

Legislative Effects of Electoral Mandates

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Abstract

We use the Hungarian National Assembly, where the mandate type (single member district vs. party list or proportional representation) changes for a number of legislators each term, to explore whether and how changes in mandate type lead to changes in legislators' voting behavior. We perform (1) a linear regression, and (2) matching to ensure balance on relevant covariates and fully get at the question of causality. We find that when the electoral system under which a legislator was elected changes from PR to SMD, then the legislator becomes significantly more constituency oriented in his or her voting behavior, indicated by increased levels of defections from the party line of voting. Contrary to expectations borne out by the competing principals theory, we also find that when the electoral system changes from SMD to PR there is no significant change in the voting behavior of legislators.

This study explores the consequences of electoral system change on the behavior of legislators – a topic of considerable practical and theoretical interest. The electoral system is an institution that an increasing number of countries are choosing to change, often with the goal of improving accountability. Recent examples include the electoral reform in Colombia, Croatia, Italy, Israel, Japan, Macedonia, Moldova, New Zealand, Romania, South Africa, Taiwan, and Ukraine, to name a few. Electoral reform is also frequently discussed in Canada and the UK. Policy-makers contemplating reform are interested in understanding its effects. However, scholarly literature on electoral system reform has mostly focused on describing and explaining reforms undertaken in specific countries with respect to their effects on party systems.¹ More systematic analysis is rare and the effect of reform on the “intra-party dimension of politics” remains largely unexplored (Scheiner, 2008; Shugart, 2005). We lack systematic studies on whether and how electoral system change affects the behavior of elected representatives, despite the fact that it is these representatives who largely determine whose interests get represented and how accountability works.

We focus on the decision of members of parliament (MPs) to follow or break party unity in the legislature. This specific type of legislative behavior is relevant because it affects the strength and stability of parties, and the nature of government and policy-making. We build on the growing literature about the relationship between electoral systems and legislative behavior. The central argument in these studies is that electoral rules incentivize politicians to be more personalistic or party-centered in parliament depending on the extent to which

¹See, for example, chapters in Gallagher and Mitchell (2005) and Shugart and Wattenberg (2001); see also Bartolini and D’Alimonte (1996) and Morlino (1996) for Italy, McKean and Scheiner (2000) for Japan, Hazan and Rahat (2000) for Israel. A notable exception is Crisp and Ingall (2002) that studies the consequences of the electoral reform in Colombia on the representational style of legislators. However, this study also focuses on only one specific instance of reform in a single country.

they allow for a personal vote.² While extensive, this body of research has also not considered the consequences of electoral system change on MP behavior. The novel substantive contribution of our study is its explicit focus on such change: we explore the possibility of the past electoral system conditioning the effect of the current one.

Specifically, we use a controlled comparison offered by the elections to the Hungarian National Assembly to study the effect of electoral system change on the extent to which MPs become more or less party-oriented in their voting. We make use of the fact that in the Hungarian mixed member electoral system (MMS) some legislators can switch district types from one term to the next, i.e., the same legislator can be elected from a single member district (SMD) for one term, but from a party list for another. This allows holding constant a host of variables, including personal particularities (e.g., a personal inclination against authority), and study whether legislators' behavior changes when electoral rules change from SMD to proportional representation (PR) and vice versa. By observing the change in the voting behavior of those legislators whose mandate type changes and those whose does not, we can directly address the question about the consequences of electoral reform on legislative behavior.

Our explicit focus on the consequences of electoral system change and our experimental design provide another improvement over the existing studies: they allow us to more rigorously identify the causal effect of electoral rules on the voting behavior of legislators.

²See, for example, Ames (2001), Cain, Ferejohn and Fiorina (1987); Carey (2007, 2009); Ferrara (2004); Haspel, Remington and Smith (1998); Herron (2002); Jun and Hix (2010); Kunicova and Remington (2008); Lancaster and Patterson (1990); Mitchell (2000); Morgenstern (2004); Owens (2003); Samuels (1999); Sieberer (2006, 2010); Stratmann and Baur (2002); Thames (2001, 2005); see also Bowler and Farrell (1993); Carey and Shugart (1995); Crisp et al. (2004); Heitshusen, Young and Wood (2005); Hix (2004); Shugart, Valdini and Suominen (2005); Zittel and Geschwend (2008), who consider legislators' other behaviors instead of, or in addition to, the voting behavior.

The existing studies use two different strategies to test the relationship between electoral systems and legislative behavior. Some use cross-national comparison of countries with different electoral rules (for example, Carey, 2007, 2009; Crisp et al., 2004; Morgenstern, 2004; Morgenstern and Swindle, 2005; Shomer, 2010) – a strategy that does not allow fully understanding the causal effects of rules because differences in institutions may be confused with differences in cultural characteristics, historical legacies or other possible confounding factors that are difficult to measure. An alternative is to focus on countries with MMS and consider how the average behavior of MPs elected in the SMD tier differs from the average behavior of MPs elected in the PR tier³ (Ferrara, 2004; Haspel, Remington and Smith, 1998; Herron, 2002; Jun and Hix, 2010; Kunicova and Remington, 2008; Lancaster and Patterson, 1990; Sieberer, 2010; Stratmann and Baur, 2002; Thames, 2001, 2005). Studying MMSs seems a better strategy than cross-national observational studies because it allows holding constant cultural, historical and other possible confounding factors while providing the necessary variance in electoral rules.⁴ However, this strategy implies that the average SMD MP and the average PR MP are as similar as they can be in all relevant respects other than their mandate type – an assumption that is untenable. Finding that MPs from SMDs are more likely to be mavericks than their colleagues from PR lists may simply reflect the tendency of more independently-minded candidates to run in SMDs.

The incomplete research designs employed in the existing studies may be the reason why the findings regarding the connection between legislative behavior and electoral insti-

³Another possibility is to compare different legislative chambers in the same country if these chambers employ different electoral rules (see, for example Desposato, 2006). However, these situations are rare, and therefore MMS has become a more commonly used setting for studying the causal connection at hand.

⁴MMSs have been argued to serve as “crucial experiments” (Shugart, Valdini and Suominen, 2005, 34) or offer “controlled comparisons” (Moser, 2001; Moser and Scheiner, 2004) to study the relationship between electoral rules and legislative behavior.

tutions have remained inconclusive (Carey, 2007). For example, while some cross-national studies report that electoral systems significantly influence party unity, Morgenstern and Swindle (2005) show with data from 23 democracies, that electoral system has no clear effect on whether the legislators follow local interests when voting in parliament. The findings from the MMS studies are also mixed (Chiva, 2007; Kunicova and Remington, 2008; Thames, 2004). Some studies have found that SMD MPs are not significantly more likely to break party unity in parliamentary voting than their PR counterparts once other characteristics – such as party affiliation – are controlled for (Haspel, Remington and Smith, 1998; Herron, 2002; Thames, 2005).⁵ Still other studies find that SMD MPs are significantly more likely to be mavericks than PR MPs, even after accounting for relevant controls (Ferrara, 2004; Sieberer, 2010; Thames, 2004). Such contradictory findings have been reported even for the same country (see, for example, Haspel, Remington and Smith, 1998; Kunicova and Remington, 2008; Smith and Remington, 2001; Thames, 2001, 2005). The same is true for studies that use other types of parliamentary behavior instead of voting, such as committee assignments:⁶ although some studies find support for the claim that SMD MPs are more constituency oriented in their committee assignments than their PR counterparts (Lancaster and Patterson, 1990; Stratmann and Baur, 2002), other studies show little evidence of such a connection (Crisp, 2007; Crisp et al., 2009).

Our research design makes use of a different kind of controlled comparison offered by mixed member systems but not exploited in previous studies – one that allows to more rigorously identify the causal effect of electoral rules on the voting behavior of legislators. By observing the change in the voting behavior of those legislators whose mandate type

⁵See also Clark et al. (2008) who show that Lithuanian district MPs have higher party unity scores than their list counterparts and Jun and Hix (2010) who report the same for South Korea.

⁶Other response variables used include (co)sponsorship patterns and acts of public posturing, such as speeches on the floor.

changes and those whose does not, we can evaluate whether and how different electoral rules causally influence individualism in parliament. As such, the results of the study contribute not only to the literature on legislative behavior and representation, but to the institutional theory in political science more broadly by directly evaluating one of its primary claims that institutions influence – rather than simply reflect – behavior.

Using data from four parliamentary terms in Hungary (1994-1998, 1998-2002, 2002-2006, 2006-2010), and regression as well as matching analysis, we find that when the electoral system changes from PR to SMD, then legislators become significantly more constituency oriented in their voting behavior, indicated by increased levels of defections from the party line of voting. However, when the electoral system changes from SMD to PR, there is no significant change in the voting behavior of legislators. These asymmetric results are novel and run counter the unqualified argument according to which legislators' behavior is a response to the constant-sum power of competing principals – so that when the balance of power between them changes due to a change in electoral rules, so does the behavior of legislators. Overall, our findings strongly suggest that the effect of the new electoral system on legislative behavior is significantly influenced by the past electoral system. MPs are creatures of habit, and, unlike often assumed, institutional effects are not immediate. The lasting influence of past institutions, combined with selective dynamics, may therefore account for why electoral reforms do not always produce the expected results (see Scheiner, 2008, for examples).

Legislative behavior and the mandate: theoretical argument

The most common (albeit sometimes implicit) argument connects electoral rules and legislative behavior through the incentives to align with the preferences of one actor from a set of competing principals – that is, actors who have a say in a legislator's reelection prospects, but whose interests can be at odds with each other (see, for example, Bowler and Farrell 1993; Carey 2007, 2009; Hix 2004; but see Sieberer 2010 for a counter-argument). Party

leaders and constituency voters are the most easily identifiable principals of the legislator.⁷ Both principals expect the legislator to choose the voting alternative that they prefer. Failing to do so is costly for the reelection-oriented legislators because the offended principal can withdraw or decrease its support for them.

When the interests of the two principals coincide, the legislator has no trouble choosing over the set of alternative voting options: he or she chooses the alternative preferred by both principals, and party discipline is observed. When the preferences of these principals are misaligned, however, the legislator must favor one at the expense of the other. Which principal the legislator chooses to favor depends on which one has a greater impact on her prospects of reelection, i.e., on which offense is costlier. If the reelection goal is best attained through party leadership, then legislators are more likely to adhere to the party line in their voting. If the goal of reelection can be achieved by a direct relationship with voters, then party loyalty in parliament becomes less important. In such a situation, aligning with the party and defecting against voters is likely to be costlier for the legislator than defecting against the party. Therefore, increases in indiscipline would indicate that the legislator is deliberately eschewing the party interests in favor of the constituency.⁸

The relative cost incurred by offending each of the competing principals and consequently the relative power of these principals is, in turn, affected by the electoral system in place. As stated above, previous literature argues that electoral systems where voters have no direct say over the reelection of individual candidates encourage legislators to adhere to party loyalty while those that allow personal votes make parties less relevant for legislators' political advancement and create incentives for individualism in parliament.

⁷Carey (2009) points out that depending on the political system, there are other potential principals such as presidents, governors, interest groups, political activists, etc. We follow Carey and focus on party leaders and voters as "the most prominent and prevalent principals who exert pressure on legislators in the widest range of contexts" (Carey, 2009, 15)

⁸More generally, it indicates a preference to satisfy any principal but the party.

In both systems considered here – SMD and closed-list PR – legislators are likely to depend on party resources such as favorable nomination (i.e., list place), campaign funds, party infrastructure, and party reputation for reelection. However, the extent to which they also depend on the constituency is likely to vary across these electoral systems. For electoral success, a PR legislator is less likely than an SMD legislator to depend on his or her personal reputation for two interrelated reasons. First, in the case of closed-list PR, voters can only vote for the party but cannot cast personal votes for any particular candidate. In the case of SMD, however, voters cast a ballot for an individual in a party and, therefore, voters can directly sanction the offensive behavior of an SMD legislator. Second (and relatedly), closed-list PR and SMD also differ in the number of candidates running in a given district under the same party label and, hence, in the visibility of any given candidate. In SMD, there is only one candidate from a party, which is why the behavior of that candidate is likely to determine the reputation of the party (along with that of their own) in a given district. Rather than shielding the legislator from electoral punishment, this reinforces the legislator’s incentive to cater to constituency interest and abandon the party line if necessary. In a closed-list PR, on the other hand, district magnitude and hence the number of candidates from a given party is greater than one. This dilutes the effect of the voting behavior of any individual legislator on both their own reputation – since it is still possible for them to “surf” the reputation of their party – as well as on their party’s reputation, which is what ultimately gets them elected. When the overall number of candidates from a party is low it is still possible for the vote share of the entire party in a district to be affected by a single legislator’s behavior (see Carey and Shugart, 1995; Shugart, Valdini and Suominen, 2005). But as the number of candidates per party, and hence also their individual visibility increases, the magnitude of this effect should decrease. Provided that the party as a whole can satisfy the minimum requirements of a constituency, no individual legislator’s electoral prospects suffer from eschewing the constituency interest and toeing the party line instead.

In sum, because personal votes cannot be cast and because the voting behavior of any individual legislator is less consequential for the overall party reputation in a given district,

legislators in closed-list PR systems should be less likely to value constituency as a reelection resource and therefore serve party interests in the legislature. In SMD systems, because voters can vote for a specific legislator and because that legislator's behavior is largely responsible for his or her party reputation in the eyes of his or her district voters, legislators should be more likely to value constituency as a reelection resource and therefore serve their interests in the legislature.

When a legislator experiences a mandate change the balance of power between the two principals is expected to change accordingly: if the change occurs from an SMD mandate to a PR mandate, the party principal gains salience with respect to the constituency principal, thereby incentivizing the legislator to be more responsive to the party's interest. Similarly, when a legislator's mandate changes from PR to SMD, his or her behavior should accordingly accommodate the interests of the electorate over those of the party more often than before.

Research Design

Previous studies have ignored the full comparative possibilities made available by mixed-member electoral systems. Doing so can obscure the study of causal effects (and we are after the causal effects of electoral institutions on legislative behavior), because it is easy for confounding covariates to be unbalanced in observational studies. That is, if a variable affecting the outcome of interest (in this case, the legislative behavior of MPs) has significantly different distributions across groups with different mandates (or MPs whose mandate changed and MPs whose mandate remained the same), statistical analysis could either reveal no effect when in fact there is one, or could mistakenly lead to the conclusion that the effect *does* exist in the absence of one (Gelman and Hill, 2006). This fact may very well account for the inconsistencies in the literature which we pointed to earlier. By choosing the wrong set of MPs to compare, other studies cannot insure the type of covariate distribution balance needed to perform statistical causal inference (Rubin, 2006).

Instead of using legislators with a PR mandate as controls for legislators with an SMD

mandate, we use MPs who did not change mandate type from one term to the next as controls for those who did. Our approach therefore improves on previous measures of the effect of mandate type on legislative discipline by increasing the expected comparability of the mandate groups being compared, and allows us to test the hypothesis derived from the competing principals theory. This is tantamount for extending our results to situations of institutional change more generally, thereby increasing the external validity of our study.

We test our intuition about the consequences of mandate change with data from the National Assembly of Hungary. Hungary is a post-communist democracy that has held regular democratic parliamentary elections every four years since 1990. This parliament offers an ideal setting for the empirical testing of our arguments because (1) it employs an MMS with 176 out of the 386 MPs elected from SMDs and the rest elected from regional and national party lists, and (2) the mandate type (SMD vs. PR) changes from one term to the next for a number of MPs while for others it remains the same. We will estimate the impact of changing mandate types by comparing the difference between average defection levels between those MPs whose mandate changed to that of MPs whose mandate remained the same.⁹

The Hungarian MMS combines three ways to elect an MP (Benoit, 2005): First, in the SMD contests, candidates compete directly and voters choose their most preferred candidate on the ballot. The candidate who gets the most votes wins unless nobody gets more than 50% of the vote in which case a runoff plurality contest is held between the top three

⁹Mandate change can occur via two different mechanisms: (1) An MP's nomination can change from one tier to another or from double to single nomination, or (2) the MP can be elected from a different tier than previously even if his or her nomination remains the same (i.e., the MP is double nominated both times). We acknowledge that whether or not an MP experiences mandate change is not random (and cannot be argued to be as if random). However, our research design gives us a great assurance against spurious relationships. As explained below, our results are similar regardless of the origin of mandate change.

candidates and any candidate with more than 15% of the vote. Second, Hungary is divided into 20 regional constituencies, which correspond to counties. The district magnitude in the regional districts ranges from 4 to 28. In the regional tier, voters vote for the party and seats are then distributed according to a largest-remainder PR formula. Third, 58 national list seats are allocated to qualifying parties based on votes that were not used to obtain a seat in the first two tiers (so called surplus votes) using the D'Hondt procedure. The regional and national lists are closed. In our empirical analysis, we use two alternative strategies to handle the PR elections: (1) we consider the MPs elected from either regional PR (RPR) or national PR (NPR) list together as having a PR mandate, and (2) we separate the RPR MPs from the NPR ones and estimate the effects for each type.

During the time period under study (1994-2010), seven parties were represented in the Hungarian parliament: the left-wing Social Democratic Party (MSZP), the liberal Alliance of Free Democrats (SZDSZ), the right-wing agrarian Independent Smallholders' Party (FKGP), the center-right Democratic Forum, the radical rightist Justice and Life Party (MIEP), the Christian-conservative Christian Democratic Party (KDNP), and the conservative Alliance of Young Democrats (FIDESZ). The size of these parties has varied over the parliamentary terms with MSZP and FIDESZ gaining influence over time and the others losing it or disappearing altogether.

We have collected data for the 1994-98, 1998-02, 2002-06 and 2006-10 legislative terms. Since only those MPs who have served in at least two terms are susceptible to mandate change, our sample is composed of the set of all MPs who served in at least two terms between 1994 and 2010.¹⁰ There are a total of 1421 cases in our dataset. Of those, 138 MPs have changed from the SMD to the PR tier, while 344 have remained in the SMD tier; 118 MPs have changed from the PR to the SMD tier, and 452 have remained in the PR tier.¹¹

¹⁰We exclude those MPs who switch parties and who serve for two non-consecutive terms. Including these cases and controlling for them in the analysis does not change the results.

¹¹We coded all data for this project from Hubai (2001), the website of the Hungarian

Because we are combining data over a relatively long period, the likelihood that our results represent an unusual parliamentary term in the particular case of Hungary is decreased. Furthermore, we believe that our results are not just characteristic of a transitioning democracy because, during the time-period under consideration, the Hungarian democracy matured and stabilized considerably. Additionally, with its two different PR tiers, the Hungarian case provides us with more information than other MMS systems: it allows studying electoral system change to and from (1) a PR with a large nationwide district (NPR) and (2) a PR with smaller geographically concentrated districts (RPR). Most importantly, however, the generalizability of our study is buttressed on the extent to which we can isolate the effect of institutional changes on legislative behavior – despite the observational nature of our data.

Measuring voting behavior

We measure legislative behavior using MP's parliamentary voting records. In Hungary, almost all votes are publicly recorded votes and included in the study.¹² This avoids selection bias in determining MPs' voting behavior (Carrubba et al. 2006). Specifically, we look at the change in the frequency with which an MP disagrees with his or her party line across two consecutive parliamentary terms – a variable labeled *Change in defection rate*.

The raw defection rate for each MP, each term, is obtained by calculating the share of recorded votes by a given legislator that deviate from the party line of voting. Following previous research, we infer party line from the behavior of the majority of its members who are present and participate in voting (Carey, 2009; Mainwaring and Linàn, 1997; Skjaeveland, 2001). That is, when a majority of party members vote “aye,” then “nay” and “abstain”

National Assembly www.parlament.hu and that of the Hungarian Election Commission www.valasztas.hu.

¹²The total number of votes for each of the four terms is 6772, 7310, 15682, and 8143 respectively.

votes are coded as defections.¹³ When no majority of party members who are present vote the same way, then there is no party line and no defections are possible. The participation rate can vary significantly and it is fair to assume that votes where very few party members participate are not important to the party and no clear party position exists. Therefore, for the measurement purposes, defection is only possible in the case of those votes where the majority (50%) of party members were present and voting. The formal presentation of the measurement of this indicator is given in the appendix. The measure ranges from 0 to 1, and consequently, the theoretical range of the variable *Change in defection rate* is from -1 to 1. The observed range of this variable is from -0.168 to 0.087, with a mean of -0.013 and a median of -0.003.¹⁴

In terms of additional descriptive statistics, the Hungarian case offers considerable variance in the defection rate: five MPs have never defected against their party during the terms that they are included in the dataset while the maximum defection rate is 0.312. The defection rate of an average MP is about 0.023. Comparing groups of SMD and PR legislators in Hungary, previous research shows that the former are more likely to break party unity and engage in constituency work than the latter (Judge and Ilonszki, 1995; Ilonszki and Judge, 1994; Montgomery, 1999).¹⁵ A similar comparison using our data shows that the difference is not striking: the average defection rate is about 0.024 for MPs from SMDs and about 0.022 for MPs from PR lists. This difference is not statistically significant and would lead us to believe that voting behavior across the two tiers does not differ – a conclusion that a careful, more appropriate causal analysis proves to be false.

¹³“Abstain” is a voting option like “aye” and “nay,” it is not an equivalent of “did not vote.” Absences are treated as missing data.

¹⁴The distribution of this variable is symmetric enough around small values that inferences from ordinary least squares modeling strategies are reliable.

¹⁵But see Thames (2005) that reports no evidence of mandate divide in Hungary.

Independent and control variables

Our main explanatory variable is mandate change, as it compares to coming back to office but not changing mandates at all. We also control for factors that have been found to influence the extent to which an MP changes his or her legislative behavior. For example, we know from the previous literature that MP's party affiliation may influence his or her behavior (Haspel, Remington and Smith, 1998; Herron, 2002; Thames, 2005). Mandate switching may also be more likely in some parties than others and produce significant effects on voting behavior in the case of some parties but not others. We therefore control for party membership (party dummies).¹⁶ Since our analysis includes multiple parliamentary terms, we also include term dummies to control for any time effects.¹⁷

Literature on mixed electoral system also refers to the significance of the type of nomination on legislator's voting behavior. Specifically, legislators may be "double nominated" in both an SMD and a PR district. Such double nominated legislators may not behave according to the expectation of single-nominated SMD or PR legislators (Bawn and Thies, 2003; Crisp, 2007). In our setting this may mean that MPs who are doubly nominated and simply happen to be elected from a different tier than previous time have less of an incentive (or none at all) to change their behavior. We therefore also control for whether a given MP was nominated in both the SMD and (at least one of) the PR tiers.

Analysis and Results

We, first, used OLS regression to estimate the effect of mandate change on the change

¹⁶KDNP and MIEP are effectively dropped because they did not have enough returning MPs. FKGP is dropped from the SMD sample. FIDESZ represents the reference category.

¹⁷Since we are looking at change in defection rate, the first parliamentary term for which we have data – 1994-1998 – gets dropped from the analysis; the 1998-2002 term is the reference category.

in an MP's defection rate.¹⁸ Given our definition of comparison groups, we performed two separate analyses: one for testing the effect of moving from SMD to PR, and another for testing the effect of the opposite move. The general form of each model of the change in defection rate ΔDR for the i^{th} observation is

$$\Delta DR_i = \alpha + \beta_1 \text{Mandate Change}_i + \beta_2 \text{Double Nomination}_i + \beta_3 \text{Party}_i + \beta_4 \text{Parliamentary Term}_i + \epsilon_i \quad (1)$$

where *Mandate Change* is an indicator variable signaling whether the MP changed her mandate type (from SMD to PR for the first model, and vice versa for the second); *Double Nomination* is also an indicator variable, and it tracks whether the MP was nominated in both types of tiers; and *Party* and *Parliamentary Term* indicate the party of the MP and the legislative term to which the observation corresponds, respectively. ϵ is a normally distributed stochastic error term.

The results of estimating these models, presented in Table 1, only partly support the competing principals theory. Changing the mandate from PR to SMD produces a significant change in voting behavior, i.e., those MPs whose mandate changes become significantly more independent and less partisan than their peers whose mandate remains PR. However, changing the mandate from SMD to PR *does not* significantly alter the MP's voting behavior. Substantively, changing mandates from PR to SMD increases MP's defection rate by about 0.9 percentage points. This is a sizeable effect and amounts to about one standard deviation change in the observed defection rate of the PR sample.

Despite the fact that our research design should be better at capturing the causal effects of

¹⁸The models are estimated using Stata 11. We use robust and clustered standard errors because of the presence of heteroskedasticity in the conditional distribution of the defection rate, as well as the presence of multiple observations per MP over time

mandate type, the asymmetry in the institutional effects seem counter-intuitive and it could be argued that our model still cannot ensure comparability between the groups of legislators who did experience mandate change and those who did not – a necessary condition for making causal claims. In other words, even though we correct previous uses of mixed-member system data by more carefully choosing the right set of legislators to compare, we can only assume that the two group of legislators are similar, so that we can be sure that the effect is attributable to changes in the mandate. Matching can help us achieve such type of balance in the control covariates.

Matching is a data preprocessing technique that works with the existing dataset to create one in which treatment and control groups are as similar as possible with respect to all variables we believe to affect the outcome of interest. This provides us with data that can be used to make inferences about the counterfactual claim that is implicit in any causal statement: “what would have happened, had the treatment not been present in this particular observation?” We use GenMatch (Sekhon, 2010), an R program which uses a genetic algorithm to search for the optimal balance in the three variables (Double nomination, Party, Parliamentary term) that could theoretically confound the effect of the treatment, and on a propensity score (i.e., a probability of being treated), which is estimated using a logistic regression. Optimal balance is searched using a “one-to-one with replacement” matching scheme (Rubin, 2006).

In order to check the robustness of our finding, and using balanced datasets, we estimated the average treatment effect on the treated (ATT) (Rubin, 2006) of changing mandates, which amounts to the average change in defection rates observed amongst those who experienced a mandate change. Figures 1 and 2 show balance in the covariates before and after matching for the datasets used for this part of the analysis (viz. two aggregated datasets, “SMD to PR” and “PR to SMD”). The black dots represent the difference in proportions between the treatment and control groups for each categorical variable, with the gray

bands tracking the corresponding 90% confidence interval on these differences.¹⁹ Differences in proportions equal to (or statistically indiscernible from) zero indicates that balance is achieved in all the corresponding confounding variables.²⁰

Next to the dot-plots, the figures also present a graphical description of the power function for each test. Power is particularly important when trying to establish that a null hypothesis is not rejected, which is the case here. As (Agresti and Finlay, 2008, 169) state, “when you read that results of a study are insignificant, [you should] be skeptical if no information is given about the power. [It] may be low, especially if n is small”. Statistical power of a test is the probability of rejecting the null hypothesis (in our case, that the difference in proportions is zero). This probability is equal to 1 minus the probability of making a type II error – the error made when a false null hypothesis is not rejected. If the power of a test is low, the probability of making a type II error is high. Statistical power always increases for values of the parameter that are farther from the hypothesized null value (i.e., zero in our case). However, “fatter” power functions indicate that the test is not capable of picking up true differences as significant, and “tighter” power functions indicate that even small deviations from the null value can be identified by the test as significant ones (DeGroot and Schervish, 1986). In all our graphs, the power functions are consistently tight indicating that our conclusion about no differences across groups is reliable, since even small differences would be picked up by the test as significant.

This procedure confirms the results presented in Table 1, yielding an unreliable mean change in discipline for those who changed mandates from SMD to PR: 0.003 (95% C.I.

¹⁹The standard error was calculated according to the McNemar test of differences in proportions for paired samples.

²⁰Balance is formally understood as a situation in which *all* moments of the distributions of the random variables conditional on the different values of the treatment variable are identical, not simply the mean. As such, it is almost impossible to insure. Equal means, however, should provide a good empirical approximation.

($-0.003, 0.01$), $N = 93$); and a significant mean change of 0.009 (95% C.I. ($0.004, 0.015$), $N = 62$) for those who changed mandates from PR to SMD. Once again, our original expectations derived from the competing principals theory are not entirely borne out, as the asymmetry remains robust to a more careful control for covariate balance.

Different types of PR lists

The results that we have obtained so far do not fully confirm the expectations of the competing principals theory. This calls for further exploration into the possible reasons for the counter-intuitive findings. Fortunately, the Hungarian setting allows us to do more than simply look at the differences between SMD and PR. This is because, as discussed above, the PR seats are filled from two different kinds of lists: of the 210 PR seats, a maximum of 152 mandates are allocated from the 20 regional (county level) closed constituency lists and a minimum of 58 mandates are allocated from the closed national (compensation) list. Voters cannot vote for the national list directly; rather, they can cast two votes: one for a candidate in an SMD and one for a regional party list. The allocation of seats from the national lists is decided based on surplus votes from the other two tiers. Therefore, MPs elected from a national list essentially have no easily identifiable geographical constituency. By deciding the composition of the national list, the party becomes their sole principal. In a continuum of constituency-centered to party-centered electoral rules, in the Hungarian case, the SMD tier and the national list tier should represent the opposite ends of the scale respectively with the regional list tier constituting a middle category. MPs from the latter are tied to the party due to closed lists but they also have identifiable geographical constituencies functioning as a possible competing principal and potentially drawing them away from party-centered behavior in parliament. Given this, it would not be surprising if the effect of mandate change differs for the different types of PR. However, it is equally possible that mandate switches to and from one type of PR are driving our asymmetrical findings, which would then disappear upon closer scrutiny.

We have, therefore, explored whether the findings are similar for mandate switches to and from national PR (nPR) and regional PR (rPR). Table 2 presents the results of estimating

the model in Equation 1 on both types of PR separately. In all cases, support for the asymmetry hypothesis remains: mandate change from SMD to PR – this time to either type of PR – produces no significant change in an MP’s voting behavior. However, the effect of the mandate change from PR to SMD is significant for both types of PR: the defection rate of those MPs who switch from rPR or nPR to SMD increases significantly more – by 0.9 and 0.8 percentage points respectively – than that of those MPs whose mandate remains rPR or nPR.

Results obtained using a matched dataset largely support these findings, although we do not have enough observations of MPs changing mandates from NPR to SMD to reach a conclusive decision with respect to their change in behavior, as can be seen from the wide power functions in Figure 4. Balance and statistical power for these matched datasets can be seen in Figures 3 through 6. Specifically, we find that the ATT for those who changed mandates from SMD to regional PR is not significant (95% CI (−0.005, 0.0036)); that the ATT for MPs whose mandate changed from SMD to national PR was also not significant (95% C.I. (−0.012, 0.017)); that the ATT for those who changed from rPR to SMD was positive and significant (95% C.I. (0.0001, 0.017)); and that the ATT for those who changed from an nPR mandate to an SMD mandate was positive (as expected) but unreliable (95% C.I. (−0.007, 0.012)).

The effect of the origin of mandate change

As noted above, mandate change can occur via two different mechanisms: (1) An MP’s nomination can change from one tier to another or from double to single nomination, or (2) the MP can be elected from a different tier than previously even if his or her nomination remains the same (i.e., the MP is double nominated both times). Another test we can perform, then, is to explore whether and to what extent both sources of mandate change influence voting behavior. It is possible that MPs only respond to mandate changes when they are the result of party decisions – in which case they would change their behavior only (or to a greater extent) when their nomination changes *but not* when they are simply elected from a

different tier without nomination change. In the latter case, MPs may continue serving their previous principal in the hope of earning a mandate from them again. In order to get at this conditional effect, we include an interaction between mandate change and nomination change in the regressions presented in Table 1. Nomination change is coded “1” if an MP’s nomination changes (1) from SMD to PR (for the SMD sample) or PR to SMD (PR sample), (2) from single nomination to double nomination, or (3) from double nomination to single nomination. We also control for the party and parliamentary term.

The results of the interaction models are presented in Table 3. The effect of mandate change in the SMD sample remains insignificant regardless of the source of this change. For the PR sample, the effect of mandate change for those MPs whose nomination did not change is 0.013 (the coefficient for the mandate change variable). That is, MPs who were doubly nominated at both times but elected from a PR list at time $t - 1$ and from an SMD at time t are likely to increase their defection rate by 1.3 percentage points. A similar effect for those MPs whose nomination changes can be calculated by adding the coefficient for mandate change and that of the interaction term: $0.013 + (-0.002) = 0.011$. We use the `lincom` command in Stata²¹ to estimate the corresponding standard error ($SE = 0.005, p < 0.05$). This is only slightly smaller than the effect for those MPs whose nomination did not change, and the difference between these effects is not statistically reliable as indicated by the insignificant coefficient for the interaction term. Mandate change from PR to SMD is associated with increased defection rate regardless of the source (nomination or election) of the mandate change.²²

²¹`lincom` aids in the calculation of relevant quantities for linear combinations of estimators. In the case of interactions, `lincom` treats the estimated coefficients for the factors of the interaction as random variables and computes the variance (and standard error) of their sum, using the estimated covariance matrix of the coefficients. See Brambor, Clark and Golder (2006) for further details.

²²As yet another robustness test, we used a different measure of the dependent variable:

Finally, it is possible that the mechanism through which mandate changes from SMD to PR come about is different than that which prompts changes in the opposite direction, and that this difference in mechanisms accounts for the asymmetry in our results. Changes in the former direction can be the result of a punishment already taking place – namely, a stick wielded by the electorate on a legislator who sided with the party all too often. Such legislators would arguably still be of great value to the party, which would explain their reappearance for yet another consecutive term under the same party. Changes in the other direction (i.e. from PR to SMD) cannot be thought of in the same way, because running successfully in an SMD race requires quite a bit of party support – something a consistent party maverick might be hard pressed to get. Hence, changes in the direction of SMD to PR are consistent with a selection process that is not present in the case of mandate changes occurring in the direction of PR to SMD.

To check for whether this is the case, we explored whether the defection rate was systematically different for MPs whose mandate changed from SMD to PR and MPs whose mandate remained SMD *when both groups had an SMD mandate*. Since our response variable is a gain score (i.e., a difference), it is possible for SMD-to-PR MPs to have had an already

the number of times the MP spoke on the parliamentary floor. Specifically, we looked at whether this number changed significantly for those whose mandate had changed compared to those whose did not. Speaking on the parliamentary floor is a way for MPs to increase their personal visibility and represent their constituencies. Previous research on parliamentary activism in Hungary has argued that such speeches may indicate constituency-oriented behavior, and that, consequently, SMD MPs are more likely to make use of opportunities to speak (Montgomery, 1999). Using the same model specifications as in Table 1, our preliminary results confirmed the asymmetry in the effect of electoral system change on parliamentary behavior: mandate change from SMD to PR does not significantly change the number of times MP speaks on the floor. However, mandate change from PR to SMD is associated with a significant increase in the number of speeches.

high defection rate, obscuring the effect of the change in our difference-in-differences modeling strategy. The mean defection rate for the group of MPs whose mandate changed from SMD to PR, however, was actually statistically *higher* than that of MPs whose mandate remained SMD.²³ Hence, it does not appear to be the case that selection through effective punishment on the part of principals is driving our finding of asymmetry.

To summarize, we have found a significant asymmetry in the effect of electoral system change from SMD to PR and vice versa. The former does not alter MPs' voting behavior, while the latter significantly increases – by 0.9-1.3 percentage points, i.e., by approximately one standard deviation – MPs' defection rate against their party. These findings were confirmed using OLS regression and matching analysis; they hold for both regional and national PR tier and do not depend on nomination changes or double nomination. Overall, our original findings appear to be robust, but they run counter to the theoretical expectations derived from the argument about competing principals.

One issue that we have not yet addressed is what the literature on MMS often refers to the “contamination effect,” i.e., the idea that the SMD and PR tiers in such systems are not independent of each other and MPs elected in the SMD (PR) tier of an MMS do not behave as those elected in pure SMD (PR) systems because of the presence of the other tier (Bawn and Thies, 2003; Crisp, 2007). One might argue that our results emerge only because of the fact that the two tiers may not be independent and therefore our results do not help us understand electoral reform more generally. Contamination has been argued to result from two main sources: (1) the concurrent presence of copartisans elected under different rules can make both SMD MPs and PR MPs less constituency oriented than they would be in pure systems, or (2) the possibility of dual candidacies can make MPs follow a mixed strategy in legislative behavior (Bawn and Thies, 2003; Crisp, 2007). Both arguments imply that the

²³The mean defection rate of changing MPs was 0.033, while the mean defection rate of MPs whose mandate remained SMD was 0.022, with a difference significant at the 99.6% confidence level.

behavior of MPs from different tiers is not significantly different from each other. For our analysis this means that we should find symmetrical null effects for both changes from SMD to PR and vice versa. Our asymmetric results negate this possibility. As for dual candidacy, we have explicitly accounted for this variable in our analyses, and the results regarding the effect of mandate change remain reliable. Moreover, we are including party indicators in all of our models, which effectively holds the composition of each party's legislative delegation constant, thereby controlling for the effects that come about by having different mixtures of SMD and PR legislators (Crisp, 2007). Finally, since we are interested in understanding the effects of change of electoral rules for a given legislator on their legislative behavior, this effect should not hinge on the concurrent existence of legislators elected under a different set of rules. In other words, whatever "contamination effects" exist, they are held constant when one focuses exclusively on a single country with a mixed member system, so that any effect we do find is brought about by change in the set of rules that got any individual candidate elected – the same situation observed when countries change from one type of pure system to another. In sum, while not taking a stance in the contamination debate, we believe that our results have implications beyond mixed systems and help us understand electoral system change more generally.

Discussion and Conclusion

Using a setting that allows us to control for spuriousness in an observational situation, we have explored the effect of change in electoral rules on legislative behavior. We have found that if an MP's mandate changes from PR to SMD, then that MP will become significantly more independent in his or her voting behavior – a relationship that holds for both types of PR used in Hungary, i.e., regardless of whether an MP's previous mandate came from the regional or national PR list. However, if an MP's mandate changes from SMD to PR – including either regional or national PR and regardless of whether the mandate change results from a change in nomination or a change in electoral fortune – then the legislative behavior of that MP does not change significantly. This is a robust but unexpected finding

that we were unable to explain away when testing for a number of possible explanations. In this concluding section, we offer one plausible interpretation of the novel findings.

It is possible that the lasting influence of past institutions, combined with selective incentives to respond depending on whether a principal gains or loses power as a result of mandate change, may account for our findings. Specifically, the hypothesis about the effect of mandate change derived from the competing principals theory is blind to any past experiences; electoral changes, however, do not occur in a vacuum. Scholars of institutional change argue that such change is incremental and path-dependent because of the formalization of the existing set of practices (Mahoney and Thelen, 2010; North, 1990). The actors involved are likely to have adapted to the situation *before* the change in ways that influence their behavior also *after* the change. It therefore becomes relevant to pay attention to the previous electoral rules because it is possible that the legislators' habits and past experiences acquired under those rules may have an effect on their behavior under the new ones (Crisp et al., 2009). Accordingly, it is possible that change in behavior occurs only to the extent that it is necessary to *avoid punishment* by either principal.

Consider a change from PR to SMD. A legislator who maintains his or her party-centered behavior acquired under PR is likely to be punished by voters, because now, unlike under PR, voters can vote directly for the legislator and the legislator is the sole representative of his or her party in the district. The distribution of power between the two competing principals changes with voters becoming more powerful than they were under PR. There is, therefore, a significant incentive for the legislator to adjust his or her prior parliamentary voting behavior to account for constituency interests. The legislator needs to start cultivating a personal reputation if he or she is interested in reelection.

However, if the change occurs from SMD to PR, it is possible that a different dynamic takes place. An SMD legislator is already attending to party interests given that he or she needs access to party resources to run for reelection. This legislator is also attending to constituency interest and has a history of favorable personal reputation in his or her district. When the electoral system changes to PR, no principal necessarily *gains* any additional

power, while the constituency-principal *loses* power. Since neither principal gains power, neither one has more incentives to punish the legislator for defection than they did before the change of the electoral system. The favorable personal reputation that legislator built under SMD rules does not disappear, and if this reputation shielded a legislator against punishment by the party before, it is likely to continue to do so. After all, the favorable personal reputation accumulated and maintained by attending to constituency interests is likely to be beneficial for the general party vote share in that legislator's district. Thus, while a legislator may choose to abandon constituency interests, he or she has no pressure to do so, which suggests that any consequences of changes from SMD to PR on legislators' voting behavior may not be immediate and pronounced.

Indeed, our interesting central finding about the systematic asymmetry in changes brought about by differences in types of mandates may indicate a more general rule, according to which changes that relax accountability to one of the principals (while holding the others constant) seems to make no discernible difference in the behavior of legislators, while changes that increase accountability to one of the principals do make a difference in the behavior of legislators, particularly in terms of how likely they are to follow or break party discipline. This would be an important addition to the already well-accepted argument about the relevance of competing principals in determining legislators' behavior.

In general, this proposed argument (and our results) suggest that the relationship between rules and behavior is likely to be more complex than presumed in the existing literature because past rules – a factor that existing studies have not taken into account – may condition this relationship. Institutions do not always and immediately influence behavior. Once in place, institutions can be sticky in that people habituate their behavior according to these institutions (or, alternatively, the original institutions may simply attract people who are already inclined to behave in accordance with these institutional rules, which is why even though institutions may change, their behavior does not). Unless new institutions seriously punish this habituated behavior, they may not produce behavioral changes.

These conclusions not only contribute to the study of political institutions and legislative

behavior but also provide important lessons to the constitutional engineers interested in encouraging the representational strategies of legislators to be more or less party centered. Such reforms should not be expected to take place in a vacuum. Rather, the findings here suggest that new electoral rules may not produce desired behavior because habits adopted under previous rules persist. Electoral reformers are especially well advised to consider the changes that the electoral reform produces in the relative power of the different principals of the MP in order to more accurately predict the consequences of the reform.

Finally, our findings suggest a new way of thinking about MMS. Literature on MMS often refers to the contamination effect described above. Our results suggest a different type of contamination: one that comes from MPs' personal electoral histories in a different tier, i.e., legislators' current behavior may be "contaminated" by having previously been elected under different rules. Rather than being a nuisance, this type of contamination can be used to talk about instances of electoral reform as we have done here. More generally, our study highlights the benefit of searching for opportunities to exploit controlled comparisons offered by the real world politics to understand how democratic institutions work. Such comparisons allow better testing of (causal) theories because sources of extraneous variance are held constant by design. With the help of such a comparison, we have been able to provide a more appropriate test of the effect of electoral systems on legislative behavior than offered by existing studies.

Appendix 1

The formula for calculating defection rate

Let s_i and v_i be the total number of defections and the total number of votes cast (i.e. not including abstentions and absences) by the i_{th} MP, respectively; P_i be MP i 's party; x_{in} be MP i 's choice during vote n (equal to zero if MP i did not cast a vote during vote n); V_{pn} be the mode of the frequency distribution of party P_i votes during vote n (equal to zero if the distribution is multimodal); A_n be an indicator function that is equal to 1 iff $x_n \neq V_{pn}$, $x_n = 0$, and $V_{pn} \neq 0$, and zero otherwise; F_{pn} be a function that returns the fraction of party P_i membership present and voting during vote n ; let M_{pn} be an indicator function equal to 1 iff $F_{pn} \geq 0.5$, and zero otherwise; and t be the total number of votes taken during a legislature. Then

$$s_i = \sum_{n=1} (A_n M_{pn})$$

and

$$d_i = \frac{s_i}{v_i}$$

is the defection rate for the i_{th} MP.

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Table 1. The effect of mandate change on defection rate

Variables	SMD to PR	PR to SMD
	β (robust SE)	β (robust SE)
Mandate Change	0.002 (0.003)	0.009 (0.003)
Double Nomination	0.001 (0.008)	0.006 (0.004)
Party		
FKGP		-0.036 (0.006)
MDF	-0.002 (0.003)	0.007 (0.004)
MSZP	-0.012 (0.002)	-0.025 (0.003)
SZDSZ	-0.023 (0.008)	-0.021 (0.005)
Parliamentary Term		
2002-2006	0.012 (0.004)	0.010 (0.004)
2006-2010	0.023 (0.004)	0.027 (0.005)
Constant	-0.017 (0.009)	-0.015 (0.005)
R^2	0.25	0.45
N	318	254

Note: Table entries are unstandardized regression coefficients with robust standard errors in parentheses. Dependent variable is *Change in defection rate*. The reference category for *Party* is Fidesz and for *Parliamentary term* 1998-2002.

Table 2. The effect of mandate change on defection rate, different PR tiers

Variables	SMD to RPR β (robust SE)	SMD to NPR β (robust SE)	RPR to SMD β (robust SE)	NPR to SMD β (robust SE)
Mandate change	0.004 (0.004)	-0.002 (0.006)	0.009 (0.003)	0.008 (0.005)
Double nomination (at time t)	-0.002 (0.003)		-0.009 (0.003)	
Party				
FKGP				-0.057 (0.020)
MDF	-0.0003 (0.005)	-0.0009 (0.004)	0.001 (0.005)	0.014 (0.004)
MSZP	-0.010 (0.002)	-0.012 (0.002)	-0.021 (0.002)	-0.026 (0.008)
SZDSZ	-0.012 (0.009)	-0.021 (0.008)	-0.012 (0.019)	-0.019 (0.006)
Parliamentary term				
2002-2006	0.015 (0.004)	0.012 (0.005)	0.003 (0.004)	0.009 (0.010)
2006-2010	0.025 (0.005)	0.024 (0.005)	0.016 (0.005)	0.028(0.011)
Constant	-0.018 (0.005)	-0.017 (0.005)	-0.004 (0.004)	-0.007 (0.008)
R^2	0.25	0.31	0.47	0.5
N	294	249	136	69

Note: Table entries are unstandardized regression coefficients with robust standard errors in parentheses. Dependent variable is *Change in defection rate*. The reference category for *Party* is Fidesz and for *Parliamentary term* 1998-2002. *Double nomination* refers to MP being nominated in SMD and the respective PR tier (RPR or NPR).

Table 3. The effect of mandate change on defection rate conditional on nomination change

Variables	SMD to PR β (robust SE)	PR to SMD β (robust SE)
Mandate change	0.002 (0.003)	0.013 (0.003)
Nomination change	0.003 (0.009)	0.0003 (0.003)
Mandate change*Nomination change	0.0005 (0.012)	-0.002 (0.005)
Party		
FKGP		-0.032 (0.005)
MDF	-0.003 (0.004)	0.007 (0.004)
MSZP	-0.012 (0.002)	-0.024 (0.003)
SZDSZ	-0.023 (0.008)	-0.018 (0.005)
Parliamentary term		
2002-2006	0.012 (0.004)	0.009 (0.004)
2006-2010	0.023 (0.004)	0.026 (0.005)
Constant	-0.016 (0.005)	-0.011 (0.004)
R^2	0.26	0.43
N	316	250

Note: Table entries are unstandardized regression coefficients with robust standard errors in parentheses. Dependent variable is Change in defection rate. The reference category for Party is Fidesz and for Parliamentary term 1998-2002.

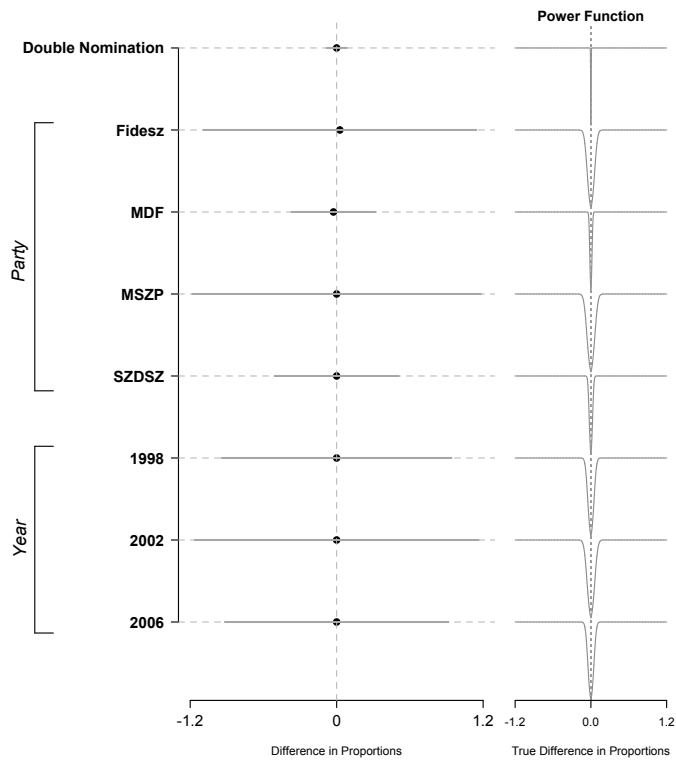


Figure 1. Treatment and Control Groups Balance and Power Functions, from SMD to any type of PR sample

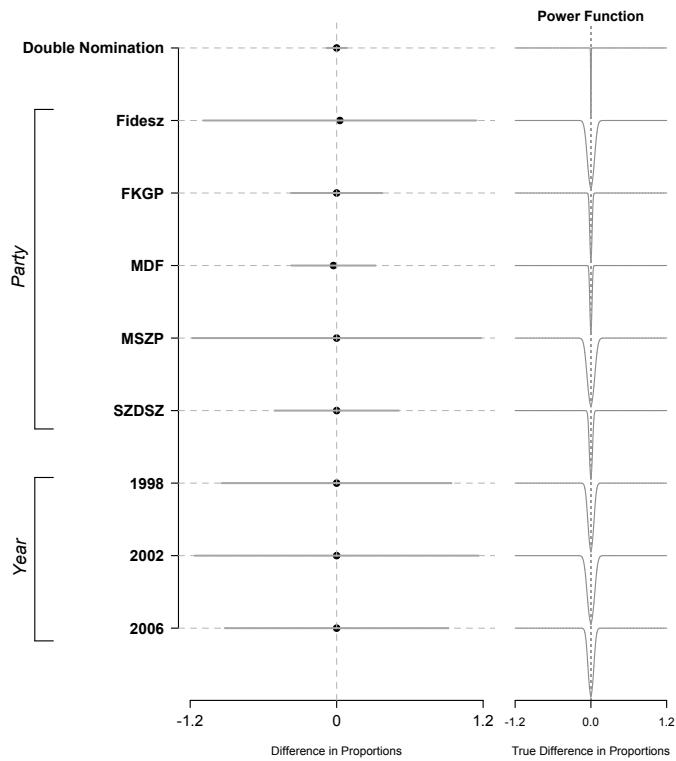


Figure 2. Treatment and Control Groups Balance and Power Functions, from any type of PR to SMD sample

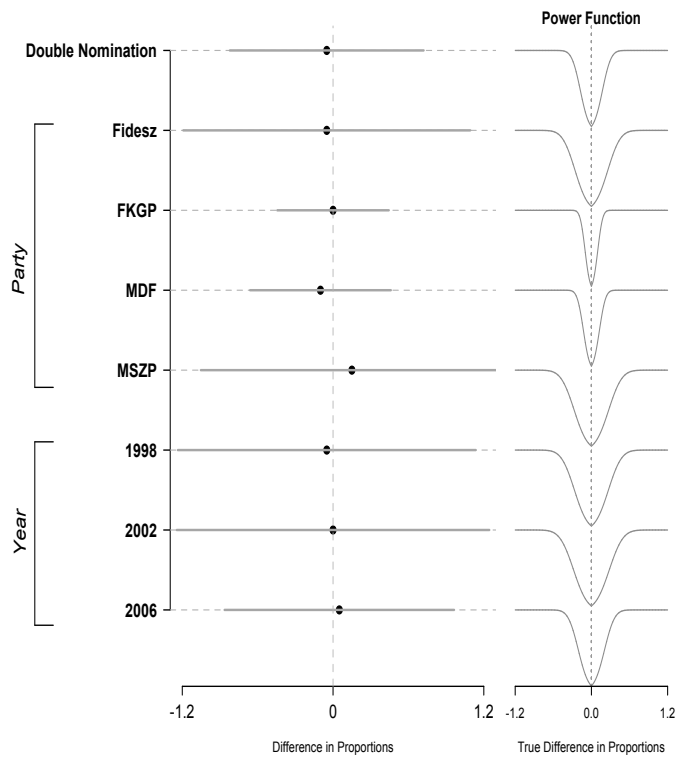


Figure 3. Treatment and Control Groups Balance and Power Functions, from Regional PR to SMD sample

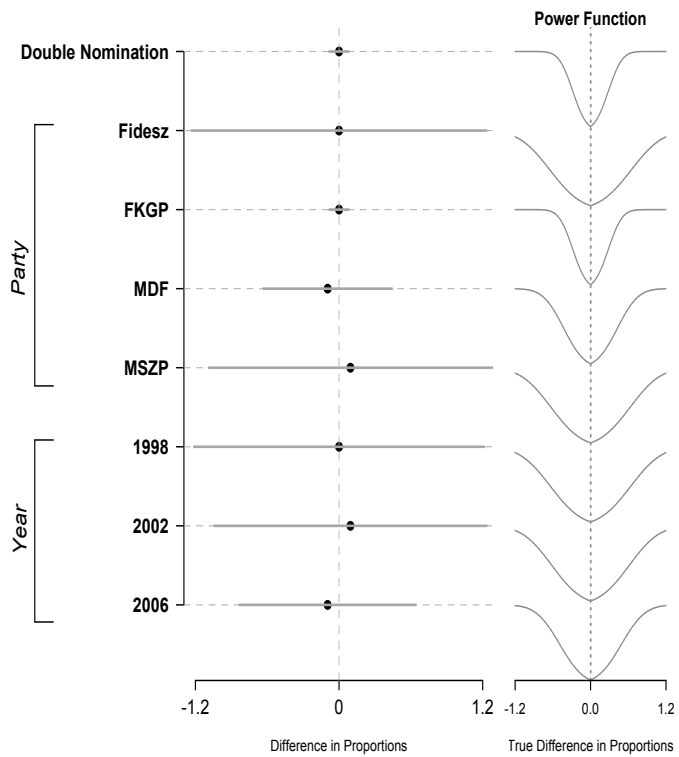


Figure 4. Treatment and Control Groups Balance and Power Functions, from National PR to SMD sample

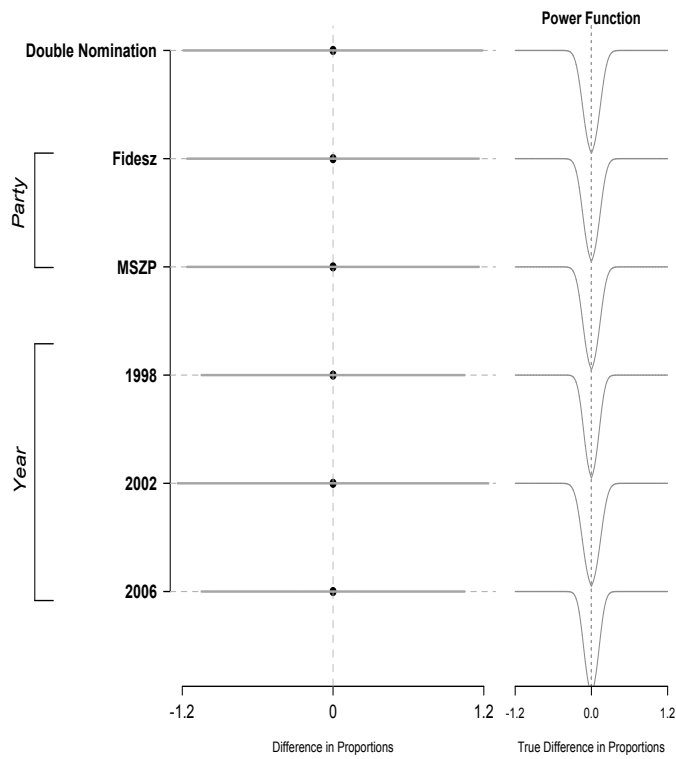


Figure 5. Treatment and Control Groups Balance and Power Functions, from SMD to Regional PR sample

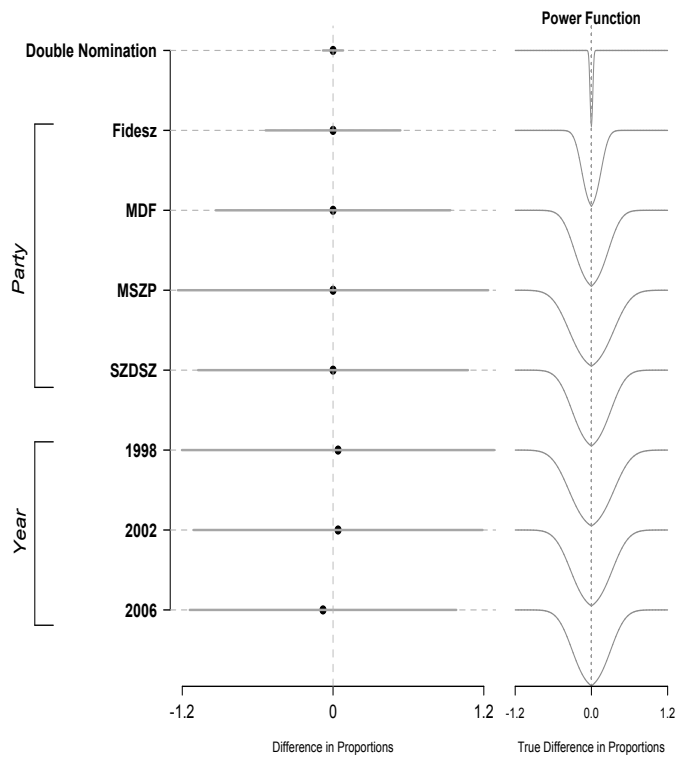


Figure 6. Treatment and Control Groups Balance and Power Functions, from SMD to National PR sample