether: New York, Vermont, Ohio, Washington, New Jersey, and Wisconsin. For New Jersey, Washington and Wisconsin we were unable to derive a consistent measure for the signature requirement because the respective state laws allow for various alternative means to get ballot access. In New York and

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[27]The level of entry restrictions seems to have approached a new equilibrium quickly after the VRA. To avoid that our estimates are confounded by changes in ballot access laws in 1980s for various reasons other than the VRA (see Winger (2002)), we have chosen an early cut-off year.

[28]For instance, some state laws offer minor parties the opportunity to hold a party convention with a certain minimum number of attendees that can nominate a candidate whose name will then appear on the ballot.

Vermont, individual candidates in gubernatorial elections often represent multiple political parties. Our measure for electoral competition for these states is thus not comparable to the remaining states. Finally, Ohio's ballot access law was struck down by the Supreme Court in 1968 as being overly restrictive. Since our approach aims at identifying endogenous adjustments of ballot access rules, we do not want to make use of variation which is known to be driven by a court intervention.

As regards the control variables, we use data on population, educational attainment (percentage of total population 25 years and over with a high school diploma or a higher degree) and unionization (trade union membership as percent of non-agricultural employment, interpolated for years in which series is missing) from the Bureau of the Census (Statistical Abstracts). The dummy variables for states dominated by either the Democratic or the Republican Party were derived using ICPSR (1994) as well as the Statistical Abstracts. The indicator for third-party ideology is based on descriptions of U.S. third parties in Kruschke (1991), Maisel (1991) and Bass (2000). To derive the indicator, we used the information on party programs and ideology to classify all third parties as left, centrist, or right, and defined an indicator at candidate-level attaining values of negative one, zero, and one.[29] We then took the mean over all candidate-level observations to obtain the ideological position of the average third-party candidate for each electoral race.

Table 1 shows summary statistics for our data. Furthermore, Figure 1 displays a histogram for the dependent variable.

4. Results

4.1. First-stage and reduced form regressions

Before turning to the main results, it is instructive to investigate the performance of the IVs in first-stage and reduced-form regressions. Table 2 displays the results for four selected first-stage regressions (Columns 1 to 4) and two reduced-form regressions (Columns 5 and 6). All regressions include a full series of state and year effects as well as the complete set of control variables introduced above (coefficients not reported).

The most straightforward way of instrumenting for electoral competition is to use $BLACK \times VRA$ as IV. In this case the first-stage regression takes the form of a difference-in-difference estimation of the competition-enhancing effect of the VRA in the South.[30] Column (1) shows the striking impact of the VRA on the number of candidates in gubernatorial elections. On average, states captured by the indicator $BLACK$ experienced an increase in the number of candidates of about 0.85. The F-statistic for the IV attains a value of 13.24, indicating that the predictive power of $BLACK \times VRA$ is sufficient to avoid problems of weak identification. In Column (2), we use a series of interactions between period dummies for the years 1966, 1968, ..., 1976 and VRA, showing that in four out of six election years the number of candidates in states with a significant black minority was significantly higher than before the VRA.

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[29]Independent candidates were coded as centrist.

[30]By construction this estimation ignores the impact of ballot access restrictions on electoral competition.

Columns (3) and (4) repeat the same regressions using *THIRD PARTY CANDIDATES* as a measure of the degree of electoral competition. Overall we find similar results, but the estimated coefficients tend to be smaller than before, reflecting the fact that part of the increase in the total number of candidates induced by the VRA was due to candidates of the Republican party regularly appearing on gubernatorial ballots.

One concern regarding our identification strategy is the fact that the panel structure of the data could result in the first-stage regressions overstating the true impact of the *VRA* on electoral competition. In particular, Bertrand et al. (2004) point to the possibility that not properly controlling for serial correlation in panel data could lead to grossly underestimated standard errors for treatment effects estimated by difference-in-difference techniques. The most straightforward way to address this concern is to collapse the panel data to just two periods, the first one capturing the years before the intervention, i.e. the *VRA*, and the second one the years after the intervention. We run two simple procedures to test for a potential problem with the standard errors. First, we use the average number of candidates by state in both aggregate periods and estimate the impact of the *VRA* from the two-period panel. The equation estimated is $\tilde{C}_{it} = \gamma BLACK_i \times VRA_t + \tilde{\theta}_i + VRA_t + \epsilon_{it}$, where VRA_t is an indicator for the post-*VRA* period and $\tilde{\theta}_i$ represents state fixed effects. Using the overall number of candidates as dependent variable, the estimated coefficient of the interaction is 0.662, with a robust standard error of 0.234. The second procedure involves two steps. Using the full panel data, we first regress the overall number of candidates on the vector of fixed state and period effects. We then aggregate the residuals into two average residuals by state, one for the years before the intervention and one for the years after the intervention. Using these average residuals as the dependent variable instead of $\tilde{C}_{it}$, the regression mentioned before yields a coefficient for the interaction of 0.651 with a robust standard error of 0.221. Since the impact of the *VRA* on electoral competition turns out to be strongly positive and significantly different from zero at the one percent level in both cases, we conclude that our identification strategy does not suffer from ignoring serial correlation in the underlying first-stage regression.

Columns (5) and (6) report reduced form estimations. Given the strong positive effect of the removal of voting restrictions on electoral competition, we expect the reduced form estimation to produce a positive coefficient estimate for $BLACK \times VRA$. This expectation is confirmed in Column (5). Column (6) reports a reduced form estimation for the adjusted petitions variable, *PETITIONS ADJ*. The estimated coefficient is now somewhat smaller (in absolute terms), but still significantly different from zero at the 10% level.

4.2. Main results

Having provided evidence that the VRA increased electoral competition in states with a significant black minority, we can now turn to the main results. Table 3 displays estimated coefficients and standard errors (robust to heteroscedasticity and clustering by state) for a set of estimations exploiting the impact of the removal of voting restrictions on electoral competition. Columns (1) to (4) show baseline results with $BLACK \times VRA$ as IV. The first two columns establish our main finding: The number of candidates in gubernatorial elections has a considerable effect on the design of ballot access rules for third-party and independent

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candidates. With the full set of controls included in the regression, the evidence suggests that an additional candidate on the ballot triggers an increase in petition requirements by 7,351 signatures.

Among the control variables, the indicator for states with a relative petition requirement and the interaction term are significantly different from zero. The estimated coefficients suggest that states with relative petition requirements are significantly more restrictive in terms of ballot access for third-party and independent candidates. Column (2) suggests that, evaluated at the sample mean, these states require 34,254 signatures more than states with absolute provisions. This regularity is confirmed throughout our analysis and stems from the fact that most states with an absolute definition demand between 500 and 10,000 signatures, whereas even moderately populous states with a rule requiring one or two percent of the vote cast in the preceding election tend to have, in absolute terms, significantly stricter requirements. As expected, an increase in political participation drives up the number of petitions only in states where the ballot access law defines the number of required petitions in relative terms. On average, an increase of the vote cast in the preceding election by 1,000 triggers a rise of the requirement by 11.7 signatures in these states. The estimate reflects the fact that most states with relative petition requirements demand around 1% of the vote cast. Among the coefficients of the other control variables, none is significantly different from zero. In particular, dominance of one of the major parties does not lead to systematically different ballot access rules.

In Columns (3) and (4), we use the number of third-party and independent candidates instead of the total number of candidates as our measure for electoral competition. These estimates of the effect of interest are very similar to those obtained before and are generally significant at the 5% level. In the following, we therefore only report results for estimations using *CANDIDATES* as the main explanatory variable.

In Columns (5) and (6) we make use of the series of interactions between period dummies for the years 1966, 1968, ..., 1976 and *VRA* to capture the effect of the VRA on electoral competition. Although the coefficient of *CANDIDATES* is now somewhat smaller, we still obtain estimates which are significant at the 5% level, irrespective of whether the control variables are included or not.

Finally, Columns (7) and (8) report 2SLS estimations using the adjusted signature requirement, *PETITIONS ADJ*, as dependent variable and *BLACK × VRA* as IV. In this specification, we do not include the interaction between vote cast and the relative-requirement dummy since the direct impact of *VOTE CAST* on the petition requirement is netted out by construction of the dependent variable. The impact of electoral competition on the signature requirement is again estimated to be positive and significant at the 5% level, but the coefficients are clearly smaller than those obtained before. Comparing the estimate from Column (10) to its counterpart in Column (2) reveals that removing the variation in petition requirements which is purely participation-driven reduces the effect of interest by roughly 35%. However, being the most conservative estimate, Column (10) still suggests that an additional candidate appearing on the ballot triggers an increase in the ballot access requirement by 4,749 petitions.

Interestingly, all party and ideology indicators (*DEM STATE, REP STATE, THIRD*

PARTY IDEOLOGY) turn out to be insignificant. This is in line with our argument that the benefits of restricting entry are difficult to tailor to the interests of a particular party. Rather, both major parties seem to be interested equally in maintaining a political duopoly. At the same time these findings rule out the possibility that ballot access laws were primarily adjusted to prevent the representation of a specific ideological group of voters, e.g., white extremists opposing the changes associated with the Civil Rights Movement. Instead, the analysis suggests that the VRA constituted a shock to the entire political landscape.

5. Conclusion

We have tested the hypothesis that adjustments of the procedures under which non-major party candidates in the U.S. gain access to state ballots are driven by changes in electoral competition. Using instrumental variables rooted in the Voting Rights Act of 1965 to overcome the identification problem originating from the simultaneity of ballot access requirements and candidates' entry decisions, we estimated that between 1946 and 1976 an additional candidate on the gubernatorial ballot triggered an increase in petition requirements of about 4,750 to 9,700 signatures. These results suggest that the barriers to entry for non-major party candidates in gubernatorial elections are endogenously determined: If competition by such candidates increases, the political system dominated by the major parties tends to respond by setting higher barriers to entry. This finding is consistent with the view that the major parties (or state governments and legislatures dominated by them) use ballot access provisions to protect their current position in a quasi-duopolistic system of political parties.

Our results suggest that the endogenous adjustment of state laws governing the access of third-party and independent candidates to general elections has a depressing effect on actual levels of electoral competition. This may have far-reaching consequences, as electoral competition seems to positively affect the quality of governance and economic performance. Besley et al. (2010), for instance, show that the lack of electoral competition is associated with policies which are detrimental to economic growth, and that political competition is positively linked with income growth. Together with their findings, our results suggest that the effort of state policymakers to dampen the increase in electoral competition by re-designing the political procedures under their control may have significant welfare costs.

However, a caveat is warranted regarding this interpretation. Lizzeri and Persico (2005), for instance, point to potential drawbacks of electoral competition, arguing that more competition induces parties to focus on the interests of a narrower constituency. This in turn may lead to a stronger influence of special interests in politics, implying efficiency losses. The observed adjustment of petition requirements could thus be viewed as a socially optimal response to a rising level of electoral competition. In our perspective, however, this rationale for limiting the number of active political parties is unlikely to be valid in the context of the U.S., where the plurality voting system provides conditions supporting the existence of two dominating political parties.

Acknowledgements

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Tables and figures

Figure 1: Histogram for petition requirements
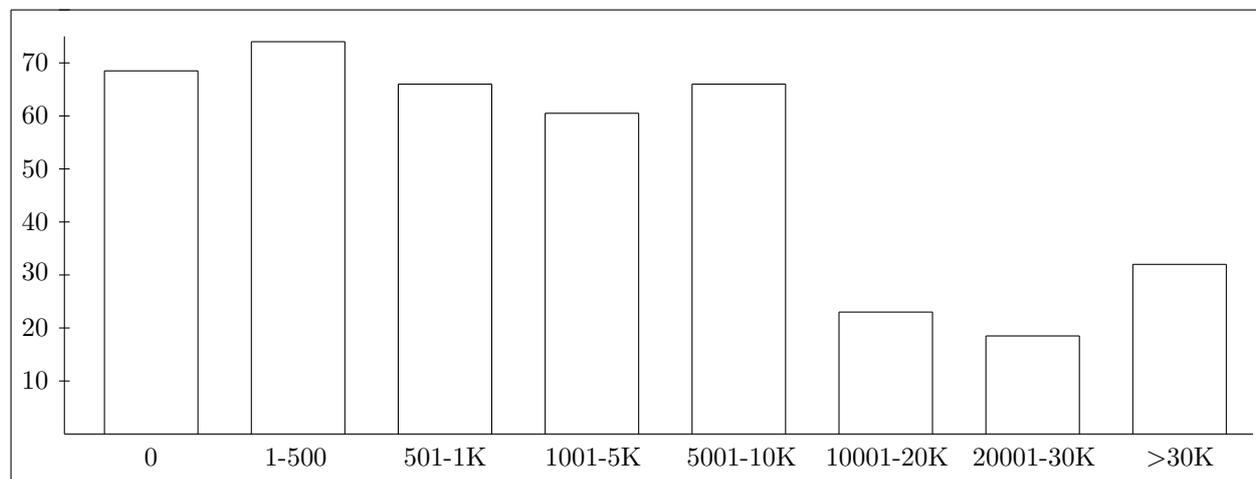
Bars show number of state-year cells with petition requirement in specified range.

Table 1: Summary statistics

Variable	Mean	Std. Dev.	Min	Max
PETITIONS	8476	16034	0	103208
PETITIONS ADJ	6868	12460	0	66450
CANDIDATES	2.71	1.19	1	9
THIRD PARTY CANDIDATES	0.748	1.15	0	7
BLACK×VRA	0.109	0.312	0	1
VOTE CAST$_{t-1}$	904	1067	40.6	6510
REQUIREMENT REL	0.368	0.482	0	1
POPULATION	3111	3215	143	21173
EDUCATION	42.7	11.0	18.9	74.9
UNIONIZATION	22.7	8.89	6.7	46.2
DEM STATE	0.380	0.486	0	1
REP STATE	0.212	0.409	0	1
THIRD PARTY IDEOLOGY	-0.074	0.406	-1	1
INCOME$_\text{voter}$/*INCOME*$_\text{pop}$	1.02	0.202	0.616	1.57

Sample comprises states in gubernatorial election years, 1946-1976, Nob=410 (*INCOME*$_\text{voter}$/*INCOME*$_\text{pop}$: 1950-1976, Nob=333).

Table 2: First-stage and reduced-form regressions

Dependent variable	CANDIDATES		THIRD PARTY CANDIDATES		PETITIONS	PETITIONS ADJ
	(1)	(2)	(3)	(4)	(5)	(6)
$BLACK \times VRA$	0.852***		0.778***		6265**	4759*
	(0.255)		(0.261)		(2919)	(2298)
$BLACK \times 1966$		1.02***		0.921**		
		(0.318)		(0.385)		
$BLACK \times 1968$		-0.193		-0.117		
		(0.235)		(0.228)		
$BLACK \times 1970$		1.43**		1.12**		
		(0.591)		(0.554)		
$BLACK \times 1972$		0.604*		0.600		
		(0.352)		(0.392)		
$BLACK \times 1974$		1.13*		1.13*		
		(0.643)		(0.587)		
$BLACK \times 1976$		1.10		1.11		
		(0.788)		(0.772)		
F-Statistic of IVs	13.24	3.69	12.02	3.17	-	-
R^2 (within)	0.251	0.270	0.250	0.265	0.586	0.579

Sample includes gubernatorial elections from 1946 to 1976 (410 observations). Standard errors (robust to heteroscedasticity and clustering by state) in parentheses. All regressions include a full series of state and year effects and the full vector of control variables as displayed in Table 3. Significance levels: *** 1%; ** 5%; * 10%

Table 3: Electoral competition and petition requirements, 1946-1976

Dependent variable	PETITIONS						PETITIONS ADJ	
Instrumental variables	BLACK×VRA				BLACK×1966,...,BLACK×1976		BLACK×VRA	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CANDIDATES	9316** (4327)	7351** (3545)			6746** (3354)	5792** (2950)	5726** (2892)	4749** (2395)
THIRD PARTY CANDIDATES			10144** (5015)	8045** (3999)				
VOTE CAST	-0.401 (5.93)	0.567 (5.80)	-0.926 (6.40)	0.169 (6.23)	1.23 (5.75)	1.57 (5.50)	3.26 (3.03)	2.77 (2.49)
REQUIREMENT REL	22093** (9074)	23677** (9601)	21117** (9853)	22936** (10395)	22219** (9254)	23732** (9674)	25851*** (7429)	26403*** (7340)
VOTE CAST × REQUIREMENT REL	14.3** (6.30)	11.7* (6.28)	15.8** (7.04)	12.9* (6.93)	11.4** (5.64)	10.0* (5.69)		
POPULATION	0.227 (1.56)	0.030 (1.46)	0.059 (1.68)	-0.081 (1.53)	0.129 (1.55)	-0.108 (1.44)	1.05 (1.36)	0.876 (1.24)
POPULATION SQUARED	-0.00008 (0.0001)	-0.00004 (0.0001)	-0.00008 (0.0001)	-0.00003 (0.0001)	-0.00005 (0.0001)	-0.00002 (0.00009)	-0.0001 (0.00008)	-0.00007 (0.00006)
EDUCATION		512 (705)		686 (751)		564 (662)	669 (592)	
UNIONIZATION		663 (440)		706 (494)		651 (433)	564 (347)	
DEM STATE		-457 (2022)		-117 (2162)		-422 (1830)	-441 (1582)	
REP STATE		-76.9 (1456)		-219 (1534)		336 (1317)	112 (1202)	
THIRD PARTY IDEOLOGY		-157 (2375)		-274 (2410)		43.2 (1976)	967 (1838)	
DEM STATE × THIRD PARTY IDEOLOGY		-2314 (3967)		-1750 (3957)		-2082 (3543)	-2130 (2984)	
REP STATE × THIRD PARTY IDEOLOGY		2427 (3327)		2345 (3479)		1736 (2816)	1192 (2376)	
R^2	0.666	0.749	0.631	0.723	0.762	0.795	0.699	0.587

Sample includes gubernatorial elections from 1946 to 1976 (410 observations). Standard errors (robust to heteroscedasticity and clustering by state) in parentheses. All regressions include a full series of state and year effects. Significance levels: *** 1%; ** 5%; * 10%

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