

Partisanship in Local Elections: Regression Discontinuity Estimates from Unconventional School Board Races

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This Version: 9/21/2010

Abstract

A substantial body of work shows that partisanship is the most important determinant of voter behavior in state and national elections, but little research has examined the relationship between partisanship and voting at the local level. We begin to fill this gap in the literature by looking at the role of partisanship in the 2009 Ohio and Pennsylvania school board elections. We first examine how the partisan identification of school board members matches their constituents. We find that, on average, school board members are less Democratic than their constituents. We then exploit a unique feature of Pennsylvania school board elections to estimate the effect of party endorsements on candidates' vote shares. Candidates are allowed to run simultaneously for both the Democratic and Republican nomination, with the possibility of appearing on the general election ballot as a dual nominee. Thus we have the opportunity to compare the performance of candidates who win two nominations to those who win only one. Our point estimates from a regression discontinuity design based on close elections indicate that a second nomination is associated with vote share gains of 14 to 19 percentage points.

On January 8, 2002, President George W. Bush signed into law the No Child Left Behind Act (NCLB). NCLB provided states and the federal government with new tools for addressing low student achievement and learning gaps among traditionally advantaged and disadvantaged children, including a new test-based accountability system with consequences for persistently poor school performance. NCLB's enactment followed a decade during which 36 states had implemented school accountability programs of their own and in which numerous states had replaced elected school boards with appointed boards in low-performing urban districts such as Boston, Chicago, and Cleveland. The perceived need for greater accountability in school governance common to each of these policy initiatives suggests that national and state policymakers believe that school boards, the primary institutions responsible for enacting

education policy in the United States, are failing on their own to provide the oversight necessary for schools to meet society's educational goals.

These latest policy efforts to compensate for the inadequacies of a school board-centered, local control education governance system follow other proposals to reform school boards, restructure their responsibilities, or abolish them altogether (see Hess and Leal 2005). Such reform matters because school boards play a central role in shaping American education, which means that their failings have potentially far-reaching consequences. Yet, oddly, social scientists have devoted relatively little effort to understanding school boards or their effects. As Howell (2005: 15) half-humorously observes, "it is hardly an exaggeration to note that more is known about the operation of medieval merchant guilds than about the institutions that govern contemporary school districts." The paucity of rigorous empirical research on school boards can in large part be attributed to a scarcity of systematic data collection, which has led most studies of school boards to be based on a small number of cases, non-representative samples, or information obtained from surveys (Wirt and Kirst 2001: 139).

This paper is part of a larger project that helps fill this void in the literature by using an original dataset collected by the authors to study local school board elections, school board representation, and the impacts of school boards on local policy. In this paper, we focus specifically on the role of partisanship in school board elections. School boards, like most other local offices, generally are elected in non-partisan elections.¹ This use of non-partisan local elections is a remnant of Progressive Era reforms, which were designed to separate local and national politics. Supporters argued that such reforms would improve the efficiency of local government by allowing voters to focus on performance of local political officials rather than political ideology. Others have suggested, however, that such reforms increase the power of special interest groups, thus reducing governmental accountability (Moe 2001).

¹ Hess (2002) reports that 89 percent of school board elections are non-partisan.

We study the effects of partisanship in school board elections from two different angles. First, we examine how the partisan identification of school board members matches the party identification of their constituents. We analyze this match both in Pennsylvania, which has partisan school board elections, and Ohio, which has non-partisan elections. Consistent with some previous case studies, we find evidence of partisan competition in both in the partisan Pennsylvania elections, but also in the non-partisan Ohio elections. We also find in both states that Republican identifiers are, on average, over-represented on the school board, relative to their numbers in the district.

Second, we explore the mechanisms causing party effects in local elections. We find that some of the Republican over-representation on school boards results from candidate entry. We then exploit the unconventional electoral institution used to elect school board members in Pennsylvania to estimate the effect of party endorsements on candidate vote shares. Pennsylvania school board candidates are permitted to seek endorsement in both the Republican and Democratic primary. Candidates who secure both nominations by placing highly in both primaries carry *both* partisan affiliations into the general election. Because races are also multi-member, we can compare candidates with different mixes of nominations on the same ballot to isolate the vote share value of holding the Democratic or Republican nomination conditional on also holding the other nomination. Using a regression discontinuity design, we find that holding a second party endorsement increases a candidate's vote share by about 15 percent points. This finding suggests that ballot cues are an important channel causing party effects in partisan local elections.

Previous Literature

Despite the ubiquity and reach of the institution, research on school boards generally has been underdeveloped. This relatively meager body of work is surprising given that school boards appear to be appropriate units for study in multiple fields and disciplines, particularly in

education and political science. A challenge to comprehensive empirical school board research is the difficulty of obtaining useful data. The absence of a centralized source—even within states—that collects systematic information about local school boards, their members or their operations, has contributed to overreliance on single case studies or small non-representative samples (Wirt and Kirst 2001). Where political scientists have successfully cleared this hurdle, it has been facilitated by individual data collection efforts. Much of this data collection and subsequent research focuses on the causes and consequences of racial and ethnic representation (Meier and England 1984; Meier and Stewart 1991; Leal, Martinez-Ebers and Meier 2004; Meier, McClain, Polinard, and Wrinkle 2004; Berkman and Plutzer 2005; Meier, Juenke, Wrinkle, and Polinard 2005; Rocha 2007; Fraga and Elis 2009; Marschall, Ruhil, and Shah 2010; Shah 2010). This line of research has been fruitful for showing the conditions and electoral systems that associate with minority representation and exploring the downstream relationship between minority representation and minority outcomes.

Perhaps this focus on the causes and consequences of racial representation has come at the expense of a broader body of work on school board elections. Most quantitative work on school boards outside the racial representation literature uses school boards as a vehicle to test political science theories of institutional decision-making. Only a few studies look more generally at such topics as voter, candidate, or interest group behavior in school board elections. Hess and Leal (2005) analyze data gathered in an anonymous survey of school board members nationally to examine the school-district level correlates of school board electoral competition. They identify a number of institutional factors as contributors, such as election type (i.e., at-large vs. single-member). Moe (2005) examines the correlates of union activity in California school board elections. Berkman and Plutzer (2005) examine how numerous characteristics of school boards and districts affect the responsiveness of school spending to public opinion. Berry and Howell (2007) analyze precinct- and district-level data from three years of school board elections in South Carolina to examine patterns of incumbents' reelection decisions,

challengers' entry decisions, and incumbent's electoral performance. They find inconsistent patterns in the associations between schools' performance on standardized tests and electoral outcomes.

Our paper builds on this literature by studying the role of partisanship in school board elections. The literature linking partisanship to electoral outcomes at the local level is small, particularly relative to the large literature at the national level.² One line of research relates precinct-level votes shares for local political candidates with precinct-level measures of partisanship. Early work by Williams and Adrian (1959) and Salisbury and Black (1963) finds strong correlations between precinct-level vote shares for the Republican governor and votes shares of slates of candidates in non-partisan city council in four Michigan cities and Des Moines, IA respectively. These results suggest that partisan-like voting occurs in non-partisan elections. Subsequent work attempts to compare outcomes in partisan and non-partisan elections. Arrington (1978) examines changes in the correlation of precinct-level vote shares in Charlotte, NC as the city shifted from using non-partisan elections to partisan election to non-partisan elections without ballot cues to partisan elections with ballot cues. Similarly, Schaffner, Streb, and Wright (2001, 2007) compare voting patterns in Asheville, NC over time as it switched from partisan to nonpartisan mayoral races, as well as in neighboring cities that differ with respect to the partisanship of local elections. These papers find evidence that strength of partisan voting in other offices is more predictive of vote share in partisan elections, concluding that voters indeed make substantial use of party cues in low-information elections when those cues are made available.

A closely related literature studies whether Democrats or Republicans perform relatively better when elections are non-partisan. The conventional wisdom is that nonpartisan elections favor Republicans because “wealth and access to wealth, which Republicans are more likely to

² See Wright (2008) for an overview.

have, are more important in nonpartisan contests” (Cassell 1986, 236). This conclusion is supported, in large part, by studies of California local politicians by Lee (1960), Hawley (1968), and Ji (2005), which find that Republicans perform better in California’s non-partisan local elections than would be expected based on registration totals or performance of Democrats in partisan state and federal elections. However, Welch and Bledsoe (1986) only find weak evidence that Republicans do better in partisan versus non-partisan local elections in a stratified random sample of city councils. Building off this finding, Schaffner, Streb, and Wright (2007) argue that rather than generally benefiting the Democrats or Republicans, non-partisan elections benefit the minority party in the district.

There are a number of mechanisms posited for why partisanship affects electoral outcomes. These mechanisms can be separated into three categories. The first is that partisanship affects the characteristics of candidates. This effect may occur because partisan and non-partisan primaries select different types of candidates, or because partisanship of the election affects the availability and distribution of resources (Adrian 1952). Additionally, partisanship may affect characteristics of the electorate. Previous work suggests both that turnout (Alford and Lee 1968) and the percentage of voters casting ballots conditional on turning out (Schaffner and Streb 2002; Squire and Smith 1988) is higher in partisan elections. Finally, partisanship may affect the basis on which voters make decisions. Previous studies show that in the absence of good information about candidates, voters use informational *cues*, such as party, to make decisions as if they were informed (Aldrich 1995; Lupia 1994). When party cues are unavailable, voters may turn to other cues like gender, race, and incumbency (e.g., McDermott 1997).

Our paper contributes to these literatures in a number of ways. Unlike previous literature, which tends to focus on a small number of cases, we study the universe of school board elections in an election cycle in two states. One advantage of this approach is that the large amount of resulting data provides us substantially more flexibility when estimating the

relationship between local election outcomes and district partisanship. This flexibility allows us to show a more nuanced relationship than previous work. Consistent with past work, we find evidence of Republican overrepresentation both on Ohio and Pennsylvania school boards. About 65 and 63 percent of school board members are Republican in a district that is evenly split between Democratic and Republican identifiers in Ohio and Pennsylvania, respectively. Consistent with partisan competition, this overrepresentation is greatest in Republican strongholds; in highly Democratic areas Democrats are overrepresented. These patterns appear somewhat more pronounced in Pennsylvania, which uses partisan school board elections, than in Ohio, which uses non-partisan school board elections.³ These findings suggest that previous conclusions about Republican advantage in non-partisan elections may have confounded non-partisanship with the types of offices that tend to be elected in non-partisan elections.

Our paper is also able to flesh out mechanisms that lead to the observed relationship between partisanship and local electoral outcomes. By collecting data on both winning and losing candidates, we are able to test whether candidate entry contributes to Republican overrepresentation. Particularly in Ohio, we find that losing candidates also tend to be disproportionately Republican, suggesting that candidate entry is an important contributor to Republican overrepresentation.

Finally, we are also able to exploit a quasi-experiment in Pennsylvania to isolate the role of party endorsements in affecting electoral outcomes. Two factors make it difficult to estimate the effect of party endorsements on voter behavior. The first is selection. Candidate quality affects both probability of being endorsed by a party and the probability of voters selecting a candidate. Because candidate quality is generally unobservable, any observational relationship between party endorsements and voter behavior is likely contaminated by omitted variable bias. The second is ballot access. In most circumstances, only party endorsees appear on the general

³ Some caution should be applied along with this statement. As of yet, the results are directly comparable between Ohio and Pennsylvania because they are not on a common scale.

election ballot. Moreover those cases where non-endorsed candidates do appear on the general election ballot are not representative. We exploit the fact that Pennsylvania uses multi-member districts where candidates can cross-file (i.e., run in both party's primaries) to overcome these difficulties and estimate the causal effect of being endorsed by both parties rather than just one. Intuitively, the close election regression discontinuity design we employ focuses on the comparison of candidates who *just win* a second party nomination to those who *just miss* securing that same nomination, conditional on securing the other one. Because these two candidates are presumed to be identical on other, potentially confounding characteristics (e.g., quality), differences in vote share in the general election can be directly attributable to gaining the second nomination. Our results suggest that ballot cues are an important channel of causing party effects in partisan local elections.

More generally, this paper contributes to our understanding of the role of political parties at the local level. Political scientists generally have paid little attention to sub-state politics in recent years (Trounstine 2009), an oversight that ignores the importance of local politics to democratic functioning and limits the discipline's capacity to assess the generalizability of its theories. For example, studies have demonstrated the role that parties play in providing accountability for elected officials in state and national offices (Przeworski, Stokes, and Manin 1999). However, it is unknown whether party accountability works similarly at the local level, where parties spend less and where voters may be less wed to party identification in voting.

Data

We utilize data on local elections in Ohio and Pennsylvania in 2009. For Pennsylvania we collected all primary and general school board election returns. Pennsylvania school board elections are held in conjunction with statewide judicial races and other municipal elections. Closed primary elections took place on May 19, 2009 and general elections took place on

November 3, 2009. Although turnout is not reported at the state-level, about 1.1 and 1.7 million ballot were cast in the top-ballot State Supreme Court race in the primary and general elections respectively.⁴ As a point of comparison, roughly 6.0 million ballots were cast in the 2008 presidential election. We obtain election result from each of the 66 Pennsylvania counties where school board members are elected; Philadelphia County is excluded because all school boards there are appointed. In sum, 3,013 candidates ran in either the general or primary election for 2,061 positions.

We also collected general election data from all local election races in Ohio. As in Pennsylvania, general elections took place on November 3, 2009.⁵ Also on the ballot in these elections were three ballot initiatives relating to compensation for Iraq and Afghanistan war veterans, the creation of a Livestock Care Standards Board, and casino gambling. About 3.3 million ballots were cast statewide, as compared to 5.8 million ballots in the 2008 presidential elections. In sum, 2,439 candidates ran in the general election competing for 1,654 school board positions.

While we have data on over 5,000 candidates, one issue with studying local elections is that little systematic information is available about those candidates. Important but typically unavailable information includes knowledge of candidates' partisan identification in races that are non-partisan or have open primaries. Previous work has used newspaper reports or surveys to assess partisanship in non-partisan elections. There are a number of limitations regarding these approaches. First, collecting data on a large number of races becomes difficult with these methods. Second, the types of races in which researchers can learn partisanship are likely not representative.⁶ Finally, such approaches are not as useful for obtaining party information for

⁴ This likely underestimates total turnout, because not all voters cast ballots in State Supreme Court election. For example, 126,254 and 196,463 State Supreme Court votes were cast in Allegheny County, while turnout was 183,918 in the primary and 216,569 in the general.

⁵ Ohio does not hold primary elections for school board.

⁶ The fact that a candidate's party identification shows-up in a newspaper, for example, suggests that partisanship may have been unusually salient in that race.

losing candidates, an important consideration when attempting to draw conclusions about the role of party identification in candidate choice.

We take a different approach to measuring candidate partisanship in this paper by using statewide voter databases to obtain information about nearly every candidate who ran for school board in the two states in 2009. Specifically, we match names in our election returns to records in the Pennsylvania Statewide Voter File (PSVF) from April, 2009 and the Ohio Statewide Vote File (OSVF) from September 2009. The PSVF contains the name, address, gender, birth date, party registration, and voting history for all registered voters in Pennsylvania. The OSVF contains slightly less information; for example, it does not include gender, and has birth year rather than birth date and past primary vote history rather than party registration. We are able to match records for 3,008 of the 3,013 and 2,407 of the 2,439 school board candidates in Ohio and Pennsylvania, respectively.

This approach has a number of advantages. While nearly every previous study on partisanship in local elections is based on fewer than ten elections, we are able to collect partisanship data for over 5,000 candidates. Rather than limiting analysis to one or two municipalities, this sample includes information from every race in two states. Moreover, because we have information on all candidates, we can consider both winners and losers in our analysis.

We also use the PSVF and OSVF to create measures of partisanship for each school board electoral region.⁷ In Pennsylvania, we aggregate the number of candidates registered with the both Democratic and Republican parties in each school board electoral region and calculate the two-party share of registered Democrats. In Ohio, we aggregate the number the number of

⁷ The electoral region is the entire school district for school boards using an at-large district. The electoral region is the specific sub-district for school districts using multiple districts. In cases where school board district boundaries were not contained in the PSVF or OSVF, we obtained data on boundaries from county elections officials.

candidates who last voted in a Democratic or Republican primary and calculate the two-party share of previous primary Democrats.⁸

Comparing School Board Members to Their Constituents

Research at the state- and national-level highlight the importance of party in vote choice; Ansolabehere et al. (2006) call the party the “single best predictor of voter behavior” (119). Party identification allows voters to make reasonable assumptions about the policy positions of candidates based on knowledge of stereotypical positions of the candidate’s party (see Conover and Feldman 1982; Rahn 1993). Beyond policy positions, party stereotypes provide voters with information about other constructs, such as candidate traits and past performance, which assist voters in forming opinions (Rahn 1993). Unsurprisingly, comparisons of party voting under partisan and nonpartisan election regimes find that voters vote substantially more partisan when party cues are available than when they are not (Ansolabehere et al. 2006; Schaffner, Streb, and Wright 2001),

There are a number of competing theories about the applicability of this state- and national-level research for local politics. One theory is that both partisan and non-partisan local elections will be relatively non-partisan. The basis for this theory is rooted in the old adage that often attributed to Fiorello LaGuardia that there is no Democrat or Republican way to pick up garbage. If partisan identification does a poor job of predicting one’s policy behavior on a school board once elected, voters may come to disregard party information when casting school board votes. This disconnection between party and positioning could occur if parties do a poor job of disciplining local elected officials or if ideology bears little relationship to the kinds of decision-making that happens at the local level. As Rahn (1993, 474) notes, “if partisan stereotypes [have] no basis in ‘the world outside,’ then there would be only error in using them to simplify the

⁸ We are currently in the process of also calculating the two-party Democratic vote share in the 2008 presidential election as an alternative school region partisanship measure. Having this alternative measure of partisanship will make it possible to compare results in Ohio and Pennsylvania.

political environment.” Indeed, recent analyses suggest that the party of local government officials bears little causal connection to such outputs as crime rates or the allocation of local expenditures (Ferreira and Gyourko 2009).

On the other hand, if the value of information cues as voting heuristics is increasing as concrete information about candidates becomes less available or more difficult to sort and process (Mondak 1993), we would expect that cues are especially useful to voters in local elections, which typically are characterized as “low information.” In this case, partisan cues, the most readily available information shortcut, would be even more determinative of voter behavior than in state and national elections. Indeed, when few other sources of information are available, party may be an important determinant of vote choice even if it is relatively uninformative about policy.

These two possibilities set up competing hypotheses. The first hypothesis is that party identification is relatively inconsequential, with voters relying on other information, perhaps including other cues such as incumbency or demographics, to make vote choices. This hypothesis predicts that party labels will hold little value beyond the mechanical function of enabling candidates to appear on the general election ballot. The alternative hypothesis is that partisan cues will be a significant driver of voting in local elections. Arriving in the voting booth with little prior information about the candidate, voters will tend to vote on a party basis, making party endorsements very valuable to candidates seeking election.

What implications do these two competing hypotheses imply about the relationship between the partisanship of school districts and the partisanship of its school board members? That is, what does it imply about the mapping between the Democratic fraction of the population, D , and the fraction of officeholders who are Democrats, $f(D)$? If parties are inconsequential, one possibility is that the party of elected candidates will reflect the partisanship of the candidates that run for office. If candidates are randomly drawn from the electorate, this will result in $f(D) = D$. That is, districts where 25% of the population are

Democrats will elect approximately 25% Democratic school board members, and districts in which 75% of the population are Democrats will elect approximately 75% Democratic school board members.

However, even if parties are inconsequential, it is still possible that one party will be systematically over-represented relative to their population on school boards. One reason this may occur is entry. Building off citizen-candidate models of politics, candidates often need to bear significant personal costs in order run for and hold local office (Osborne and Slivinski 1996; Besley and Coate 1997). While holding office requires a substantial time commitment, Pennsylvania school board members receive no monetary compensation and Ohio school board members receive little monetary compensation for the job. Older and wealthier individuals, who are disproportionately Republican, may be better able to spend time on elected duties without financial compensation, which would result in $f(D) = p(D) < D$, where $p(D)$ is the percentage of candidates that are Democrats.⁹

There are also reasons to think that one party's candidates will perform disproportionately better in school board elections. Previous work argues that non-partisan elections favor Republican candidates, because Republican voter interests are more cohesive and Republican candidates are less dependent on party resources (Lee 1960, Hawley 1968; Ji 2005). Moreover, previous work also shows that older voters make-up a higher proportion of the electorate in off-cycle elections (like those used Ohio and Pennsylvania) to elect school board members relative to on-cycle elections (Meredith 2008). Thus, we may expect in non-partisan school board elections that $f(D) < p(D)$.

There are also reasons to suspect that Democratic identifiers could be advantaged in school board politics. Research shows that teachers' unions—whose members, endorsements, and contributions skew heavily Democratic—are very successful in turning out their members to

⁹ Fiorina (1992) makes a similar argument to explain why professionalization caused state legislatures to become more Democratic.

vote (Moe 2005). This success is due in part to the high stakes that are associated with the opportunity to elect the school board members with whom unions engage in the collective bargaining process (Moe 2006); indeed, Strunk and Grissom (2010) find that districts whose unions are more active in school board elections bargain teacher contracts that are more favorable to teacher interests. These factors may mitigate, or even dominate any Republican advantage, such that $f(D) > p(D)$.

In contrast, we expect a nonlinear relationship between D and $f(D)$ if partisanship is an important determinant of voting in local elections. If voters generally support school board candidates from their own party, then when Democrats make up a minority of the electorate it will be difficult for a Democratic school board candidate to win office. Hence, if there is partisan competition we expect that for low values of D that $f(D) < D$, and using similar logic, that $f(D) > D$ for high values of D .

Whether we expect $f(D)$ to differ in non-partisan and partisan election depends on the source of party voting. If non-partisan elections are de facto partisan, then we would expect $f(D)$ to be relatively similar to partisan and non-partisan elections (Williams and Adrian 1959; Salisbury and Black 1963). In contrast, if party effects occur in local elections because uninformed voters use party labels on the ballot as a cue, then we expect that minority parties to be better represented in non-partisan rather than partisan elections because uninformed voters won't be able to use partisan identification as easily (Schaffner, Streb, and Wright 2007).

Results

Our results suggest that school board members are more likely to be Republican than the constituencies that they represent in both Ohio and Pennsylvania. Figure 1a shows the mapping in Pennsylvania between the party of registration in a school district and the party of registration of school board members. It indicates that about 63 percent of school board members are Republican in a district that is evenly split between Democratic and Republican

registrants. Figure 1a shows that in school board districts that contain fewer than 55% Democrats, school board members are significantly less Democratic than their constituents. Conversely, in districts that are more than 65% Democrats, school board members are significantly more Democratic than their constituents. Overall, school board members are 9.2 percentage points less likely to be a registered Democrat than their constituents.

Democrats are similarly underrepresented on Ohio school boards. Because Ohio does not have party registration, we cannot perform the exact same exercise we did for Pennsylvania. Rather, we measure party identification as the party of affiliation in the most recent primary election that a voter participated in. Figure 1b shows the mapping in Ohio between party affiliation in a school district and the party affiliation of school board members. Almost across the entire distribution of school districts, school board members are less likely than their constituents to have last voted in a Democratic primary. Overall, school board members are 13.0 percentage points less likely than their constituents to have last voted in a Democratic primary.

The findings in both Figures 1a and 1b are also consistent with partisan competition. In both cases, the percentage of Democrats is well below the 45-degree line in predominantly Republican districts and above the 45-degree line in predominantly Democratic districts. While this picture may make Pennsylvania outcomes appear to be more partisan, caution needs to be taken when making comparison across the two states because the x-axes are different. We are currently working on constructing measures of 2008 presidential vote returns by school district to make it possible to make comparisons between the outcomes in the two states.

We find that both voter behavior and candidate entry appear to contribute to the overrepresentation of Republicans on school boards. We show this by comparing the partisanship of winning and losing candidates in Figures 2a and 2b. Both in Ohio and Pennsylvania we find that winning candidates are more Republican than losing candidates in Republican strongholds and more Democratic than losing candidates in Democratic

strongholds. Such a pattern is consistent with voters selecting candidates from their preferred political party. However, in both Pennsylvania and Ohio, we also see that in moderate districts both winning and losing candidates are more likely to be Republican than their district. This suggests that candidate entry also likely contributes to the underrepresentation of Democrats.

Another interesting pattern observed in Figures 2a and 2b is that losing candidates are more Democratic than winning candidates in districts where Democratic identifiers make up a majority. For example, in Pennsylvania we see that in districts where between 50 to 65 percent of the electorate is a registered Democrat, losing candidates are more Democratic than winning candidates. Why are Republicans successful despite a Democratic majority in the region? Our working hypothesis that we plan to explore in the next iteration of this paper is that this result flows from differential turnout. Specifically, we are investigating the extent to which this phenomenon is explained by older individuals (generally more Republican) voting at much higher rates than younger individuals (generally more Democratic).

Estimating the Effect of Party Endorsements

Having observed partisan competition in school board elections in the previous section, we explore in this section the extent to which this results from party endorsements. Two factors make it difficult to estimate the effect of party endorsements on voter behavior. The first is selection. Candidate quality affects both probability of being endorsed by a party and the probability of voters selecting a candidate. Because candidate quality is generally unobservable, any observational relationship between party endorsements and voter behavior is likely contaminated by omitted variable bias. The second is ballot access. In most circumstances, only party endorsees appear on the general election ballot. Moreover, those cases where non-endorsed candidates do appear on the general election ballot (e.g., Joseph Lieberman in the 2006 Connecticut Senate race) are not representative. Thus it is difficult to estimate the

counterfactual vote shares that non-endorsed candidates would receive if they were to appear on the ballot without a party endorsement.

We exploit a unique system that Pennsylvania uses to elect school board members to estimate the effect of party endorsements in a local election context. Pennsylvania's 501 school districts elect board members using a combination of single-member and multi-member districts, where $K_{d,r}$ represents the number of school board members elected in school district d from region r in a given election. Candidates can register for both the Democratic and Republican primary elections regardless of their partisan identification, a practice sometimes referred to as cross-filing.¹⁰ To register for a primary, candidates must collect ten signatures from registered voters in that party; 87.2 percent of primary candidates cross-list with both parties. The candidates that receive at least the $K_{d,r}^{th}$ highest number of votes in a primary qualify for the general election ballot with the label of that party, with winners of both the Democratic and Republican primaries being cross-listed with the labels of both parties. Candidates winning at least one primary, plus any independent and third party candidates, qualify for the general election ballot. Candidates receiving at least the $K_{d,r}^{th}$ highest number of general election votes win a seat on the school board.

This electoral system allows us to overcome identification issues associated with both selection and ballot access. By collecting primary election totals, we fully observe the selection process used by parties to endorse candidates in the primary election. We then implement a close election regression discontinuity design to control for the fact that higher quality candidates are more likely to win primary elections (Lee 2001; Lee 2008). The intuition behind the close election regression discontinuity design is that we can treat close elections as a quasi-experiment, because, on average, the characteristics of candidates that just win elections should

¹⁰ See Scarrow (1986) and Masket (2007) for discussions of cross-filing more generally

be similar to those candidates that just lose elections.¹¹ In our case, this design ensures that the candidate quality and policy preferences of those candidates that just win a party's nomination should be similar to those that just lose a parties' nomination. Thus, holding all else equal, we can estimate the effect of party endorsements by comparing the general election performance of candidates that just win a parties' primary to the performance of candidates that just lose a party's primary.

However, implementing a regression discontinuity design in this context is usually infeasible because we cannot hold all else equal. The impediment is that barely winning a party's endorsement affects ballot access. Fortunately, the use of multi-member districts and cross-listing in Pennsylvania school board elections provides us a way around this problem. In numerous cases, two candidates will both win one party's nomination but differ in whether they win the other party's primary. In such cases, the candidates winning and losing the second party's primary will *both* be on the general election ballot because they won the first party's primary. We can thus implement a regression discontinuity design with respect to party nomination that doesn't differ on ballot access. Specifically, we can compare candidates who both won one party's nomination but differ in whether they won or lost the other party's nomination by only a small number of votes.

The example in Table 1 illustrates this empirical strategy. Table 1 presents vote totals from the 2009 primary and general election to select four members of the Old Forge school district in Lackawanna County, Pennsylvania. Four incumbents and three challengers registered for both the Democratic and Republican primary. Incumbents Frank Scavo and Eugene Talerico finished in the top four of the Republican primary, assuring them spots on the general election ballot. Because Talerico received six more votes than Scavo in the Democratic primary, Talerico also received the Democratic nomination in the general election. While Scavo

¹¹ Similar designs have been used in the local politics literature to assess the effect of mayoral partisan orientation on fiscal outcomes (Ferreira and Gyourko 2009; Gerber and Hopkins 2009) and incumbency on the probability of city council members being reelected (Trounstine 2009).

received more total primary votes, only Talerico won reelection to the Old Forge school board. This case suggests that winning party endorsements may confer additional electoral benefits above and beyond putting someone on the ballot. Our empirical strategy is to find all observations where the party endorsements of two candidates on the general election ballot differs due to a small number of primary election votes and test whether there are any systematic differences in their general election performance.

Implementation of Empirical Strategy

We formulize our empirical strategy in the Rubin potential outcome framework. Define $d = \{0, 1\}$ as an indicator equal to one if a candidate is nominated by the Democratic party and $r = \{0, 1\}$ as an indicator equal to one if a candidate is nominated by the Republican party. Let $Y_{i,j}(d, r)$ be the vote share received by candidate i in race j which depends on whether she receives the Democratic and Republican nomination. We would like to observe $Y_{i,j}(1, 1) - Y_{i,j}(1, 0)$ (i.e., the difference in vote shares a candidate receives if they receive both the Democratic and Republican nomination rather than just the Republican nomination) and $Y_{i,j}(1, 1) - Y_{i,j}(0, 1)$ (i.e., the difference in vote shares a candidate receives if they receive both the Democratic and Republican nomination rather than just the Democratic nomination). Unfortunately, the fundamental problem of causal inference is that we at most observe one of the outcomes $Y_{i,j}(1, 1)$, $Y_{i,j}(1, 0)$, and $Y_{i,j}(0, 1)$, so this quantity can never be identified.

To overcome this identification problem, we use a close election regression discontinuity design. Let ds_j and rs_j be the vote share necessary to receive the nomination in the Democratic and Republican primaries, respectively, in race j , which we refer to as the *nomination threshold*.¹² The idea behind this empirical strategy is that we can estimate $Y_{i,j}(1, 1) - Y_{i,j}(1, 0)$ by comparing the vote shares of Democratic nominees who just won the Republican nomination

¹² We construct ds_j and rs_j by taking the average of the lowest vote share of a candidate winning the party's nomination and the highest vote share of a candidate losing the party's nomination.

to Democratic nominees who just lost the Republican nomination.¹³ In practice this means we compute equation (1), where b is a bandwidth parameter that is greater 0 and N_b is the number of observations where both candidates won the Democratic primary and the margin of victory in the Republican primary is less than b . If $N_b \rightarrow \infty$ as $b \rightarrow 0$, this quantity converges to $E[Y_{i,j}(1, 1) - Y_{i,j}(1, 0)|rs_j = rs_{i,j}]$ under regularity conditions established by Lee (2008).

$$\frac{1}{N_b} \left(\sum_{ds_j < ds_{i,j}; rs_j < rs_{i,j} < rs_j + b} Y_i(1, 1) - \sum_{ds_j < ds_{i,j}; rs_j - b < rs_{i,j} < rs_j} Y_i(0, 1) \right) \quad (1)$$

Unfortunately, in practice we don't have enough data such that $N_b \rightarrow \infty$ as $b \rightarrow 0$. As a result, we need to increase our bandwidth such that we incorporate observations with values $rs_{i,j}$ that are not almost identical to the nomination threshold. This necessity raises concerns that those individuals who receive a Republican endorsement may be different, both observably and unobservably, from those who only receive a Democratic endorsement. For example, receiving more support in the Republican primary may indicate that the candidate is generally of higher quality, and thus would receive greater support in the general election absent any differences in party endorsements. To control for the direct effect of vote share in the Republican primary on general election outcomes, we follow Lee (2008) and estimate separate polynomials of degree k on either side of the nomination threshold using equation (2).¹⁴ In this specification, θ_o captures the difference in general election vote shares from being above the Republican nomination threshold, which is our estimate of $E[Y_{i,j}(1, 1) - Y_{i,j}(1, 0)|rs_j = rs_{i,j}]$. Note that this implies that θ_o is the local-average treatment effect of a second party endorsement for individuals on the cusp of also being nominated.

¹³ We can apply nearly identical logic to solve for $Y_{i,j}(1, 1) - Y_{i,j}(0, 1)$ by exchanging the use of ds_j and rs_j in this section.

¹⁴ We report results using a polynomial of degree 3 (i.e., a cubic polynomial). The results are robust to alternative specifications.

$$Y_{i,j} = \sum_{k=0}^k \beta_k (rs_{i,j} - rs_j)^k + \sum_{k=0}^k \theta_k 1(rs_{i,j} - rs_j > 0) (rs_{i,j} - rs_j)^k + \varepsilon_{i,j} \quad (2)$$

A nearly identical specification that replaces $rs_{i,j}$ with $ds_{i,j}$ is used to estimate the effect of a Democratic endorsement on vote shares. We also pool the cases where candidates narrowly differ with respect to Republican endorsements with the cases where candidates narrowly differ with respect to Democratic endorsement in some specifications. In such cases, we define a variable $s_{i,j}$ which is the vote share of a candidate in the primary in which they differ in terms of endorsements. In all cases we cluster the error term by school district to account for the interdependence of candidate vote share in a given race.

Results

We first compare the general election vote shares of candidates endorsed by both parties to the general election vote shares of candidates endorsed by a single party. We restrict our analysis to those candidates who were the last winner (i.e., had the lowest value of $rs_{i,j} > rs_j$) or the first loser (i.e., had the highest value of $rs_{i,j} < rs_j$), conditional on winning the other party's nomination (i.e., $rd_{i,j} > rd_j$). Table 2 indicates that in the 219 cases like this in our dataset, candidates with two endorsements had an average general election vote share of 84.4%, as compared to 61.2% for candidates with a single endorsement.¹⁵

One concern is that the difference in vote share between candidates with one and two endorsements may reflect more than just differences caused by party endorsements. For example, candidates with two endorsements may be, on average, higher quality than candidates with one endorsement. They also may have partisan preferences that better match their district. Table 2 shows that candidates endorsed by both parties earn a higher vote share (72.2%) in the

¹⁵ 14 additional observations fit these criteria, but one of the candidates does not run in the general election. In a disproportionate number of cases, the candidate who did not run in the general election only won the nomination of the weaker party in their electoral region. Any resulting bias of strategic behavior like this on our estimates should cause us to underestimate the effect of party nomination, because those candidates dropping out are those most likely to be hurt by party endorsements.

primary that both candidates won than candidates who receive a single endorsement (68.6%), suggesting that they are indeed are of higher average quality. Their partisan identification is also slightly more likely to match the partisan identification of their district (54.6% versus 53.9% of registrants register with their party).¹⁶

We find that substantial differences in the general election performance of candidates persist when we restrict cases to a narrow bandwidth around the nomination threshold. When we restrict the bandwidth to cases where candidates are within 5% and 1% of the nomination threshold, we continue to find that candidates receiving both nominations receive a 19.0 and 16.9 percentage point greater vote share than candidates receiving a single nomination. Moreover, restricting the bandwidth appears to attenuate observable differences in the candidate quality of those who receive one and two endorsements; candidates winning both endorsements actually perform slightly worse than candidates winning one endorsement in the primary that both win when using a bandwidth of 1%.

Figure 1 plots the data used to construct Table 2. The x-axis captures the difference between the candidate primary vote share and the nomination threshold in the primary where the candidates differed with respect to winning the nomination. Figure 1 visually represents the effect of winning an additional endorsement illustrated in Table 2. The black lines capture third-degree polynomials fit on either side of the nomination threshold. The difference between the black lines at the nomination threshold represents the estimate of θ_0 in Equation (2).

We continue to find robust evidence of sizable party endorsements effects when using regression analysis. Column 1 of Table 3 corresponds to the estimates visually represented in Figure 1, which show that receiving a second endorsement increases a candidates' vote share by 16.0 percentage points (s.e. 2.6 percentage points) in the general election. Columns 2 and 3 separate our observations into two cases, and find similar effect sizes when candidate differ with

¹⁶ When making this calculation, we impute that 50% of registrants register with the same party of independent and third-party candidates.

respect to a Democratic endorsement (14.2 percentage points, s.e. 3.2 percentage points) and a Republican endorsement (19.2 percentage points, s.e. 3.9 percentage points).

Two potential explanations exist for the patterns observed in the first three columns. One explanation is that candidates perform better when receiving a party endorsement because members of that party become more likely to vote for that candidate. The second explanation is that winning an additional party endorsement signals something about the candidate's general quality to all voters. To differentiate between these explanations, we interact an indicator for receiving a party's endorsement with the percentage of registered voters in the electoral region from that party. Consistent with party endorsements making members of that party more likely to vote for a candidate, the results in column 4 indicate that the increase in vote share from an endorsement occurs from candidates doing better in electoral regions with a high percentage of voters from the endorsing party.

We run a number of robustness tests to check the validity of our estimates. In columns 5 and 6 we run placebo tests to investigate whether just winning a party endorsement is significantly related to other potential determinants of general election performance. We find that just winning a party endorsement is not significantly related to a candidate's vote share in the primary that both candidates won or the percent of registered voters that match that candidate's party identification. These null effects strengthen our case that the effect identified in column 1 represents the causal effect of a party endorsement and not some omitted factor that is correlated with both a party endorsement and general election performance. As a final robustness check, we reestimate equation (2) restricting the bandwidth of included observations to those within b units of the nomination threshold. Figure 2 illustrates relatively stable estimates across bandwidth, with the estimates being statistically significant at the 95% level, two tailed, using all bandwidths $b > .02$.

Discussion and Conclusions

Voters may make substantial use of partisan information in making vote choices in the low-information environments of local elections, making party endorsements quite valuable, or they may discount this information in favor of other cues, minimizing the value of party nominations beyond the opportunity to simply appear on the general election ballot. Our results point to the former: conditional on securing the opportunity to appear on the general election ballot by winning one party's nomination, school board members in Pennsylvania who just win the other nomination gain a vote share advantage of between 14 and 19 percentage points. Moreover, we find evidence that this advantage comes from greater support among voters from the endorsing party. This result suggests that voters indeed are relying heavily on party cues when making vote choices, confirming results using correlational methods (e.g., Schaffner, Streb and Wright 2001).

This work is incomplete. One obvious omitted consideration is the role of incumbency. Incumbency status is missing from the initial files we used to construct this data set, but we are working to secure incumbency information to incorporate this variable into future versions of this analysis. Once we have this information, we plan to investigate the degree to which partisanship interacts with accountability by extending the Berry and Howell (2007) framework to consider partisan and nonpartisan differences in retrospective voting. Berry and Howell demonstrate that voters in school board elections can reward or punish incumbents for school district test score performance, which begs the question of whether partisan elections bolster or hamper this accountability mechanism. A comparison of voting patterns in Pennsylvania and Ohio can help shed light on this process and the party/voting link it exemplifies.

Also currently missing is the ability to directly compare the relative partisanship of school board elections in Ohio and Pennsylvania. The primary problem is that data limitations require us to measure partisanship differently in the two states. We are currently working to construct 2008 presidential vote share for each state by school board electoral region. Doing so

will allow us to put the two states on a common scale in order to investigate the extent to which partisan elections produce more partisan competition than non-partisan elections.

At future stages of the overarching study of which this paper is a part, we will also incorporate additional data from city council and township elections in Ohio. Ohio city council elections are partisan in some cities and nonpartisan in others, an additional source of partisan/nonpartisan comparisons. These data will permit us to delve further into the macro-dynamics of partisan and non-partisan elections within the same institution and the same state. They will also allow us to make comparisons between city councils, school boards, and township trustees to examine how the party identification of representatives varies across institutional structures.

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Figure 1a: Local Linear Regression of Party of Registration of Winning Pennsylvania School Board Candidates on District Partisanship

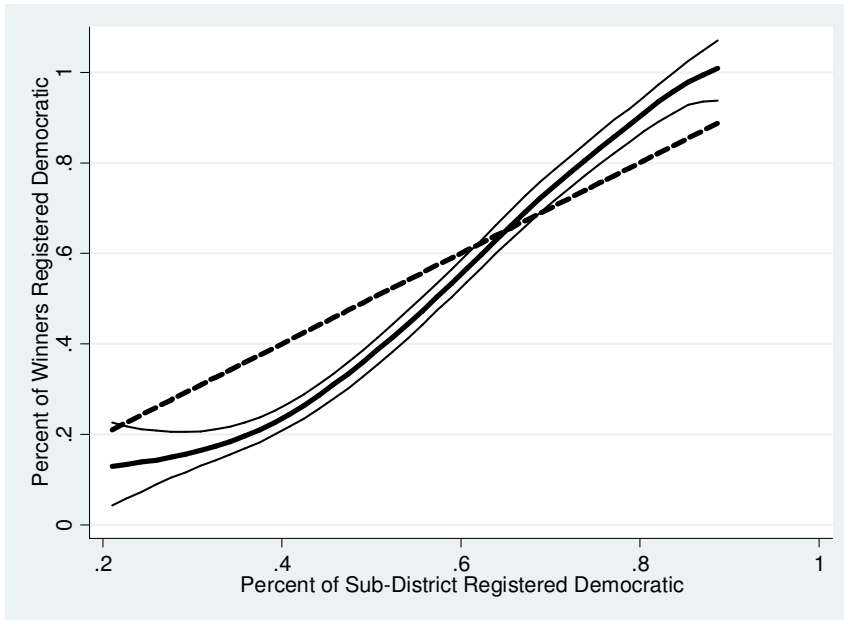
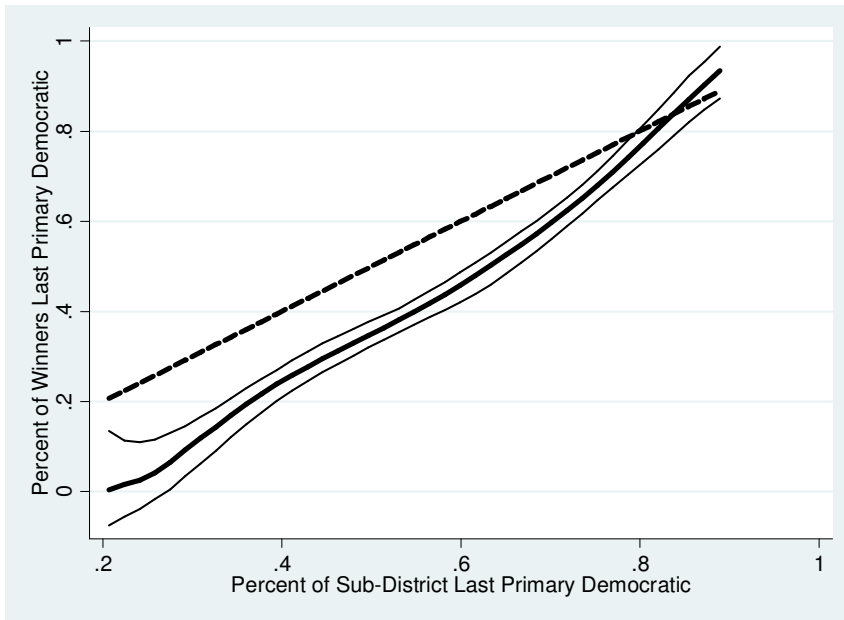


Figure 1b: Local Linear Regression of Party of Last Primary of Winning Ohio School Board Candidates on District Partisanship



Note: Thin lines represent 95% CI constructed by 1000 bootstraps clustered by school district

Figure 2a: Local Linear Regression of Party Identification of Winning and Losing Pennsylvania School Board Candidates on District Partisanship

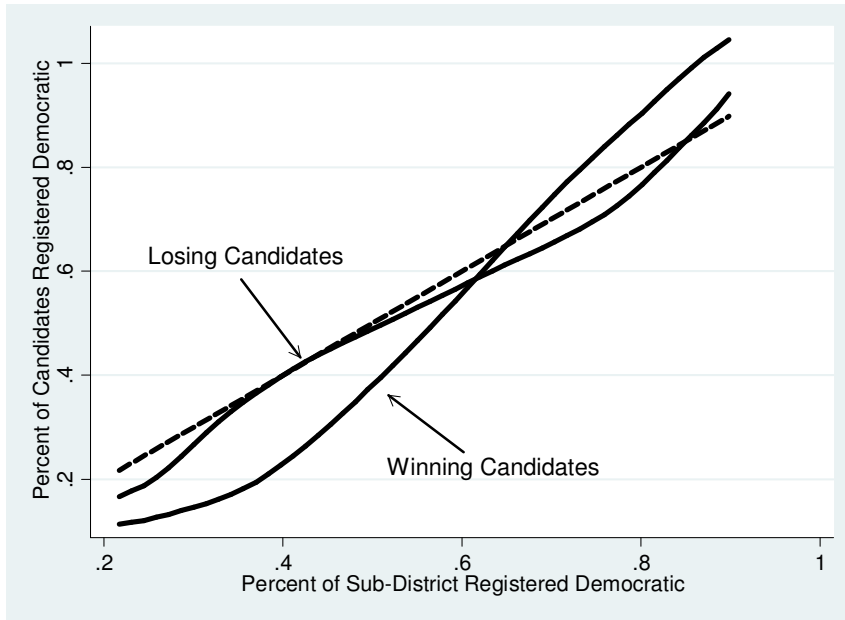
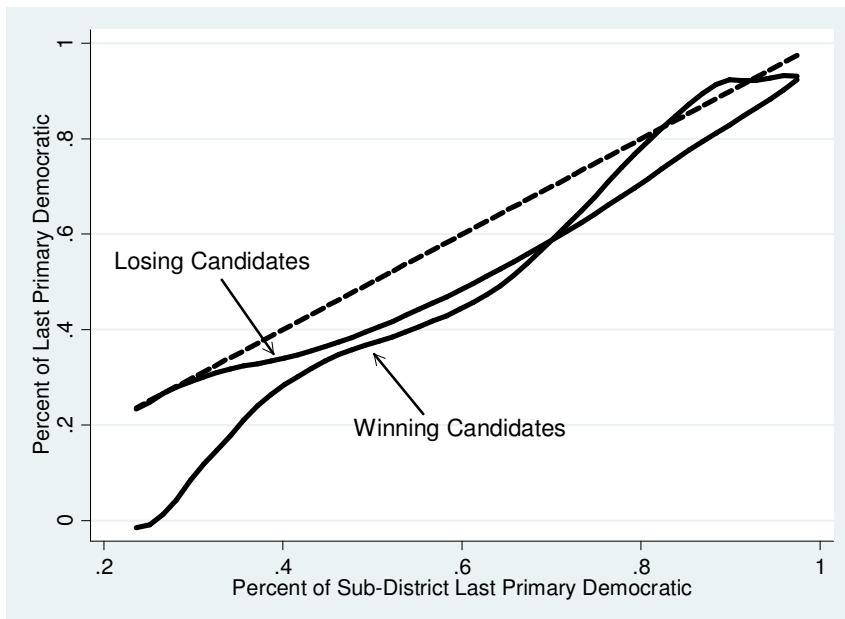


Figure 2b: Local Linear Regression of Party of Last Primary of Winning and Losing Ohio School Board Candidates on District Partisanship



Note: Sample restricted to contested races

Figure 3: Vote Share in General Election as a Function of Primary Election Performance

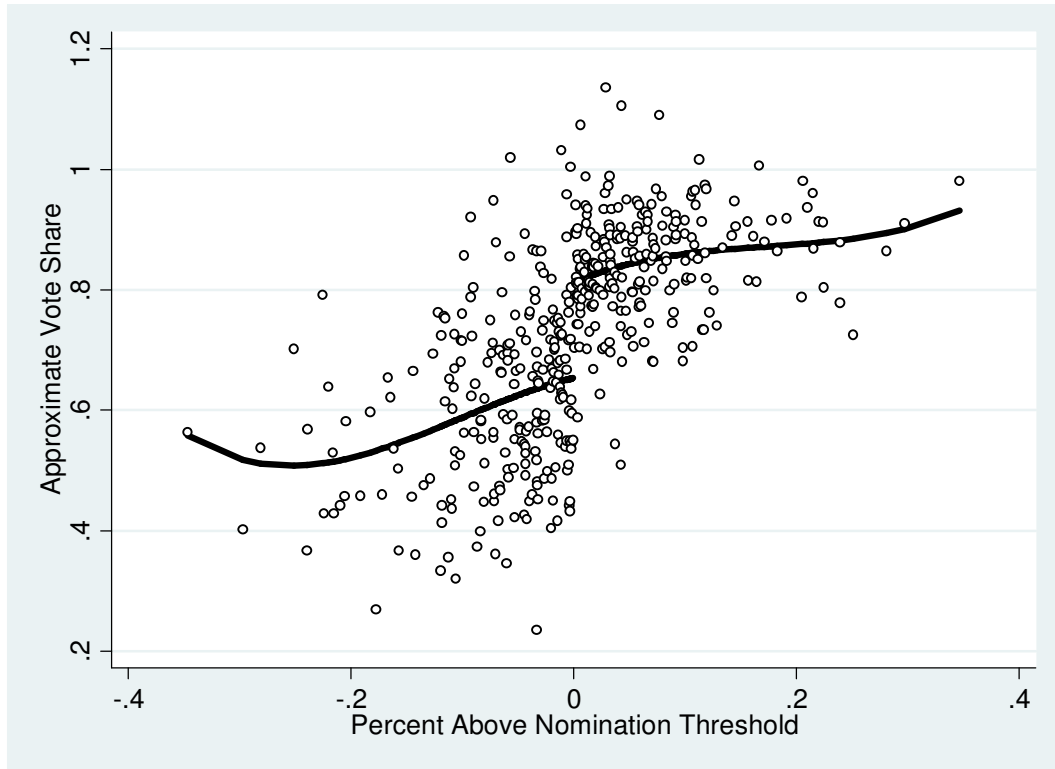
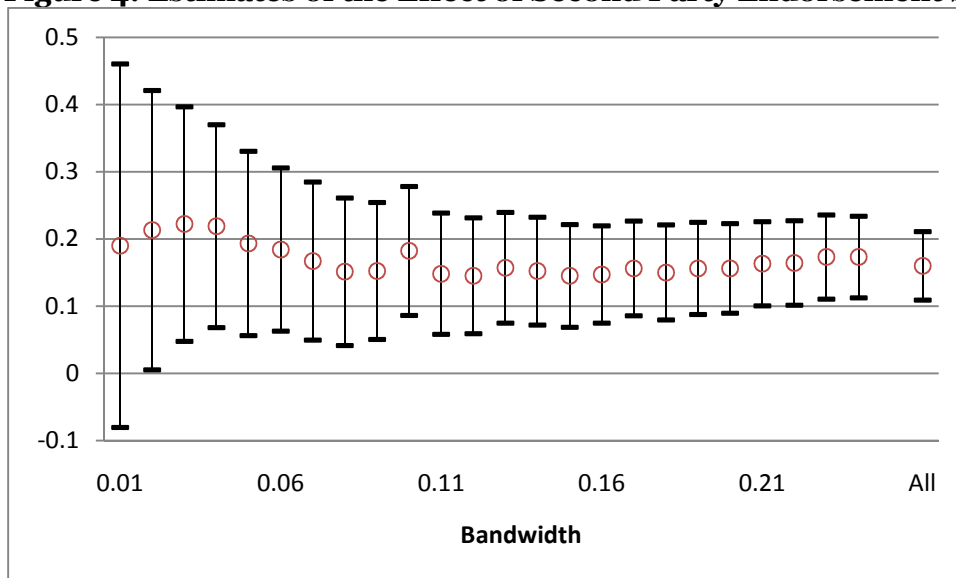


Figure 4: Estimates of the Effect of Second Party Endorsement by Bandwidth



Circle Represents Point Estimates; Bars represent 95% Confidence Intervals

Table 1: Vote Totals from 2009 Old Forge School District Primary and General Election (elect 4)

Republican Primary:		Democratic Primary:		General Election:	
CHRIS JONES (I)	426	CHRIS JONES (I)	824	CHRIS JONES (D/R)	1,873
FRANK SCAVO (I)	352	MARYGRACE MAILEN	716	MARYGRACE MAILEN (D/R)	1,784
MARYGRACE MAILEN	337	KATHERINE STOCKI	613	EUGENE TALERICO (D/R)	1,672
EUGENE TALERICO (I)	333	EUGENE TALERICO (I)	606	KATHERINE STOCKI (D)	1,613
KATHERINE STOCKI	328	FRANK SCAVO (I)	600	FRANK SCAVO (R)	1,518
KIM BUCARI (I)	313	KIM BUCARI (I)	572		
ROBERT PAGNOTTI	179	ROBERT PAGNOTTI	313		

Note: (D) indicates Democratic nominee, (R) indicates Republican nominee, and (I) indicates incumbent.

Table 2: Comparing Candidates Endorsed by Both Parties with Candidates Endorsed by One Party

Bandwidth (b) N	All 219		Within 5% 109		Within 1% 27	
	# of Endorsements		# of Endorsements		# of Endorsements	
	Both	One	Both	One	Both	One
% General	84.4%	61.2%	82.7%	63.7%	81.5%	64.6%
% Other Primary	72.2%	68.6%	68.2%	66.4%	63.6%	64.4%
% Match Party ID	54.6%	53.9%	54.4%	53.5%	57.4%	55.0%

Note: Compares candidates with lowest winning vote total in primary to candidates with highest losing vote total in primary conditional on both candidates winning the other primary

Table 3: Estimates of the Effect of Second Party Endorsement

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Variable	General	General	General	General	Other Primary	Match Party ID
Sample	All	Dem.	Rep.	All	All	All
Above	0.160 (0.026)	0.142 (0.032)	0.192 (0.039)	0.015 (0.090)	-0.018 (0.019)	0.008 (0.024)
Above X % Match Party ID				0.254 (0.160)		
Observations	438	208	230	432	438	432