

Delegating Disenfranchisement Decisions¹

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August 28, 2008

¹An earlier version of this paper was presented at the 2006 annual meetings of the Midwest Political Science Association and the 2006 annual meetings of the American Political Science Association. We thank Randy Calvert, Jay Goodliffe, and Gary Miller as well as other participants at the conferences for comments on that draft. We also appreciate the comments (with the usual caveat) of Alec Ewald, Cathy Hafer, Greg Huber, Martha Kropf, Dimitri Landa, Jeff Manza, Adam Meiowitz, and Bruce Western. Rebecca Morton acknowledges support from the Center for the Study of Democratic Politics at Princeton University during the early stages of this project and the Hanse-Wissenschaftskolleg.

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Abstract

Most empirical analyses of voting rights laws focus on the implications of the laws on potential voters and political outcomes as if they are fully implemented. However, the administrative structure used by states varies as does the extent that the implementation is monitored and the competitiveness of the electoral environment. We formally model the process by which states choose voting rights measures such as felon disenfranchisement laws. We find that different administrative and monitoring structures as well as competitiveness of the electoral environment are likely to affect both the adoption and implementation of the laws. Even states with identical laws but different administrative and/or monitoring systems and different levels of electoral competition are predicted to have different degrees of implementation. We argue that empirical research that ignores these interactive effects may inaccurately estimate the effects of the laws on potential voters and political outcomes.

The United States constitution delegates the determination of voter eligibility to the states as long as the right is not denied by race, ethnicity, or gender.¹ Recently activists and scholars have focused on two restrictions to voting that exist in almost all states—restrictions on the voting rights of those who have been either incarcerated or convicted of crimes (felon disenfranchisement laws)² and noncitizens. Organizations such as the New School’s Immigrant Voting Project at the World Policy Institute and the Sentencing Project have made advocacy of voting rights for noncitizens and offenders, respectively, a principal goal. Scholars have concentrated on estimating the impact of the laws (especially felon disenfranchisement) for individuals [Western (2002) and (2005), Mauer (2004), Fellner and Mauer (1998), *Journal of Blacks in Higher Education* (1998)], for political systems [Hayduk (2006), Miles (2004), Manza and Uggen (2002), McDonald and Popkin (2001)], and for public policy [McCarty, Poole, and Rosenthal (2006)].

McDonald and Popkin (2001) contend that these laws are a principal explanation for the perception that turnout has been declining in recent American elections. They argue that because most studies rely on census estimates of the voting age population, scholars have failed to account for the percentage of voters who are disenfranchised which has risen over time. Manza and Uggen (2002, 2006) also estimate turnout rates in United States elections and simulate elections with felons allowed to vote. They argue that in some senate races and presidential elections the outcomes would have been reversed if voting rights were restored. Hayduk (2006) examines case studies of efforts to expand the franchise to noncitizens in local elections and maintains that such expansions are necessary for the achievement of effective representation of minority groups in American politics. In an important new contribution to understanding polarization in American politics, McCarty, Poole, and Rosenthal (2006) assert that the increase in the percentage of nonvoters due to immigration has kept the median voter’s income from falling even as inequality has risen in the United States. They argue that this has limited demand for redistributive governmental policies to lessen that inequality and has helped facilitate the increasing polarization of American political parties.

As these examples suggest, the literature generally assumes that the laws covering voter eligibility are implemented as written. But activists note that often these laws are administered by officials with considerable discretion to determine the law and/or autonomy to make choices at variance with laws. One of the criticisms of voter ID laws used to make sure that voting restrictions are enforced (such as those recently passed in Arizona, Georgia, and Indiana) is that the laws will be discriminatorily applied. Spencer Overton observes that: “Some politicians ... reap political benefits by reducing turnout among legitimate voters of particular demographic groups.”³ A statement by a coalition of voting and civil rights groups criticizing a national voter ID proposal recalls: “The 2001 Carter-Ford National Commission on Election Reform found that identification provisions at the polls are selectively enforced. Even in places that do not require voters to show ID, poll workers are known to ask certain voters to prove their identity, in many cases demanding ID from minority voters but not whites.”

The concern about how election officials might use discretion and autonomy in the implementation of voting rights’ restrictions is not a new one. In the 19th and early 20th century a number of states enacted literacy tests which gave broad discretion and autonomy to registrars who were required to judge whether or not a given applicant’s reading skills warranted enrollment as a voter. Originally such tests were used to screen out immigrant voters in northern states, like Massachusetts and Connecticut. After the end of Reconstruction, southern states began to adopt literacy tests and increasingly relied on their discriminatory application to keep African-Americans from voting while allowing the participation of illiterate whites. One delegate at Virginia’s Constitutional Convention declared “Discrimination! Why that is precisely what we propose.”⁴ The obvious discriminatory administration of literacy tests led to their discontinuation with the passage of the Voting Rights Act of 1965.

It remains to be seen whether the administration of new voter ID and proof of citizenship requirements will lead to similar discriminatory applications. What we can say with certainty is that how much discretion is delegated to local officials and how much autonomy to violate

laws can matter in terms of who participates in elections. States vary over whether the local election officials charged with registering voters are locally selected or appointed by state election officials, whether the officials are partisan, and whether bipartisan commissions and boards provide opportunities for those who are currently not in office to monitor the implementation of the laws. Thus, there is significant delegation of the voting process in the United States and variation in the extent of centralization and partisanship in that delegation.

Surprisingly little research has investigated the effects of these differences either empirically or theoretically. In empirical work, four papers (which we review in the next section) have addressed the effects of election administration variation on aspects of the voting process, Hamilton and Ladd (1996), Kimball and Kropf (2006), Kimball, Kropf, and Battles (2006), and Bassi, Morton, and Trounstein (2008). The formal literature on delegation in government is quite advanced and has been applied to many interesting empirical issues in executive/legislative relations [see Bendor and Meirowitz (2004) and Huber and Shipan (2002) for reviews of the literature]. Yet, the delegation of the administration of voting and the effects of discrimination in the application of rules governing voting rights is a subject that has not been addressed in the formal literature to our knowledge.

In this paper we provide a simple model of the process of determining voting rights that incorporates administrative structure and monitoring. Our model is organized around the real world case of felon disenfranchisement laws which exist in 48 states and the District of Columbia. These laws vary across the states both in terms of whether the franchise is restricted for offenders who have completed their sentences versus only those incarcerated and the types of convictions that lead to disenfranchisement. They also vary in terms of how much discretion is allowed local election officials in determining who will be allowed to register and vote. We argue that this variation, which is confusing to both voters and election officials, also allows for considerable autonomy in the administration of the laws. Evidence suggests that election officials sometimes enfranchise those who have been legally disenfranchised or disenfranchise those who are legally

eligible to vote. Thus, these laws provide a useful lens for modeling the strategic decisionmaking involved in the administration of voting rights and monitoring that administration.

In the next section we review felon disenfranchisement laws and state administration of voting processes. In Section III we present our formal model of the determination of voting rights laws which incorporates how administrative structure and monitoring decisions affect the laws and their implementation. Section IV discusses the implications of these predictions for understanding felon disenfranchisement laws and other voting rights restrictions.

Felon Disenfranchisement Laws

Who Loses the Right to Vote

Before examining the administration of felon disenfranchisement laws, we consider the sizeable variation in these laws across the United States and the existing literature on these laws and their effects. As of March 2008, we divide states into five types.⁵

1. States without felon disenfranchisement laws (two states—Vermont and Maine)
2. States where only those currently incarcerated are ineligible to vote (the District of Columbia and thirteen states—Hawaii, Illinois, Indiana, Massachusetts, Michigan, Montana, New Hampshire, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, and Utah)
3. States where those released from prison but on parole lose their right to vote as well as those incarcerated (five states—California, Colorado, Connecticut, South Dakota, and New York)
4. States where some of those on probation as well as those in prison and on parole lose their right to vote (eighteen states—Alaska, Arkansas⁶, Georgia, Idaho, Kansas, Louisiana, Maryland, Minnesota, Missouri, New Jersey, New Mexico, North Carolina, Oklahoma, South Carolina, Texas, Washington⁷, West Virginia, and Wisconsin)

5. States where even after completion of sentences, probation, parole, and sometimes payment of fines, a pardon or other formal restitution of rights is necessary in some or all cases to be re-enfranchised for at least some offenses (twelve states—Alabama, Arizona, Delaware, Florida, Iowa⁸, Kentucky, Mississippi, Nebraska, Nevada, Tennessee, Virginia, and Wyoming)

Although these categories appear clear cut, within them are significant dissimilarities. States differ in the extent to which those incarcerated but not convicted are allowed to vote. For example, Connecticut Statutes Section 9-14a states that “Any person in the custody of the state being held at a community correctional center or a correctional institution, whose voting rights have not been denied, shall be deemed to be absent from the town or city of which he is an inhabitant for purposes of voting, notwithstanding that such center or institution may be situated within such town or city.” But in Colorado individuals who are in pretrial imprisonment are allowed to vote. Furthermore, incarceration may be restricted to state prison facilities. In Oregon those placed under the care of County corrections retain the right to vote and in Indiana those placed in home detention and community corrections programs are allowed to vote. However, if a felon violates their parole they cannot vote.

Furthermore, the types of crimes which take away an individual’s right to vote also vary across states. In 44 states and the District of Columbia, the disenfranchising crimes are listed as any felony or any felony or crime that results in imprisonment. Yet, definitions of felonies and whether a crime leads to imprisonment diverge across states meaning that these states are more dissimilar than they first appear. States that restrict voting according to particular types of crimes can be specific as in Mississippi where disenfranchisement is restricted to those who are convicted of murder, rape, bribery, theft, arson, obtaining money or goods under false pretenses, perjury, forgery, embezzlement, and bigamy or vague such as in Alabama and Alaska, where felons who commit crimes of “moral turpitude,” are disenfranchised. In Alaska the statute gives examples of crimes of moral turpitude but clearly does not restrict disenfranchisement to

those particular crimes. Although the interpretation of moral turpitude in Alabama has been defined by the state legislature as murder, rape, sodomy, sexual abuse, incest, sexual torture and nine other crimes mainly involving pornography and abuses against children, in 2005 the State Attorney General Troy King developed a new list that included a dozen additional crimes including several involving marijuana. On July 21, 2008 the American Civil Liberties Union (ACLU) sued Alabama election officials. According to a *New York Times* report the ACLU asserts that election officials are disenfranchising voters who have committed crimes that are not on even King's list. In particular, one of the plaintiffs, Annette McWashington Pruitt, claimed to be was turned away because of her 2003 conviction for receiving stolen property.⁹ Finally, in those states where restoring the right to vote requires a subjective decision by an official, these requirements vary by crime as well. For some crimes, the offender's vote is automatically restored and for other cases, such as soliciting a child by computer in Alabama, the convicted individual is disenfranchised for life and reinstatement of voting rights is not possible.

The variation is significant for our analysis because it enhances the ability of delegated agents to discriminate in the administration of the laws when voters are uninformed. That is, we contend that the dissimilarity often leads to significant confusion among the affected voters over their particular states' laws. To the extent that they are not monitored, i.e. given autonomy, then the local officials can make false statements about the law to voters and fear little retribution from the voters who are unaware of the intricate legal details in a given state. Ewald (2005), through a series of surveys and interviews, finds that many election officials provided incorrect answers about their own states' laws.

There are cases where the local officials' interpretation of a state's law was to keep those legally entitled from voting. In early 2004, workers with the Prison Reform Advocacy Center called all the county election officials in Ohio asking what the voting rights were for ex-felons. Even though Ohio disenfranchises only those in prison, in 21 counties election officials told the callers that offenders could not vote until their probation and/or parole had been concluded.¹⁰

Election workers also sometimes allow those to vote who are legally disenfranchised as in the case of Derek G. Little. Little, a convicted federal felon under court supervision, voted in the November 2004 election in Milwaukee although the state prohibits voting by those under such supervision. Little was charged by federal prosecutors for fraud but the charge was later dismissed when it became known that Little had been honest about his status, registering at the polls using his Department of Corrections ID card which had in bold letters the word “OFFENDER” printed on the card. Clearly the election official who allowed him to register did so in violation of the law in the state.¹¹

Because some states do disenfranchise those on probation and/or parole while others extend disenfranchisement beyond that period (forever in some cases), non incarcerated offenders are likely to believe election officials who tell them they cannot vote. This is particularly the case if the felon has family or friends who have encountered more restrictive laws in other states. Conversely, as in Little’s case, because some states have few or no voting restrictions for those not incarcerated, offenders may be equally likely to believe that they can vote when they are released from prison and give local election officials the opportunity to allow them to do so. Thus, we contend the differences across states are an important reason why discriminatory application of the laws is possible.

The previous literature on felon disenfranchisement has focused on *who* is disenfranchised, *why* disenfranchisement occurs, and estimating the *effects* of disenfranchisement on political outcomes or the population of ex-offenders [see Western (2006) and Manza and Uggen (2006) for reviews]. Our emphasis is on *how* the disenfranchisement is accomplished. We believe that the issue of how disenfranchisement occurs is important for understanding the other questions addressed in the literature, which we return to in Section IV. We now turn to our discussion of the administration of these disenfranchisement laws.

The Administration of Felon Disenfranchisement Decisions

Federal Involvement

The primary actors in implementing felon disenfranchisement laws are voter registration officials who determine voter eligibility. Hence, the administration of felon disenfranchisement is part of the general process of voter registration. As individuals present themselves to register to vote or as voter registration lists are scrutinized and compared to lists of offenders, disenfranchisement is implemented.

Voter registration processes in the states have been significantly affected by recent federal legislation which attempted to regularize election administration. In 1993, Congress enacted the National Voter Registration Act (NVRA) also known as the Motor Voter Act. This Act required that states provide the opportunity to apply to register to vote for federal general elections by three means: (1) at driver's license offices, (2) at all offices that provide public assistance and all offices that provide state-funded programs primarily engaged in providing services to persons with disabilities, and (3) by mail. After the controversy over counting votes in Florida in the 2000 presidential election, Congress enacted the Help America Vote Act of 2002 (HAVA), which created the United States Election Assistance Commission. Although most of the Act dealt with assisting states in improving and replacing voting equipment and managing ballot security, some of the measures were also designed to affect the administration of voter registration. One of the requirements of the Act was that states establish statewide voter registration lists on interactive computer technology that can be used by both local and state officials. States were required to have such databases established by January 2006.

The federal legislation might lead one to conclude that there is little variation across states in voter registration procedures. Certainly this is the intent of many of the proponents of the legislation and other reform proposals. However, we argue that even with these measures which have standardized much of the process across the states, states do vary significantly in how registration decisions are handled, in particular, how much of that decision process is

administered by local elected officials.

Local Election Officials and Voter Registration

All states have local officials who handle voter registrations, or in North Dakota where voter registration is optional, the process of determining who can vote on election day [Idaho, Maine, Minnesota, New Hampshire, Wisconsin, and Wyoming allow voters to register at the polls]. Even voter registrations that are mailed in or completed at state offices as required by the Motor Voter Act are forwarded to the local election official in charge of the jurisdiction where the voter resides. Thus, it would appear that all states essentially delegate voter registration decisions to these officials. However, the degree to which these officials are independent of state control diverges significantly across states.

The extent of decentralization of power is a function of two variables—the process by which local election officials are selected and whether the state provides an explicit monitoring role for political parties. We expect that when election officials are selected locally these officials will have more autonomy. Conversely, if a state provides for bipartisan monitoring, then we expect that the two major parties in their competition for office will reduce local officials' autonomy.

In all states some state official or officials, either a board or an elected or appointed official in the executive branch, is in charge of the election process and voter registration in the state. In most states the official is the Secretary of State, who is typically elected by the voters or in some cases by the state legislature. With the mandate of HAVA for states to maintain statewide voter registration lists, it would appear that these officials have considerable power over determining who is registered in a particular election.

Yet states differ in how much the state official or board controls local voter registration offices. In 36 states voter registration officials are either elected locally or appointed by locally elected officials. This means that although the Secretary of State's office maintains a statewide voter registration list, county officials are still in charge of the case-by-case decisions. Thus, these local officials can have considerable independence from the state official or board. Often

the local official in charge of voter registration is the county clerk, the county auditor, or the county recorder, who is either directly elected or appointed by other locally elected officials.

Both Washington state and Florida have locally selected election officials. In the 2004 Washington state gubernatorial election Republicans charged that illegal voting by felons in King County resulted in the win by Democrat Christine Gregoire which led to the development of a statewide voter registration accessible to both local and court officials as of January 2006. However, even under the new system each county's election officials monitors the roster of voters within their county and handles challenges and corrections. As the Assistant Secretary of State Steve Excell noted: "We still have to rely on the counties to do the footwork, the investigative work at the local level."¹² In Florida, state election officials had given a list of potential felons to local voter registrars prior to the 2004 presidential election, but many local election officials refused to use the list, which state election officials were forced to withdraw under much criticism.¹³

In other states the registration process is more centralized and under the control of state officials. In twelve states, the governor or the state official or board in charge of elections directly appoints or is significantly involved in the appointment of local voter registration officials, who are typically comprised of a local election board. In Ohio the political parties appoint members to the local election boards, who work with the Secretary of State. In Virginia the justices of the circuit courts appoint the local election officials and in the District of Columbia the election officials are appointed by the mayor.¹⁴

In the majority of states, thirty-three, if a political party is not represented among the elected officials involved in voter registration or in appointing those officials, then the political party has no legal influence over that process. But in seventeen states and the District of Columbia both major political parties, regardless of their representation among elected officials, have some influence usually through a bipartisan board at the state level or through requirements that local election boards have representation from the two major political parties. As noted above,

we contend that when the process is bipartisan, local election officials have less autonomy in making disenfranchisement decisions. But even bipartisan controls may not translate into a straightforward monitoring process. Although some states come close to a balance that is equal, for example, in Delaware both the local and state boards are required to be perfectly balanced by party, ultimately the members are appointed by elected officials (the governor in Delaware), which makes the control over registration further muddled. Moreover, the other states with bipartisanship requirements explicitly give the party that either holds the governorship or a majority in the state legislature (or the local county government) more positions, giving one party an advantage.

As noted in the Introduction, there is little empirical study of the effects of these differences on voting processes. Hamilton and Ladd (1996) investigate the use of straight ticket voting options in counties in the nonpresidential races in 1992 in North Carolina.¹⁵ They contend that when voters have the straight ticket option this will increase participation in less prominent races as well as voting for parties that are dominant in a county. In North Carolina bipartisan three member election boards appointed by the governor chose ballot designs with a significant degree of freedom. Because the incumbent governor was Republican, two of the three members of each board were Republicans. Hamilton and Ladd found evidence that suggests that these Republican dominated boards were more likely to use straight tickets the greater the share of Republicans as registered voters. Furthermore, they found that the use of straight tickets affected vote shares in less prominent races, as hypothesized, as well as the participation of voters in these races. Kimball and Kropf (2006) surveyed all United States local election officials the extent to which these officials are partisan or nonpartisan.¹⁶ In a six state study of paper ballot designs they discerned significant evidence that Democratic election administrators tended to produce better designed ballots than Republican administrators, but that the best designed ballots in their sample were produced by nonpartisan or bipartisan administrators. However, because there were few such administrators in their sample, the difference may be explained

by other factors. Nonetheless this research does provide preliminary evidence that election administrators are conscious of electoral effects.

Kimball, Kropf, and Battles (2006) investigated the effects of partisanship of election administrators on the management of provisional ballots in the 2004 presidential election. Provisional ballots were cast by voters whose names were not on the voter registration lists at the polls with the understanding that the decision whether to count these ballots would be made subsequently. They discovered that partisanship of state election administrators did have a significant effect on the rules states used in allowing provisional ballots in states where the race was close (so-called battleground states) but not in states where the race was not close (non battleground states). The direction of the effect was similar to that found with ballot design, Democrats instituted easier procedures for managing such ballots, while Republicans used more restrictive rules. However, partisanship of local election officials had little effect on the casting and counting of provisional votes. Moreover, they discerned differences in the determinants of provisional voting in battleground states from nonbattleground states. That is, in nonbattleground states the extent of provisional voting is explained by state administrative rules and demographics in predictable ways, but in battleground states it is not explained by these same factors, suggesting that in the heat of a competitive election, these factors were mitigated.

Bassi, Morton, and Trounstine (2008) studied the effects of partisanship of election administrators and monitoring procedures on turnout in state gubernatorial elections. They found that the partisanship of election officials is correlated with higher turnout of members of their parties in these elections. Moreover, they found that the effect of partisanship is mitigated when monitoring procedures such as bipartisan boards exist in a state. They also found that the variation across counties in a state in turnout is less when such monitoring boards or other restrictions on autonomy of local election officials are in place.

The results from these studies of the effects of election administration on ballot design, provisional voting, and turnout suggest that administrators do attempt to make decisions that

affect electoral outcomes, although their influence on these outcomes varies with the level of the administrator and the extent that their choices are made in a competitive environment where they are likely to be observed and monitored by other concerned actors.

Summary

Our review of felon disenfranchisement laws and voter registration procedures can be summarized in the following general conclusions:

- Felon disenfranchisement laws vary widely across the states and with respect to the type of conviction which often means that the interpretations that local election officials give to these laws can be consequential in deciding who participates on election day.
- States vary in how much discretion and autonomy they give to locally selected officials in the administration of voter registration (thus the determination of who participates on election day) as well as the extent that they require bipartisan involvement in the process and thus monitoring by those who are currently not in political power. However, empirical studies suggest that the decisions of election officials are less consequential when these officials are monitored and/or the electoral environment is competitive, in other words, when they are given less autonomy.

We now turn to our model of how these delegation decisions are made and their implications for the extent of disenfranchisement.

The Model

Voter Registration at the State Level

Actors and Timing

We first model the administration of voting when the registrar of voting is a state official. We can also think of the situation as one in which state officials control the selection of local registration officials, ignoring any principal agent problems that might exist between the state

official appointed local officials. In our model we assume two actors: a Legislature, L , and a Registrar, R . We assume that the question facing the legislature and the registrar is to what extent to allow a target group of well defined potential voters to participate in a future election. We normalize the size of this group as 1. We can think of this group of individuals as convicted felons, as noncitizens who have established residency, or as illiterate voters. We assume that the status quo is that these individuals are not currently allowed to vote.

We consider a four stage game. The basics of the timing are as follows (we define the specifics of our assumptions below):

1. In the first stage, L_0 , the legislature in term 0, chooses a law designating how many of these nonvoters to prevent from voting and chooses whether or not to monitor R .
2. In the second stage R determines how to implement the law.
3. In the third state an election is held in which a realized percentage of the target population is disenfranchised given the decisions of L_0 and R .
4. In stage four this realized percentage of disenfranchised voters partly determines the ideal point of the new legislature, L_1 .

The Determination of Disenfranchisement

We define the L_0 's law as m_L and R 's implementation of the law as m_R . We assume that $m_L, m_R \in [0, 1]$, where higher values of m_L and m_R imply more restrictive laws, more voters disenfranchised. Furthermore, we define the law as actually enforced as m which we assume is a weighted average of m_R and m_L as follows:

$$(1) \quad m = \lambda m_R + (1 - \lambda)m_L$$

λ is the weight placed on m_R and is a constant such that $0 < \lambda \leq 1$. Since by definition $m \in [0, 1]$, m is a measure of the percentage of target voters who are disenfranchised in the election.

λ is a function of two things—the competitiveness of the electoral environment in the state and whether the legislature monitors the registrar. We define a competitive environment as one in which the nonvoting population is at least as large a proportion of the population as the difference between the two major parties in the state. In this case, the legislature’s law and the implementation of the law affects the partisan balance in the state, meaning that partisan control can be affected by how the law is implemented and thus parties may play a greater independent role in monitoring R ’s implementation of the law.

However, in a noncompetitive environment, whether these voters are enfranchised or not does not affect partisan control of the state (although we assume that the legislature has preferences over the extent of disenfranchisement). For example, a noncompetitive electoral environment would characterize the situation in some southern states that used literacy tests during the first half of the twentieth century. Regardless of whether or not all of the population that could be potentially disenfranchised through the administration of the literacy test had the right to vote, Democrats would have retained control of state governments. Table 2 describes our assumptions about the relationship between λ , monitoring, and competitiveness:

Table 2: Determination of λ		
	Electoral Environment	
Leg. Decision	Not Competitive	Competitive
No Monitoring	$\lambda = 1$	$\lambda = \lambda_1$
Monitoring	$\lambda = \lambda_0$	$\lambda = \lambda_2$
where $0 < \lambda_2 < \lambda_1, \lambda_0 < 1$		

In the basic form of our model, we assume that monitoring is an all or nothing choice for the legislature. That is, we do not consider the situation where the legislature can choose a value for λ_0 or λ_2 . The presumption is that the legislature has limited options in the types of control it can exert over election officials if it chooses to. However, our results generalize to the case where the legislature can choose a value of λ_0 or λ_2 as long as $0 < \lambda_2 < \lambda_1, \lambda_0 < 1$. We present the simpler case of monitoring as an all or nothing decision for ease of exposition.

Thus, if the environment is noncompetitive and the legislature does not monitor, then the

weight placed on m_L is zero and the weight placed on m_R is one. We assume that if the legislature chooses to monitor the registrar or the electoral environment is competitive, the actual implemented law is a weighted average of the registrar's attempted implementation and the legislature's law. This reflects the fact that even when an outcome of an election is shown to be partly the consequence of fraud or illegal disenfranchisement, typically the final outcome is biased toward the initial judgement of the outcome. Hence, even when caught the registrar's attempted implementation influences who participates in the election. Furthermore, we assume that both monitoring and competitiveness increase the weight placed on m_L .

The Determination of the Ideal Point of the L_1

We assume that the ideal point of L_1 , the Legislature in term 1, over a unidimensional policy, x_1 is a function of the realized percentage of the target population who are disenfranchised and a random shock as follows:

$$(2) \quad x_1 = \bar{x} + k(m + \varepsilon)$$

where \bar{x} is the ideal point of the median voter in the Legislature if all of the target population is enfranchised, $0 \leq \bar{x} \leq 1$, k is a nonzero constant, and ε is a random variable with a uniform distribution on a support $[-b, b]$ and $1 > b > 0$. We also assume that $x_1 \in [\bar{x} - a, \bar{x} + 1 + a]$, where $a > b$.

Thus we assume that the ideal point of median voter in the Legislature in term 1 is directly related to the percentage of the target population who are disenfranchised.

For ease exposition, we normalize the parameters in the model by setting $\bar{x} = 0$ and $k = 1$. Our results hold qualitatively for other feasible values of these variables.

Issues in Interpretation

We discuss the legislature's decision as whether to grant autonomy (through choosing to monitor or not) rather than a decision on how much discretion to grant because it better captures the case of disenfranchisement. That is, although a few states' disenfranchisement laws are

vague and give some explicit autonomy to registrars (as in Alabama's lack of a definition of which crimes are classified as those of moral turpitude for example), most do have explicit rules governing who is disenfranchised. The discrimination occurs through a lack of enforcement by the legislature (a lack of monitoring) and the confusing nature of the laws across states that results in misinformation rather than an explicit decision of the legislature to grant the registrar the power to determine who can vote from the population affected by the law. Even in Alabama, those affected by the law have sought a precise characterization of which crimes are classified as those of moral turpitude in the courts. Therefore, we assume that state legislatures are forced to write a precise law, but then choose how much to monitor the law's implementation by the registrars.

How do we interpret ε ? As formulated higher values of x_1 represents more conservative policies. Then in order to achieve a given level of conservatism, the percentage of the target population of voters who need to be disenfranchised depends on the value of the random factor. If $\varepsilon > 0$, fewer voters need to be disenfranchised than the law requires to achieve a given level of conservatism and if $\varepsilon < 0$, more voters need to be disenfranchised than the law requires to achieve the same level of conservatism. We assume that the realization of ε is known by R but not L_0 . We can think of the random variable as capturing characteristics of voters that influence policy preferences but on which L_0 cannot legally discriminate by restricting voting rights or cannot observe but R can observe. Race, ethnicity, gender, education, income, are all factors that may be discernible by the registrar and meet these assumptions. Note that we are assuming that most of the potential voters are liberal. The model could be formulated assuming the opposite with symmetric conclusions.¹⁷

For an example of how to interpret ε , assume that there is a set of voters who can be potentially disenfranchised because of past or present criminal offenses. The actually enforced law, m , establishes who can and cannot legally vote according to their past or present criminal offenses. Assume further that some of the potential voters are African-American and others

are white and that it is known that white voters are always more conservative than African-American voters. We might think of the random term as follows: when $\varepsilon > 0$, whites make up a larger than predicted percentage of potential voters who are allowed to participate under a given disenfranchisement law leading to more conservative policies and when $\varepsilon < 0$, then blacks make up a larger than predicted percentage of potential voters who are allowed to participate under a given disenfranchisement law leading to more liberal policies.

Bendor and Meirowitz (2006) make the point that the typical random error term in delegation models is less important than has been previously thought, thus including such a term may be seen as complicating the model unnecessarily. In our model the random error term is necessary precisely because the legislature cannot disenfranchise voters directly by policy preferences or race or ethnicity. If we omitted the random error term then we would be assuming that the legislature could disenfranchise individuals based on their policy preferences or their race or ethnicity.

Utility Functions

We assume that the legislature in term 0 is forward looking and cares only about policy, not who can vote. That is, L_0 's utility is in terms of policy to be enacted by the future legislature as follows:

$$(3) \quad U_{L0} = E\left\{-\frac{1}{2}(x_1 - \hat{x}_{L0})^2 - \frac{c}{2}(m_L - m_R)^2\right\}$$

where \hat{x}_{L0} is the L_0 's ideal point over policy in term 1. It follows then that $\hat{x}_{L0} \in (-a, 1+a)$

The cost of monitoring the registrar is given by c , we assume $c > 0$ if the legislature monitors.

We assume that the legislature chooses whether or not to monitor the registrar. Further, if the legislature chooses to monitor the registrar, the legislature detects fully the registrar's implementation of the law. Notice that our functional form assumes that the greater the deviation the more costly it is for the legislature to monitor (catch) the registrar since catching means detecting the registrar's deviation fully. If the legislature chooses not to monitor, then $c = 0$.¹⁸

What does it mean for the legislature to monitor the registrar? We can think of the monitoring as setting up a process in which individuals are involved that represent the full distribution of preferences over x in the population in the state, not just the voting population in the election as decided by the registrars, as for example in a bipartisan election board. The assumption is that through such procedures, errant registrars are caught and forced to pay for their missdeeds.

We assume that the registrar also cares about policy enacted by future legislatures just like L_0 . Formally, the utility function for the registrar is given by:

$$(4) \quad U_R = E\left\{-\frac{1}{2}(x_1 - \hat{x}_R)^2 - \frac{f}{2}(m_L - m_R)^2\right\}$$

where \hat{x}_R is the policy ideal point of R and as with the Legislature's ideal point $\hat{x}_R \in (-a, 1+a)$. f is the fee paid by registrar of for each deviation from the legislature's disenfranchisement law when the legislature chooses to monitor or the electoral environment is competitive. We assume that $f > 0$ if either of these conditions hold, 0 otherwise. We assume that if the legislature chooses to monitor or the electoral environment is competitive, the registrar's implementation of the law is detected perfectly. This fee could be a loss in pay or demotion in job or possibly conviction of a crime. We assume that the more the registrar deviates from the legislature's law when the legislature chooses to monitor or the electoral environment is competitive, the greater the total of fees she expects to pay.¹⁹

Equilibrium Predictions Given a Monitoring Decision

Policy Outcomes We first analyze the equilibrium predictions with and without monitoring, treating the monitoring decision as having already been made. Then we consider the choice of the legislature whether to monitor, given these predictions. In our game, we assume that all the variables and the game structure are known to both actors with the exception of the value of the realized ε , which is only known to R (although the legislature knows the distributional assumptions about ε). We define an equilibrium to the game as the case where each actor is maximizing his or her expected utility given the other actors' choices and the structure of

the game (thus we use a Bayesian-Nash equilibrium concept). Since the game takes place sequentially, we first solve for the optimal strategy of the registrar given m_L and the other parameters and then solve for the optimal strategy of the legislature given the anticipated equilibrium strategy of the registrar.

The equilibrium choices of the legislature and the registrar are a function then of their ideal points, the monitoring decision of the legislature, and the electoral environment. We summarize the conclusions about policy outcomes under the different situations in Proposition 1 below (all proofs are contained in the appendix):

Proposition 1 *If there is a single registrar and the legislature and registrar have different ideal points over policy, that is, $\hat{x}_R \neq \hat{x}_{L0}$, then we can draw the following conclusions about the expected and observed policy outcomes:*

1. *The expected policy outcome, $E(x_1)$, is closest to the ideal point of the registrar when there is no monitoring and the electoral environment is noncompetitive and is closest to the ideal point of the legislature when there is no monitoring and the electoral environment is competitive.*
2. *If there is monitoring, in a competitive electoral environment $E(x_1)$ is closer to the ideal point of the legislature than in a noncompetitive electoral environment.*
3. *If the electoral environment is noncompetitive, when the legislature monitors $E(x_1)$ is closer to the ideal point of the legislature than when the legislature does not monitor.*
4. *If the electoral environment is competitive, when the legislature monitors $E(x_1)$ is closer to the ideal point of the registrar than when the legislature does not monitor.*
5. *If the legislature does not monitor and the electoral environment is noncompetitive the observed policy outcome is equal to the expected policy outcome. If the legislature monitors and/or the electoral environment is competitive then the observed policy is equal to $E(x_1) + \frac{f}{(\lambda^2 + f)}\varepsilon$.*

The first and second results of Proposition 1 are somewhat counterintuitive. That is, we find that the legislature is more likely to have a policy outcome close to its ideal point when the environment is competitive than when it is not competitive, given the two ideal points and the extent of monitoring. The legislature benefits from competition. Why is this the case? If the electoral environment is not competitive, then the expectation is that the policy that results from the implemented law is equivalent to the registrar's ideal point and the legislature has no influence over policy since there is no reason for the registrar to choose any differently. However, if the electoral environment is competitive, then the registrar has a potential of being caught and must pay a price that is proportional to how far she deviates from the legislature's law. Thus, the legislature is able to choose a law which yields an expected policy outcome that is equal its own ideal point because the registrar, through paying the fee for errant behavior, is forced to respond to the law the legislature enacts. Competitiveness of the electoral environment means that the legislature has more influence over administration of the law and thus policy. If the legislature monitors, we find a similar relationship. That is, when the legislature monitors the expected policy outcome will be a weighted average of the registrar's and legislature's ideal points as described in Table A1 in the appendix. The weight on the legislature's ideal point is higher when the electoral environment is competitive than when it is not competitive (the weight on the legislature's ideal point is a decreasing function of λ and since competition decreases λ , it increases the weight on the legislature's ideal point, even when the legislature is monitoring).

Moreover, the effect of monitoring (results 3 and 4) is also somewhat counterintuitive because it does not have the same clear effect on expected policy outcomes. That is, if the electoral environment is noncompetitive, then monitoring, by forcing the registrar to be influenced by the legislature's law, can result in an expected policy outcome that is closer to the legislature's ideal point than when the legislature does not monitor. If the electoral environment is competitive, though, then monitoring actually means that the expected policy outcome is further from the legislature's ideal point than without monitoring. The expected policy outcome with monitoring

is again a weighted function of the ideal points of the legislature and registrar. With monitoring the legislature pays for inducing the registrar to implement a law close to m_L and thus may be more willing to choose a law close to that preferred by the registrar in order to lower those costs. Without monitoring, the competitive environment means that the legislature does not have to pay for inducing the registrar to choose closer to its ideal point and thus the registrar's preferences have zero weight in the determination of the expected policy outcome. But with monitoring, the legislature pays for inducing the registrar to choose closer to its ideal point and thus the registrar's preferences have a positive weight in the determination of the expected policy outcome.

Although competitiveness always leads to an expected policy outcome closer to the legislature's ideal point and monitoring does when the electoral environment is noncompetitive, competitiveness and monitoring also affect the variance in observed policy outcomes (result 5). That is, when either the electoral environment is competitive or the legislature monitors or both, then the size of the random effect on the policy outcome will be a function of λ . For lower values of λ , then there is a greater variance in the observed policy choice.

Monitoring Decision

Should the legislature monitor the registrar? Our results above lead to an interesting counterintuitive implication, that the legislature should never monitor the registrar if the electoral environment is competitive. That is, when the electoral environment is competitive the expected policy outcome is closer to the ideal point of the legislature when the legislature does not monitor and the variance in the observed policy outcome is lower. Thus, unambiguously, the legislature should not monitor in a competitive electoral environment.

Since there are clear benefits to monitoring when the electoral environment is noncompetitive, should the legislature always choose to monitor in a noncompetitive environment? Not necessarily because monitoring does increase the variance in the observed policy outcome. When the electoral environment is noncompetitive, although the expected policy outcome is closer to

the legislature's ideal point, because the legislature does not know the size of the random shock, it might be optimal for the legislature not to monitor since if the shock is large, the registrar's choice, which is a certainty, may be closer to the ideal point of the legislature than the outcome with monitoring. That is, if the registrar and the legislature have preferences over x that are similar, the legislature would prefer to delegate to the registrar, not monitor, even though this means that the policy outcome will be closer to the registrar's ideal point than the legislature's. The decision, then, on whether the legislature should monitor depends on which choice gives the legislature higher expected utility given that the electoral environment is noncompetitive. Intuitively, we expect that when the electoral environment is noncompetitive, the legislature is more likely to monitor if the registrar's ideal point is far from the legislature's ideal point and less likely to monitor if the registrar's ideal point is close to the legislature's ideal point. Proposition 2 summarizes the conditions under which the legislature will choose to monitor (the proof is the appendix):

Proposition 2 *When there is a single registrar and the electoral environment is competitive, the legislature will not monitor. When there is a single registrar and the electoral environment is not competitive, the legislature chooses whether or not to monitor as follows:*

$$\begin{aligned}
 & \text{Do not monitor if } \hat{x}_R \in (\hat{x}_{L0} - \Omega, \hat{x}_{L0} + \Omega) \\
 & \text{Monitor if } \hat{x}_R \leq \hat{x}_{L0} - \Omega \text{ or } \hat{x}_R \geq \hat{x}_{L0} + \Omega \\
 & \text{where: } \Omega = \sqrt{\frac{\left(\frac{f^2 \hat{x}_{L0} + c \lambda_0^2 \hat{x}_R}{f^2 + c \lambda_0^2} - \hat{x}_{L0}\right)^2}{+c \left(\frac{\lambda_0 f (\hat{x}_{L0} - \hat{x}_R)}{f^2 + \lambda_0^2 c}\right)^2 - \frac{f^2 + c \lambda_0^2}{(\lambda_0^2 + f)^2} \frac{b^2}{3}}
 \end{aligned}$$

Registration of Voting at the Local Level

Assumptions

The previous analysis investigated the determinants of the optimal disenfranchisement laws, registrar implementation strategies, and monitoring decisions of the legislature when voter registration is handled at the state level. What happens when voter registration is controlled by

locally elected officials or officials who are appointed by locally elected officials? In other words, what happens when voter registration is delegated to officials who are selected by the district population either directly or indirectly? For ease of exposition we consider the case where there a state is divided into two districts, one urban and one suburban, and each district has its own registrar.

Now policy is a function of the implementation of the law in both districts as follows:

$$(5) \quad x_1 = \lambda(\alpha m_R^u + (1 - \alpha)m_R^s) + (1 - \lambda)m_L + \alpha\varepsilon^u + (1 - \alpha)\varepsilon^s$$

$$(6) \quad x_1^i = \lambda m_R^i + (1 - \lambda)m_L + \varepsilon^i, \quad i = u, s$$

where x_1^i is the policy outcome in district i ; u denotes the urban district and s the suburban one; λ is determined as above; α is the share of the state that is controlled by the urban registrar such that $0 < \alpha < 1$; and ε^i is a random variable with a uniform distribution on a support $[-b^i, b^i]$, where $1 > b^i > 0$ and $a \geq b^i$, all $i = u, s$.

We assume that the utility functions of the legislature and the two registrars are given by:

$$(7) \quad U_{L0} = E\left\{-\frac{1}{2}(x_1 - \hat{x}_{L0})^2 - \frac{c}{2} \left[\alpha (m_L - m_R^u)^2 + (1 - \alpha) (m_L - m_R^s)^2 \right] \right\}$$

$$(8) \quad U_R^i = E\left\{-\frac{1}{2}((1 - \beta^i)x_1 + \beta^i x_1^i - \hat{x}_R^i)^2 - \frac{f}{2} \left[\alpha (m_L - m_R^u)^2 + (1 - \alpha) (m_L - m_R^s)^2 \right] \right\},$$

$i = u, s$

where $1 \geq \beta^u \geq \alpha$ and $1 \geq \beta^s \geq (1 - \alpha)$. Note that when $\beta^i = 1$, registrar i cares only about the policy outcome in their own district and when the $\beta^i = 0$, registrar i cares only about the policy outcome in the state.

When Registrars Care Only About their District Outcomes

We begin our analysis by assuming that registrars care only about their local district policy outcomes, that is, $\beta^u = \beta^s = 1$ and the monitoring decision has been made. When there are two registrars and the registrars care only about local policy, then the situation is similar to the case where there is a single registrar, but with an ideal point equal to the weighted average of the registrars' ideal points, $\alpha\hat{x}_R^u + (1 - \alpha)\hat{x}_R^s$, which we define as \bar{x}_R . If $\bar{x}_R \neq \hat{x}_L$, then we can draw the following conclusions about policy outcomes as summarized in Proposition 3, which is

proved in the appendix.

Proposition 3 *In the two registrar case, if $\beta^u = \beta^s = 1$ and $\bar{x}_R \neq \hat{x}_L$, then we find the following relationships:*

1. *The expected policy outcome, $E(x_1)$, is closest to the weighted average of the registrars' ideal points when there is no monitoring and the electoral environment is noncompetitive and is closest to the ideal point of the legislature when there is no monitoring and the electoral environment is competitive.*
2. *If there is monitoring, in a competitive electoral environment $E(x_1)$ is closer to the ideal point of the legislature than in a noncompetitive electoral environment.*
3. *If the electoral environment is noncompetitive, when the legislature monitors $E(x_1)$ is closer to the ideal point of the legislature than when the legislature does not monitor.*
4. *If the electoral environment is competitive, when the legislature monitors $E(x_1)$ is closer to the weighted average of the registrars' ideal points than when the legislature does not monitor.*
5. *If the legislature does not monitor and the electoral environment is noncompetitive there is observed policy outcome is equal to the expected policy outcome. If the legislature monitors and/or the electoral environment is noncompetitive then the observed policy is equal to $E(x_1) + \frac{f}{(\lambda_2^2 + f)} (\alpha \varepsilon^u + (1 - \alpha) \varepsilon^s)$.*

The intuition behind the conclusions of Proposition 3 is the same as with Proposition 1 above. As in the case with a single registrar, the legislature gains nothing from monitoring when the electoral environment is competitive since the expected policy outcome is closer to the legislature's ideal point without monitoring and the size of the random effect is lower without monitoring. When the electoral environment is noncompetitive, the decision whether to monitor

depends on whether the weighted average of ideal points of the registrars is extreme relative to the legislature's ideal point as with a single registrar.

We now turn to the decision whether to monitor when the registrars care only about local policy. Proposition 4 summarizes the conditions under which the legislature will choose to monitor:

Proposition 4 *When there are two registrars who care only about local policy and the electoral environment is competitive, the legislature will never choose to monitor. When there are two registrars who care only about local policy and the electoral environment is not competitive, the legislature chooses whether or not to monitor as follows:*

Do not monitor if $\bar{x}_R \in (\hat{x}_{L0} - \Omega, \hat{x}_{L0} + \Omega)$

Monitor if $\bar{x}_R \leq \hat{x}_{L0} - \Omega$ or $\bar{x}_R \geq \hat{x}_{L0} + \Omega$

$$\text{where: } \Omega = \sqrt{\frac{\left(\frac{f^2 \hat{x}_{L0} + c \lambda_0^2 \bar{x}_R}{f^2 + c \lambda_0^2} - \hat{x}_{L0}\right)^2}{+c \left(\frac{\lambda_0 f (\hat{x}_{L0} - \bar{x}_R)}{f^2 + \lambda_0^2 c}\right)^2} - \frac{f^2 + c \lambda_0^2 \bar{b}^2}{(\lambda_0^2 + f)^2 3}}$$

and $\bar{b} = \alpha b^u + (1 - \alpha) b^s$

When Registrars Care About District and State Outcomes

When registrars care only about state outcomes, then $1 > \beta^u > 0$ and $1 > \beta^s > 0$. In this case, each registrar now cares about the registration choice made by her fellow registrar. The optimal strategies are interrelated as the registrars are in a game with each other. If the registrars have identical ideal points, then the situation is as if there is a single registrar and the results above apply. But if the registrars ideal points differ, then the registrars must consider the effects of the decisions of the other registrars on the state policy outcome. For ease of exposition we solve for the case where $\beta^u = \beta^s = \beta$, the qualitative results below follow for the more general case as well.

Proposition 5 summarizes our conclusions about policy outcomes in the case where the two registrars' ideal points differ, they care about state policy, and the $\bar{x}_R \neq \hat{x}_L$ (the proof is in the

appendix):

Proposition 5 *In the two registrar case, if $1 > \beta^u = \beta^s > 0$, $\hat{x}_R^u \neq \hat{x}_R^s$, and $\bar{x}_R \neq \hat{x}_L$, then we can draw the following conclusions:*

1. *When there is no monitoring and the electoral environment is noncompetitive an interior solution may not always exist. An interior solution will exist when the following two conditions hold:*

$$(a) \ 0 < m_R^{u*} = \left(\frac{1}{\beta}\right) ((1 - \alpha(1 - \beta))\hat{x}_R^u + ((1 - \alpha)(1 - \beta))\hat{x}_R^s) < 1$$

$$(b) \ 0 < m_R^{s*} = \left(\frac{1}{\beta}\right) (\alpha + \beta(1 - \alpha)\hat{x}_R^s - \alpha(1 - \beta)\hat{x}_R^u) < 1$$

If an interior solution does not exist, then one or both registrars choose to either register every potential voter in their district or no potential voters in their district.

If an interior solution does exist, each registrar will choose a registration policy such that the registrar whose ideal point is greater will choose a registration policy such that $m_R^{i} > \hat{x}_R^i$ and the registrar whose ideal point is the smaller will choose a registration policy such that $m_R^{i*} < \hat{x}_R^i$.*

2. *When conditions in (1) above holds, the expected policy outcome, $E(x_1)$, is closest to the weighted average of the registrars' ideal points when there is no monitoring and the electoral environment is noncompetitive and is closest to the ideal point of the legislature when there is no monitoring and the electoral environment is competitive.*
3. *If there is monitoring, in a competitive electoral environment $E(x_1)$ is closer to the ideal point of the legislature than in a noncompetitive electoral environment.*
4. *When condition 1 above holds, if the electoral environment is noncompetitive, when the legislature monitors $E(x_1)$ is closer to the ideal point of the legislature than when the legislature does not monitor.*

5. *If the electoral environment is competitive, when the legislature monitors $E(x_1)$ is closer to the weighted average of the registrars' ideal points (weighted by both the size of the district and the value the registrars place on state policy) than when the legislature does not monitor.*
6. *If the legislature does not monitor and the electoral environment is noncompetitive the observed policy outcome is equal to the expected policy outcome. If the legislature monitors and/or the electoral environment is noncompetitive then the observed policy is equal to $E(x_1) + \frac{\alpha[(1-\alpha)\lambda^2+f]\varepsilon^u+(1-\alpha)[\alpha\lambda^2+f]\varepsilon^s}{\lambda^2+f}$.*

In the case where registrars care about both state and local policy, we find some of the same comparative results discussed above in Propositions 1 and 3. The intuition behind these conclusions is the same as above. However, we also find that when registrars are not monitored and the electoral environment is noncompetitive, interior solutions for the registrar's choices may not exist as summarized in condition 1.

What does condition 1 in Proposition 5 mean? The condition is that the equilibrium values of the m_R^i in the game between the registrars are between 0 and 1. This condition means that the weight placed on the state policy must be small relative to the difference between the two registrars' ideal points. When the ideal points are too extreme, regardless of the weight the registrars place on state policy, as long as the weight is not zero, then an interior solution does not exist. For example, if either \hat{x}_R^u or \hat{x}_R^s equals 0 or 1, then at least one of the conditions is not satisfied and interior solutions do not exist when there is no monitoring and the electoral environment is noncompetitive. If all the registrars care about is state policy, that is, $\beta = 0$, then the condition means that an interior solution does not exist for any configuration of registrars' ideal points. It is unlikely that election officials who are either locally elected or appointed by locally elected officials will care exclusively about state policy, and so this situation is unrealistic.²⁰

Furthermore, in the case of interior solutions, it is interesting that when local election officials

care about state policy, and their ideal points are different from each other, they choose more extreme disenfranchisement policies than they would if they only cared about local policy. For example, if $\hat{x}_R^u = 0.75$, $\hat{x}_R^s = 0.1$, $\alpha = 0.5$, and $\beta = 0.8$, and there is no monitoring and the electoral environment is noncompetitive, then an interior solution exists with $m_R^{u*} = 0.83$ and $m_R^{s*} = 0.02$. Because the registrars are in a game with each other over state policy, they choose registration policies either more restrictive or more liberal than if they did not care about state policy in order to counter the registration policies of the other registrar.

Our results partially explain the empirical results found by Bassi, Morton, and Trounstein (2008) that the variance across counties in turnout in a state is related to the extent that monitoring of local election officials exists in the state.

Finally, because interior equilibria may not always exist when registrars care about state policy we cannot state universal conditions for the monitoring decision of the state legislature.

Implications and Concluding Remarks

In this paper we have presented a formal model of the decisions facing state legislatures in determining voter rights with a particular application to felon disenfranchisement laws. Our theoretical results have five important implications for understanding the effects of felon disenfranchisement laws as well as other measures that affect who can participate in elections. First, the administration structure, the extent that voter registration is monitored, and the competitiveness of the electoral environment are as important in understanding how these laws affect both individuals who are potentially disenfranchised and the political outcomes such as turnout and policy choices as the laws themselves. Typically, empirical studies of the effects of these laws do not control for the effects of these factors in estimating the consequences of these laws. Our results show that even if states have the same laws, if the states vary in how the laws are administered, the administration is monitored, and the competitiveness of the electoral environment, then the effects of the laws will be different and that empirical studies should not ignore

these relationships.

Second, our results suggest that counterfactual estimates of the effects of changing these laws are likely inaccurate when they fail to account for the fact that the legislature makes the choices simultaneously with other choices and the endogeneity of these choices. That is, the legislature chooses both a law and how much to monitor the implementation of the law as well as how much to delegate decision making to local elected officials. The legislature makes the choices on these dimensions that maximize its utility. The counterfactual thought experiment in which the legislature is forced to have a more expansive law on voting fails to account for the fact that such a legislature might choose a different monitoring or administrative structure. The implication is that anticipated effects of changes in voting rights may have much less of an impact than estimated. This is not a new idea. Certainly, many voting rights activists observed how some states responded to the expansion of voting rights to African-Americans in 1965 by adopting electoral systems that diluted these votes. As a consequence the Voting Rights Act was extended to some extent by the courts and Congress to cover such changes. Our analysis suggests that these counterfactual thought experiments need to consider how state legislatures would optimize on other dimensions if forced to choose a more expansive law.

Third, our results imply that sometimes innocuous changes in state laws that deal with administrative structure of the electoral process may have affects on felon disenfranchisement or other voting rights. Oftentimes states change laws that affect who can vote holding constant the administrative structure. Other times states change the administrative structure while holding the laws unchanged. Occasionally states change both at once. For example, Florida recently changed the position of the secretary of state, who is the elections official at the state level, from elected to appointed by the governor. Although in Florida voter registration is conducted at the local level by locally elected or appointed officials, a movement to make these officials also appointed could have significant effects on how Florida's felon disenfranchisement laws, which are severe, are administered and implemented. Our results demonstrate that all of these

changes should be studied to fully appreciate the extent and consequences of changes to voting laws such as felon disenfranchisement.

Fourth, some advocate more national involvement in voter registration processes as well as more centralized administration of voter registration at the state level. In the past such proposals have lead to increased federal legislation over the election process as demonstrated in the passage of the Motor Voter Act and HAVA. Our results can help inform the debate over these proposals and the importance of monitoring and competition in estimating the effects of such proposals.

Finally, our analysis provides an explanation for the concerns, such as those voiced by Spencer Overton in the introduction, about the effects of local administration of voter ID laws as recently passed in Arizona and Georgia and under consideration in many states. When local election officials are not monitored and the electoral environment is noncompetitive who can vote in a particular district in a state can depend on the preferences of those officials. When these officials care about both state and local policy, there may be wide variation in a state over who can participate in an election.

Appendix: Proofs of Results

Proof of Proposition 1:

Proof. The registrar's optimal choice if there is no monitoring and the electoral environment is noncompetitive is given by: $U_R = E\{-\frac{1}{2}(m_R + \varepsilon - \hat{x}_R)^2\}$ which does not depend on the legislature's law. It is straightforward to show that the optimal choice for the registrar is to choose $m_R^* = \hat{x}_R - \varepsilon$ and thus $x_1 = \hat{x}_R - \varepsilon + \varepsilon$ and $\hat{x}_R - \varepsilon = \hat{x}_R$. If there is monitoring and the electoral environment is noncompetitive, we first solve for the registrar's optimal choice for a given law:

$$\frac{\partial U_R}{\partial m_R} = -(\lambda_0 m_R + (1 - \lambda_0)m_L + \varepsilon - \hat{x}_R)\lambda_0 + f(m_L - m_R) = 0.$$

$$\text{Which yields: } m_R^* = \frac{\lambda_0 \hat{x}_R - \lambda \varepsilon + [f - \lambda_0(1 - \lambda_0)]m_L}{(\lambda_0^2 + f)}$$

Now, we can solve for the legislature's optimal law given the registrar's choice by substituting in the registrar's response function:

$$\begin{aligned}
U_{L0} &= E\left\{-\frac{1}{2}\left(\lambda_0 \frac{\lambda_0 \hat{x}_R - \lambda \varepsilon + [f - \lambda_0(1 - \lambda_0)]m_L}{(\lambda_0^2 + f)} + (1 - \lambda_0)m_L + \varepsilon - \hat{x}_{L0}\right)^2\right. \\
&\quad \left. - \frac{c}{2}\left(m_L - \frac{\lambda_0 \hat{x}_R - \lambda_0 \varepsilon + [f - \lambda_0(1 - \lambda_0)]m_L}{(\lambda_0^2 + f)}\right)^2\right\} \\
\frac{\partial U_{L0}}{\partial m_L} &= E\left[-\left(\frac{\lambda_0^2 \hat{x}_R - f \varepsilon + f m_L + (\lambda_0^2 + f)\hat{x}_{L0}}{(\lambda_0^2 + f)}\right) \frac{f}{(\lambda_0^2 + f)} - \left(\frac{\lambda_0 m_L - \lambda \hat{x}_R + \lambda \varepsilon}{(\lambda_0^2 + f)}\right) \frac{c \lambda_0}{(\lambda_0^2 + f)}\right] = 0 \\
m_L^* &= \frac{f(\lambda_0^2 + f)\hat{x}_{L0} - \lambda_0^2(f - c)\hat{x}_R}{f^2 + \lambda_0^2 c}
\end{aligned}$$

We can now solve for the equilibrium policy substituting into equation (3) which yields:

$$x_1^* = \frac{f^2 \hat{x}_{L0} + c \lambda_0^2 \hat{x}_R}{(f^2 + c \lambda_0^2)} + \frac{f}{(\lambda_0^2 + f)} \varepsilon$$

The case where the electoral environment is competitive but there is no monitoring, is solved similarly with $c = 0$. We can summarize the predictions in Table A1:

Table A1: Single Registrar Case			
		Electoral Environment	
Leg. Decision		Not Competitive	Competitive
No Monitoring	m_R^*	$\hat{x}_R - \varepsilon$	$\frac{\lambda_1(\hat{x}_R - \varepsilon) + [f - \lambda_1(1 - \lambda_1)]m_L}{(\lambda_1^2 + f)}$
	m_L^*	indeterminant	$\frac{f(\lambda_1^2 + f)\hat{x}_{L0} - \lambda_1^2 f \hat{x}_R}{f^2}$
	x_1^*	\hat{x}_R	$\hat{x}_{L0} + \frac{f}{(\lambda_1^2 + f)} \varepsilon$
Monitoring	m_R^*	$\frac{\lambda_0(\hat{x}_R - \varepsilon) + [f - \lambda_0(1 - \lambda_0)]m_L}{(\lambda_0^2 + f)}$	$\frac{\lambda_2(\hat{x}_R - \varepsilon) + [f - \lambda_2(1 - \lambda_2)]m_L}{(\lambda_2^2 + f)}$
	m_L^*	$\frac{f(\lambda_0^2 + f)\hat{x}_{L0} - \lambda_0^2(f - c)\hat{x}_R}{f^2 + \lambda_0^2 c}$	$\frac{f(\lambda_2^2 + f)\hat{x}_{L0} - \lambda_2^2(f - c)\hat{x}_R}{f^2 + \lambda_2^2 c}$
	x_1^*	$\frac{f^2 \hat{x}_{L0} + c \lambda_0^2 \hat{x}_R}{(f^2 + c \lambda_0^2)} + \frac{f}{(\lambda_0^2 + f)} \varepsilon$	$\frac{f^2 \hat{x}_{L0} + c \lambda_2^2 \hat{x}_R}{(f^2 + c \lambda_2^2)} + \frac{f}{(\lambda_2^2 + f)} \varepsilon$

where $0 < \lambda_2 < \lambda_1, \lambda_0 < 1$

To derive the predictions in Proposition 1, we compare the expected policy outcomes that are derived from Table A1. First consider the situation where there is no monitoring. If the electoral environment is not competitive, then the expected policy that results from the implemented law is equivalent to the registrar's ideal point and the legislature has no influence over the law or policy. However, if the electoral environment is competitive, then the legislature is able to choose a law which yields an expected policy outcome that is expected to equal its own ideal point. Thus, competitiveness of the electoral environment means that the legislature has more influence over the expected policy when the legislature does not monitor. If the legislature monitors, we find a similar relationship. That is, when the legislature monitors the expected policy outcome will be a weighted average of the registrar's and legislature's ideal points. The

weight on the legislature's ideal point is higher when the electoral environment is competitive than when it is not competitive. In contrast, it is not always the case that monitoring means that the expected policy outcome is closer to the legislature's ideal point. If the electoral environment is noncompetitive, then this is the case, the expected policy outcome is closer to the legislature's ideal point. But if the electoral environment is competitive, then monitoring, since it costs the legislature resources, means that the expected policy outcome is actually closer to the registrar ideal point than if monitoring did not occur. ■

Proof of Proposition 2:

Proof. First we consider the case where there is a noncompetitive electoral environment. If the legislator does not monitor, he receives for sure: $U_{L0} = E\{-\frac{1}{2}(\hat{x}_R - \hat{x}_{L0})^2\}$. If the legislator does monitor, he expects to receive:

$$\begin{aligned} U_{L0} &= E\left\{-\frac{1}{2}\left(\frac{f^2\hat{x}_{L0}+c\lambda^2\hat{x}_R}{(f^2+c\lambda^2)} + \frac{f}{(\lambda^2+f)}\varepsilon - \hat{x}_{L0}\right)^2\right. \\ &\quad \left.- \frac{c}{2}\left(\frac{f(\lambda^2+f)\hat{x}_{L0}-\lambda^2(f-c)\hat{x}_R}{f^2+\lambda^2c} - \frac{\lambda\hat{x}_R-\lambda\varepsilon}{(\lambda^2+f)} - \frac{f-\lambda(1-\lambda)}{(\lambda^2+f)}\frac{f(\lambda^2+f)\hat{x}_{L0}-\lambda^2(f-c)\hat{x}_R}{f^2+\lambda^2c}\right)^2\right\} \\ &= -\frac{1}{2}\left(\frac{f^2\hat{x}_{L0}+c\lambda^2\hat{x}_R}{(f^2+c\lambda^2)} - \hat{x}_{L0}\right)^2 - \frac{c}{2}\left(\frac{\lambda f(\hat{x}_{L0}-\hat{x}_R)}{f^2+\lambda^2c}\right)^2 - \frac{1}{2}E\left[\frac{f^2+c\lambda^2}{(\lambda^2+f)^2}\varepsilon^2\right] \\ &\quad - \left(\frac{f^2\hat{x}_{L0}+c\lambda^2\hat{x}_R}{(f^2+c\lambda^2)} - \hat{x}_{L0}\right)\frac{f}{(\lambda^2+f)}E[\varepsilon] - c\left(\frac{\lambda f(\hat{x}_{L0}-\hat{x}_R)}{f^2+\lambda^2c}\right)\frac{\lambda}{(\lambda^2+f)}E[\varepsilon] \end{aligned}$$

But the legislature does not know ε . Recall that we assumed that ε has a uniform distribution on the support $[-b, b]$ with a mean of 0. Then:

$$\begin{aligned} E[U_{L0}] &= -\frac{1}{2}\left(\frac{f^2\hat{x}_{L0}+c\lambda^2\hat{x}_R}{(f^2+c\lambda^2)} - \hat{x}_{L0}\right)^2 - \frac{c}{2}\left(\frac{\lambda f(\hat{x}_{L0}-\hat{x}_R)}{f^2+\lambda^2c}\right)^2 - \frac{1}{2}\frac{f^2+c\lambda^2}{(\lambda^2+f)^2}E[\varepsilon^2] \\ &= \int U_L(\varepsilon)dF(\varepsilon) = -\frac{1}{2}\left(\frac{f^2\hat{x}_{L0}+c\lambda^2\hat{x}_R}{(f^2+c\lambda^2)} - \hat{x}_{L0}\right)^2 - \frac{c}{2}\left(\frac{\lambda f(\hat{x}_{L0}-\hat{x}_R)}{f^2+\lambda^2c}\right)^2 - \frac{1}{2}\frac{f^2+c\lambda^2}{(\lambda^2+f)^2}\int_{-b}^b \varepsilon^2 \frac{1}{2b}d\varepsilon \\ &= -\frac{1}{2}\left(\frac{f^2\hat{x}_{L0}+c\lambda^2\hat{x}_R}{(f^2+c\lambda^2)} - \hat{x}_{L0}\right)^2 - \frac{c}{2}\left(\frac{\lambda f(\hat{x}_{L0}-\hat{x}_R)}{f^2+\lambda^2c}\right)^2 - \frac{f^2+c\lambda^2}{2(\lambda^2+f)^2}\frac{b^2}{3} \end{aligned}$$

In order to decide whether to monitor or not, the legislature calculates the certainty equivalent of $E[U_{L0}]$. The certainty equivalent of $E[U_L]$ is the utility for which the legislature is indifferent between the gamble $F(\varepsilon)$ and the certainty amount $cert(F, \varepsilon)$. The certain amount $cert(F, \varepsilon)$ that makes the legislature indifferent between monitoring and not monitoring is such that:

$$U_{L0} = E\left\{-\frac{1}{2}(cert(F, e) - \hat{x}_L)^2\right\}$$

$$= -\frac{1}{2} \left(\frac{f^2 \widehat{x}_{L0} + c\lambda^2 \widehat{x}_R}{f^2 + c\lambda^2} - \widehat{x}_{L0} \right)^2 - \frac{c}{2} \left(\frac{\lambda f (\widehat{x}_{L0} - \widehat{x}_R)}{f^2 + \lambda^2 c} \right)^2 - \frac{f^2 + c\lambda^2}{2(\lambda^2 + f)^2} \frac{b^2}{3}$$

Solving for $cert(F, e) : cert(F, \varepsilon) = \widehat{x}_{L0} \pm \Omega$

$$\text{Where } \Omega = \sqrt{2C + \left(\frac{f^2 \widehat{x}_{L0} + c\lambda^2 \widehat{x}_R}{f^2 + c\lambda^2} - \widehat{x}_{L0} \right)^2 + c \left(\frac{\lambda f (\widehat{x}_{L0} - \widehat{x}_R)}{f^2 + \lambda^2 c} \right)^2 - \frac{f^2 + c\lambda^2}{(\lambda^2 + f)^2} \frac{b^2}{3}}$$

In the competitive electoral environment, need to fill this in. ■

Proof of Proposition 3:

Proof. The registrars' optimal choices if there is no monitoring and the electoral environment is noncompetitive is given by: $U_R^i = E\{-\frac{1}{2}(m_R^i + \varepsilon^i - \widehat{x}_R)^2\}$ which does not depend on the legislature's law. It is straightforward to show that the optimal choice for the registrar is to choose $m_R^{i*} = \widehat{x}_R^i - \varepsilon^i$ and thus $x_1^i = \widehat{x}_R^i - \varepsilon + \varepsilon$. The policy outcome for the state will equal: $x_1 = \alpha(\widehat{x}_R^u - \varepsilon^u) + (1 - \alpha)(\widehat{x}_R^s - \varepsilon^s) + \alpha\varepsilon^u + (1 - \alpha)\varepsilon^s = \alpha\widehat{x}_R^u + (1 - \alpha)\widehat{x}_R^s$

If there is monitoring and the electoral environment is noncompetitive, we first solve for the registrars' optimal choices for a given law as in the case with a single registrar which yields:

$$m_R^{i*} = \frac{\lambda_0(\widehat{x}_R^i - \varepsilon^i) + [f - \lambda_0(1 - \lambda_0)]m_L}{(\lambda_0^2 + f)}$$

Now, we can solve for the legislature's optimal law given the registrars' choices by substituting in the registrars' response functions as in the case with a single registrar which yields:

$$m_L^* = \frac{f(\lambda_0^2 + f)\widehat{x}_{L0} - \lambda_0^2(f - c)(\alpha\widehat{x}_R^u + (1 - \alpha)\widehat{x}_R^s)}{f^2 + \lambda_0^2 c}$$

We can now solve for the equilibrium policy substituting into equation (3) which yields:

$$x_1^* = \frac{f^2 \widehat{x}_{L0} + c\lambda_0^2(\alpha\widehat{x}_R^u + (1 - \alpha)\widehat{x}_R^s)}{(f^2 + c\lambda_0^2)} + \frac{f}{(\lambda_0^2 + f)} (\alpha\varepsilon^u + (1 - \alpha)\varepsilon^s)$$

The case where the electoral environment is competitive but there is no monitoring, is solved similarly with $c = 0$. We can summarize the predictions in Table A2:

Table A2: Two Registrar Case – Care Only About Local Policy		
Leg. Decision		Noncompetitive Electoral Environment
No Monitoring	m_R^{i*}	$\hat{x}_R^i - \varepsilon$
	m_L^*	indeterminant
	x_1^*	$\alpha \hat{x}_R^u + (1 - \alpha) \hat{x}_R^s$
Monitoring	m_R^{i*}	$\frac{\lambda_0(\hat{x}_R^i - \varepsilon^i) + [f - \lambda_0(1 - \lambda_0)]m_L}{(\lambda_0^2 + f)}$
	m_L^*	$\frac{f(\lambda_0^2 + f)\hat{x}_{L0} - \lambda_0^2(f - c)(\alpha \hat{x}_R^u + (1 - \alpha)\hat{x}_R^s)}{f^2 + \lambda_0^2 c}$
	x_1^*	$\frac{f^2 \hat{x}_{L0} + c\lambda_0^2(\alpha \hat{x}_R^u + (1 - \alpha)\hat{x}_R^s)}{(f^2 + c\lambda_0^2)} + \frac{f}{(\lambda_0^2 + f)}(\alpha \varepsilon^u + (1 - \alpha)\varepsilon^s)$
Competitive Electoral Environment		
No Monitoring	m_R^{i*}	$\frac{\lambda_1(\hat{x}_R^i - \varepsilon) + [f - \lambda_1(1 - \lambda_1)]m_L}{(\lambda_1^2 + f)}$
	m_L^*	$\frac{f(\lambda_1^2 + f)\hat{x}_{L0} - \lambda_1^2 f(\alpha \hat{x}_R^u + (1 - \alpha)\hat{x}_R^s)}{f^2}$
	x_1^*	$\hat{x}_{L0} + \frac{f}{(\lambda_1^2 + f)}(\alpha \varepsilon^u + (1 - \alpha)\varepsilon^s)$
Monitoring	m_R^{i*}	$\frac{\lambda_2(\hat{x}_R^i - \varepsilon^i) + [f - \lambda_2(1 - \lambda_2)]m_L}{(\lambda_2^2 + f)}$
	m_L^*	$\frac{f(\lambda_2^2 + f)\hat{x}_{L0} - \lambda_2^2(f - c)(\alpha \hat{x}_R^u + (1 - \alpha)\hat{x}_R^s)}{f^2 + \lambda_2^2 c}$
	x_1^*	$\frac{f^2 \hat{x}_{L0} + c\lambda_2^2(\alpha \hat{x}_R^u + (1 - \alpha)\hat{x}_R^s)}{(f^2 + c\lambda_2^2)} + \frac{f}{(\lambda_2^2 + f)}(\alpha \varepsilon^u + (1 - \alpha)\varepsilon^s)$
where $0 < \lambda_2 < \lambda_1, \lambda_0 < 1$		

Proof of Proposition 4:

Proof. The proof of proposition 4 is straightforward by following the same procedures as in proposition 2 substituting in from the results of proposition 3. ■

Proof of Proposition 5:

Proof. In the case where the two registrars who care about both state and local policy, the utility functions for the two registrars and there is no monitoring and the electoral environment is noncompetitive are given by:

$$U_R^i = E\left\{-\frac{1}{2}((1 - \beta)x_1 + \beta x_1^i - \hat{x}_R^i)^2\right\}, i = u, s$$

Maximizing these utility functions lead to the following optimal registration strategies:

$$m_R^{u*} = \frac{\hat{x}_R^u - (1 - \beta)(1 - \alpha)m_R^s}{((1 - \beta)\alpha + \beta)} - \varepsilon^u$$

$$m_R^{s*} = \frac{\hat{x}_R^s - (1 - \beta)\alpha m_R^u}{((1 - \beta)(1 - \alpha) + \beta)} - \varepsilon^s$$

Solving these two equations simultaneously yields the solutions and the conditions in the proposition for the case when there is no monitoring and the electoral environment is noncompetitive.

When there is monitoring and the electoral environment is noncompetitive, then we do have an interior solution even when $\beta = 0$. For ease of exposition we solve for that solution for the case when $\beta = 0$; the case when $\beta > 0$ is a simple expansion. First we solve the urban registrar's maximization problem as above but with the addition of monitoring:

$$U_R^u = E\left\{-\frac{1}{2}(\lambda_0(\alpha m_R^u + (1-\alpha)m_R^s) + (1-\lambda_0)m_L + \alpha\varepsilon^u + (1-\alpha)\varepsilon^s - \widehat{x}_R^u)^2 - \frac{f}{2}\alpha(m_L - m_R^u)^2\right\}$$

$$\frac{\partial U_R^u}{\partial m_R^u} = -\alpha[(\lambda_0(\alpha m_R^u + (1-\alpha)m_R^s) + (1-\lambda_0)m_L + \alpha\varepsilon^u - \widehat{x}_R^u)\lambda_0 + \alpha f(m_L - m_R^u)] = 0$$

$$m_R^{u*} = \frac{\lambda_0[\widehat{x}_R^u - (1-\alpha)\lambda_0 m_R^s - \alpha\varepsilon^u - (1-\alpha)E[\varepsilon^s]] + [f - \lambda_0(1-\lambda_0)]m_L}{\alpha\lambda_0^2 + f}$$

Then we solve the suburban registrar's problem similarly yielding:

$$m_R^{s*} = \frac{\lambda_0[\widehat{x}_R^s - \alpha\lambda_0 m_R^u - (1-\alpha)\varepsilon^u - \alpha E[\varepsilon^s]] + [f - \lambda_0(1-\lambda_0)]m_L}{(1-\alpha)\lambda_0^2 + f}$$

Then we solve for the equilibrium values in the subgame between the registrars yielding:

$$m_R^{u*} = \frac{\lambda_0\{[(1-\alpha)\lambda_0^2 + f]\widehat{x}_R^u - (1-\alpha)\lambda_0^2\widehat{x}_R^s - \alpha f\varepsilon^u\} + f[f - \lambda_0(1-\lambda_0)]m_L}{f(\lambda_0^2 + f)}$$

$$m_R^{s*} = \frac{\lambda_0\{[\alpha\lambda_0^2 + f]\widehat{x}_R^s - \alpha\lambda_0^2\widehat{x}_R^u - (1-\alpha)f\varepsilon^s\} + f[f - \lambda_0(1-\lambda_0)]m_L}{f(\lambda_0^2 + f)}$$

The next step is to solve the legislature's problem:

$$U_{L0} = E\left\{-\frac{1}{2}(\lambda_0(\alpha m_R^{u*} + (1-\alpha)m_R^{s*}) + (1-\lambda_0)m_L + \alpha\varepsilon^u + (1-\alpha)\varepsilon^s - \widehat{x}_L)^2 - \frac{c}{2}\alpha(m_L - m_R^{u*})^2 - \frac{c}{2}(1-\alpha)(m_L - m_R^{s*})^2\right\}$$

$$\frac{\partial U_{L0}}{\partial m_L} = -\left[\lambda_0\left(\alpha\frac{f\lambda_0\widehat{x}_R^u}{f(\lambda_0^2+f)} + (1-\alpha)\frac{f\lambda_0\widehat{x}_R^s}{f(\lambda_0^2+f)} + \frac{f[f-\lambda_0(1-\lambda_0)]m_L}{f(\lambda_0^2+f)}\right) + (1-\lambda_0)m_L - \widehat{x}_L\right]$$

$$* \left(\frac{\lambda_0 f[f-\lambda_0(1-\lambda_0)]}{f(\lambda_0^2+f)} + (1-\lambda_0)\right)$$

$$- c\alpha\left(m_L - \frac{\lambda_0\{[(1-\alpha)\lambda_0^2 + f]\widehat{x}_R^u - (1-\alpha)\lambda_0^2\widehat{x}_R^s - \alpha f\varepsilon^u\} + f[f-\lambda_0(1-\lambda_0)]m_L}{f(\lambda_0^2+f)}\right)$$

$$* \left(1 - \frac{f[f-\lambda_0(1-\lambda_0)]}{f(\lambda_0^2+f)}\right)$$

$$- c(1-\alpha)\left(m_L - \frac{\lambda_0\{[\alpha\lambda_0^2 + f]\widehat{x}_R^s - \alpha\lambda_0^2\widehat{x}_R^u - (1-\alpha)f\varepsilon^s\} + f[f-\lambda_0(1-\lambda_0)]m_L}{f(\lambda_0^2+f)}\right)$$

$$* \left(1 - \frac{f[f-\lambda_0(1-\lambda_0)]}{f(\lambda_0^2+f)}\right) = 0$$

which yields the following:

$$m_L^* = \frac{f(\lambda_0^2+f)\widehat{x}_{L0}+\lambda_0^2(c-f)[\alpha\widehat{x}_R^u+(1-\alpha)\widehat{x}_R^s]}{f^2+\lambda_0^2c}$$

$$x_1^* = \frac{f^2\widehat{x}_{L0}+\lambda_0^2c[\alpha\widehat{x}_R^u+(1-\alpha)\widehat{x}_R^s]}{f^2+\lambda_0^2c} + \frac{\alpha[(1-\alpha)\lambda_0^2+f]\varepsilon^u+(1-\alpha)[\alpha\lambda_0^2+f]\varepsilon^s}{\lambda_0^2+f}$$

The cases where the electoral environment is competitive and there is monitoring can be similarly solved with λ_2 in place of λ_0 . When the electoral environment is competitive and there is no monitoring, then we have:

$$m_R^{u*} = \frac{\lambda_1\{[(1-\alpha)\lambda_1^2+f]\widehat{x}_R^u-(1-\alpha)\lambda_1^2\widehat{x}_R^s-\alpha f\varepsilon^u\}+f[f-\lambda_1(1-\lambda_1)]m_L}{f(\lambda_1^2+f)}$$

$$m_R^{s*} = \frac{\lambda_1\{[\alpha\lambda_1^2+f]\widehat{x}_R^s-\alpha\lambda_1^2\widehat{x}_R^u-(1-\alpha)f\varepsilon^s\}+f[f-\lambda_1(1-\lambda_1)]m_L}{f(\lambda_1^2+f)}$$

$$m_L^* = \frac{f(\lambda_1^2+f)\widehat{x}_{L0}+\lambda_1^2(-f)[\alpha\widehat{x}_R^u+(1-\alpha)\widehat{x}_R^s]}{f^2}$$

$$x_1^* = \widehat{x}_{L0} + \frac{\alpha[(1-\alpha)\lambda_1^2+f]\varepsilon^u+(1-\alpha)[\alpha\lambda_1^2+f]\varepsilon^s}{\lambda_1^2+f}$$

These solutions then give the conclusions drawn in the Proposition. ■

Notes

¹Also in federal elections, states cannot restrict voting by age for those older than seventeen.

²Sometimes these laws apply to those convicted of misdemeanors as discussed below.

³Spencer Overton, “The Carter-Baker ID Card Proposal: Worse than Georgia,” *Roll Call*, September 28, 2005.

⁴quoted in Keyssar (2000, page 112).

⁵We exclude laws pertaining to voting related convictions which in many states lead to permanent disenfranchisement regardless of the laws with respect to other criminal convictions. These laws are currently in flux. Within the last five years some states have increased the restrictions placed on voting by offenders as Kansas did in 2002 by adding probationers to the category of excluded felons, while others have loosened restrictions like Maryland did in the same year by relaxing its restrictions on nonviolent felons who had two or more convictions. The information on these laws used can be found from the Sentencing Project, <http://www.sentencingproject.org>. Because of recent changes in these laws, we verified that information on a state-by-state basis.

⁶Failure to satisfy obligations associated with convictions may result in post-sentence loss of voting rights.

⁷Failure to satisfy obligations associated with convictions may result in post-sentence loss of voting rights.

⁸In 2005 Iowa Governor Tom Vilsack issued an executive order automatically restoring the voting rights of all ex-felons, a process that will continue on a monthly basis upon the completion of sentences.

⁹See Adam Nossiter, “ACLU Sues Alabama on Ballot Access,” *New York Times*, July 22, 2008.

¹⁰Scott Hassen, “Officials Kept Felons From Voting, Lawsuit Charges,” *Cleveland Plain Dealer*, August 18, 2004.

¹¹The city Election Commission Executive Director Susan Edman remarked on finding this out: “I expect that should have raised a red flag. That shouldn’t have been accepted, really.” Gina Barton, “A Felon But Not a Fraud,” *Milwaukee Journal Sentinel*, March 17, 2006.

¹²Gregory Roberts, “Voter Database Should Fix Problems But New State System Won’t Solve All Registration Flaws,” *The Seattle Post-Intelligencer*, December 29, 2005

¹³The state later announced that the list did not include potential felons who had self identified as Hispanics and thus would have allowed some to vote illegally if the list had been used as the source for disenfranchisement. Apparently the glitch had existed since at least 1998 and had been known to state election officials.

¹⁴In the next section we model state selection of local election officials as the case where the registrar is a single state official. Sometimes such state selected registrars are given autonomy to violate state laws as is commonly perceived to have occurred in the discriminatory administration of literacy tests by state selected voter registrars in the post-Reconstruction south.

¹⁵The presidential election was on a separate ballot.

¹⁶The officials they surveyed were the ones in charge of conducting the election, which were

sometimes different from those in charge of voter registration, described above. For example, in Alabama voter registration is handled by a board appointed by the governor and two other state officials, but local elections are conducted by an elected partisan county probate judge.

¹⁷The model can be alternatively interpreted where x_1 is not a measure of public policy, but who can vote. That is, we could interpret x_1 as a measure of the percentage of individuals of a particular type in the group of potential voters, for example, African-Americans or Latinos, that will be prevented from participating in the upcoming election. Under such an assumption, then, equation (2) is the relationship between the legislature's disenfranchisement law, the registrar's implementation of the law, and a random shock in determining the percentage of individuals of that particular type who are disenfranchised. In such a formulation, since we allow x_1 to vary from $-a$ to $1 + a$, if all the individuals of this type are enfranchised, then $x_1 = -a$ and if all the individuals of this type are disenfranchised, then $x_1 = 1 + a$. The assumption is that increases in disenfranchisement of these potential voters increases disenfranchisement of the percentage of individuals of this particular type.

¹⁸As mentioned in the previous note, we could alternatively interpret x_1 as a measure of the percentage of voters of a particular type, for example, a particular race or ethnicity of voters, that will be prevented from participating in the upcoming election. In such an interpretation then, if the legislature prefers that all of these individuals are enfranchised, then $\hat{x}_{L0} = -a$ and if the legislature prefers that all of these individuals are disenfranchised, then $\hat{x}_{L0} = 1 + a$.

¹⁹Similar to our discussion of the legislature's preferences in the previous two notes, an alternative view of the registrar's utility is that she has preferences over who can vote, not policy. If we think of x_1 as measuring the extent a particular racial or ethnic group is disenfranchised, then a registrar who prefers that all of these individuals be allowed to participate would have $\hat{x}_R = -a$, and a registrar who prefers that all of these individuals be disenfranchised would have $\hat{x}_R = 1 + a$.

²⁰However, it might indeed be the case, if we assume that x_1 is related to a percentage of

a particular type of voters who are disenfranchised, that the registrars from districts where these voters are in the majority and those where these voters are in the minority would have such extreme preferences and care about state policy. In this situation, local administration of disenfranchisement might indeed lead to a wide disparity across the state in how the law is implemented and who is disenfranchised.

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