

Supplemental Paper for “Electoral Rules and the Size of the Prize: How Political Institutions Shape Presidential Party Systems”

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This paper contains supplemental materials for “Electoral Rules and the Size of the Prize: How Political Institutions Shape Presidential Party Systems”. We initially report additional information related to the models that are both reported and discussed in this paper (Models 1-3). We then report additional models discussed but not reported there. Finally, we discuss the coding of the index of presidential powers.

1.0 Models 1-3 (Reported in the Original Paper)

1.1 *Additional Tables and Figures*

In Tables 1-3, we report the relevant portions of the Newey-West (1987) robust variance-covariance matrix of the coefficients, rounded to three significant digits, for Models 1-3. Interested readers may also request the complete matrix in electronic form, which possesses a higher degree of numerical accuracy.

Next, in Figure 1, we present the estimated marginal effect of switching to a restrictive (plurality) electoral system from a permissive (non-plurality) electoral system over the range of the ethno-linguistic fractionalization index. In this figure, the point estimates are banded with a one-sided, upper 95% confidence interval, given the literature’s prediction that the marginal effect of this variable will be negative. In Figure 2, we present the estimated marginal effect of social heterogeneity, measured as the ethno-linguistic fractionalization index (ELF), for both non-restrictive (non-plurality) and restrictive (plurality) electoral systems, which are shown as taking values of ‘0’ and ‘1’, respectively. A one-sided, lower 95% confidence interval is again shown for each point estimate, given the literature’s prediction that the marginal effect of this variable will be positive. Both of these figures are based on Model 1.

The marginal effects of electoral system restrictiveness are discussed in the main paper, but the marginal effects of social heterogeneity are not. Accordingly, we offer a brief discussion here based on the results from Model 1. Increasing social heterogeneity is always predicted to have a positive effect on the effective number of presidential candidates, in accordance with the literature’s hypotheses. However, contrary to those hypotheses, the effect is only statistically significant when a restrictive (plurality) electoral system is employed: the literature instead hypothesizes that an increase in social heterogeneity should only have a statistically significant effect when the electoral system is permissive.

1.2 *Technical Details*

Estimation of the Newey-West (1987) standard errors is done using Roodman's (2002) time series cross-section extension to STATA 7.0's “newey” command. Similar results are obtained using STATA 9.0's “newey” command.

	PLURAL- ITY	ELF	PLURAL- ITY*ELF	PRES- POWER	PRES- POWER²	PRES- POWER³	GOV- REV	GOV- REV²	GOV- REV³
PLURALITY	0.0504								
ELF	0.0668	0.363							
PLURALITY*ELF	-0.115	-0.257	0.494						
PRESPOWER				0.0132					
PRESPOWER²				-0.00141	0.000161				
PRESPOWER³				0.0000400	-0.00000470	0.000000140			
GOVREV				0.005571	-0.00437	0.000221	116		
GOVREV²				-0.227	0.0453	-0.00159	-563	2930	
GOVREV³				0.491	-0.0724	0.00239	802	-4330	6560

Table 1. The relevant portions of the estimated variance-covariance matrix of the coefficients from Model 1. The robust Newey-West estimator is employed. Estimates rounded to three significant digits.

	PLURAL- ITY	ELF	PLURAL- ITY*ELF	GOV- REV	GOV- REV²	GOV- REV³
PLURALITY	0.0528					
ELF	0.0650	0.342				
PLURALITY*ELF	-0.116	-0.218	0.535			
GOVREV				119		
GOVREV²				-585	3050	
GOVREV³				840	-4530	6900

Table 2. The relevant portions of the estimated variance-covariance matrix of the coefficients from Model 2. The robust Newey-West estimator is employed. Estimates rounded to three significant digits.

	PLURAL- ITY	ELF	PLURAL- ITY*ELF	PRES- POWER	PRES- POWER ²	PRES- POWER ³	GOV- REV	GOV-REV ²	GOV-REV ³
PLURALITY	0.172								
ELF	0.136	0.952							
PLURALITY*ELF	-0.893	-0.739	6.73						
PRESPOWER				0.0312					
PRESPOWER²				-0.00368	0.000470				
PRESPOWER³				0.000110	-0.0000150	0.000000480			
GOVREV				-0.0474	0.00363	-0.00000570	3.48		
GOVREV²				0.000564	-0.0000380	-0.000000270	-0.0442	0.000564	
GOVREV³				0.0000022	0.000000120	0.00000000260	0.000185	-0.00000240	0.0000000100

Table 3. The relevant portions of the estimated variance-covariance matrix of the coefficients from Model 3. The robust HC3 estimator is employed. Estimates rounded to three significant digits.

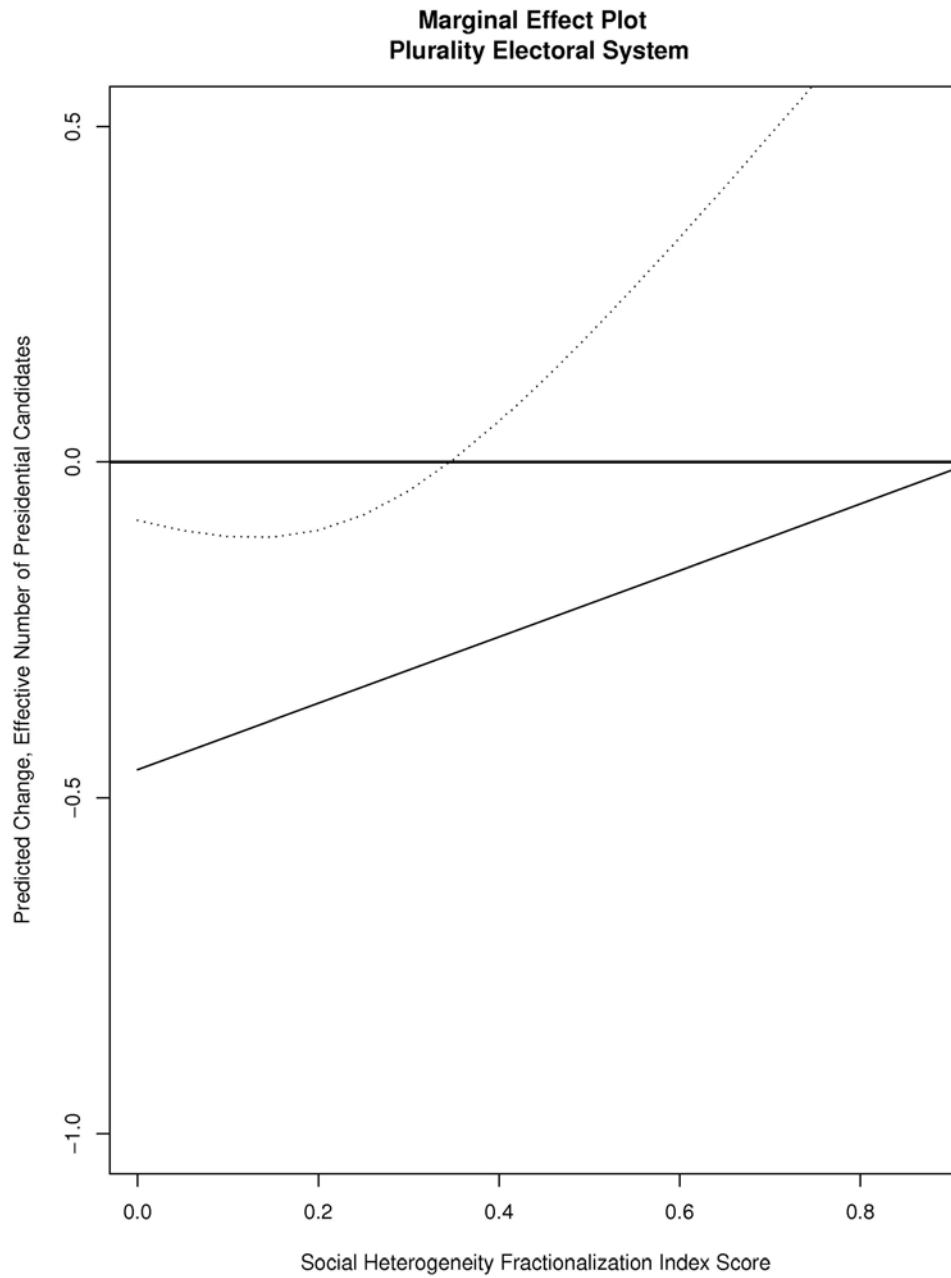


Figure 1. The estimated marginal effect of a restrictive (plurality) electoral system from Model 1 shown over the observed range of the ethno-linguistic fractionalization index (ELF) data. Upper one-sided 95% confidence intervals band the point estimates.

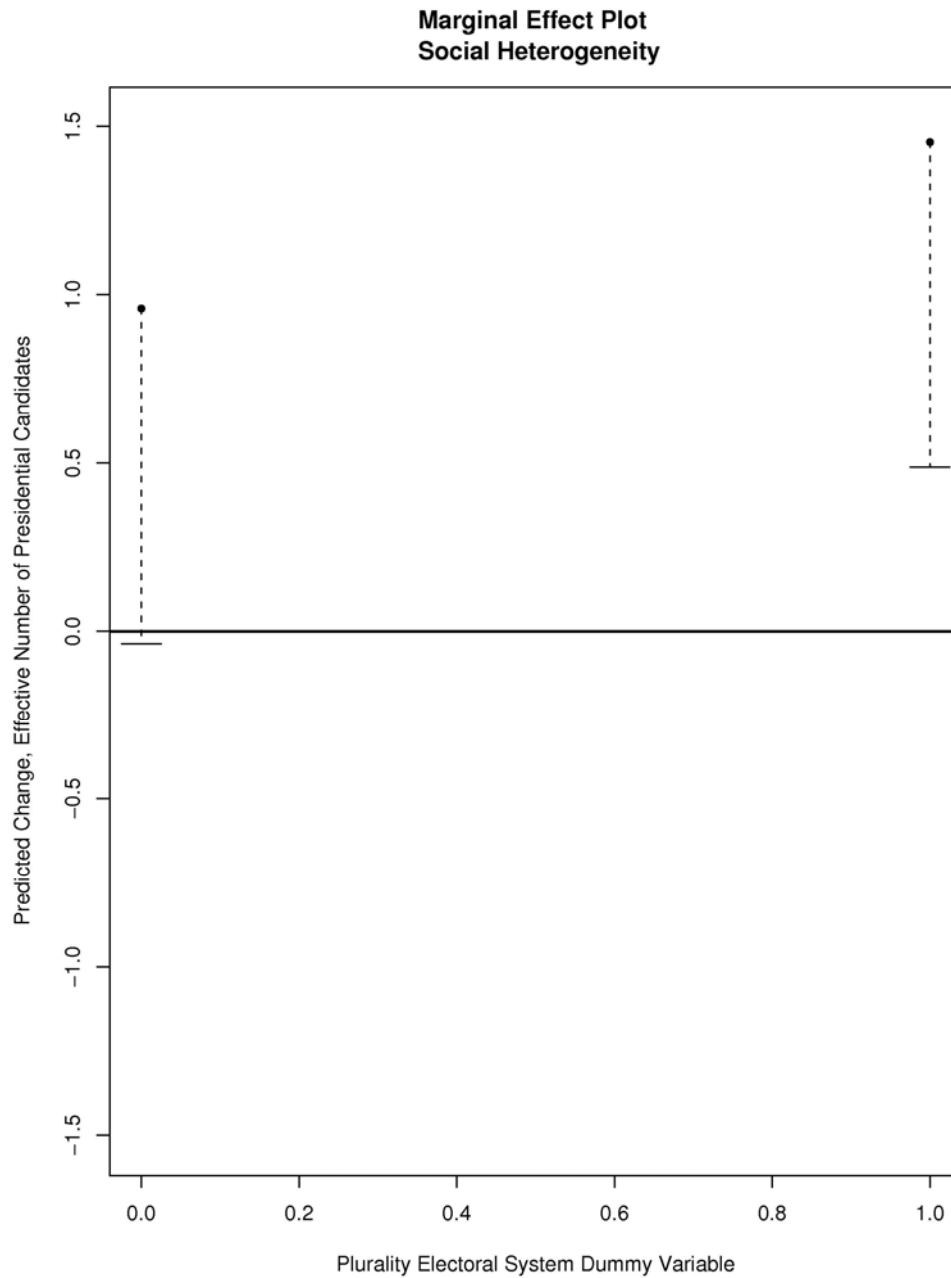


Figure 2. The estimated marginal effect of the ethno-linguistic fractionalization index (ELF) from Model 1 shown for both permissive (non-plurality; coded as ‘0’) and restrictive (plurality; coded as ‘1’) electoral systems. Lower one-sided 95% confidence intervals band the point estimates.

2.0 Models Discussed (But Not Reported) in the Original Paper

The variance-covariance matrix for any of these models is available upon request from the authors.

2.1 *Alternative Measures*

We first report the results from variants of Models 1 and 3 that employ alternative measures of our independent variables.

2.1.1 *Alternative Measures of Vertical Centralization*

Table 4 reports estimated coefficients and standard errors for a version of Model 1 that employs central government expenditure as a percentage of GDP instead of central government revenue as a percentage of GDP as its operationalization of vertical centralization. Data was obtained for this alternative operationalization in the same manner as for the original, as described in the main paper. We label this Model 4. Figure 3 plots the estimated marginal effects of vertical centralization for this model. While similar conclusions regarding both the statistical significance of the relationship and its non-linearity are obtained using this alternative measure, the estimated marginal effect of vertical centralization differs, but not more in keeping with H2. That is, in accordance with both our original findings and H2, an increase in vertical centralization is predicted to increase the number of candidates when vertical centralization is initially low to moderate and to decrease the number of candidates when it is initially moderate to high. In contrast to both H2 and our original findings, though, the marginal effect at very high levels of centralization becomes increasingly negative instead of either approaching zero as hypothesized or becoming positive as we originally found.

Table 5 reports the results from using only the World Development Indicators (WDI) data to measure our original operationalization, central government revenue as a percentage of GDP, in Model 1. Of necessity, this model, labeled Model 5, is estimated using the reduced (1970 onwards) set of cases for which this data is available. Figure 4 plots the estimated marginal effects of vertical centralization for this model. Here, too, similar conclusions regarding both the statistical significance of the relationship and its non-linearity are obtained, but the nature of the relationship is even more different. In contrast to both our original findings and H2, increasing vertical centralization is predicted to decrease the number of candidates when it is initially low to moderate and to increase the number of candidates when it is initially high.

Table 6 reports the results from a version of Model 1 that uses our original operationalization of vertical centralization, but an alternative measure constructed using only election year data. In other words, the cases for which election year data is not available are coded as missing, as opposed to the original strategy of extrapolating their values based on surrounding years (from years $t-1$, $t-2$, $t+1$, and $t+2$, in that order). There are six such cases in total that are list-wise deleted from the analysis when this alternative measure is employed. This model is labeled Model 6. Figure 5 plots the estimated marginal effects of vertical centralization for this model. Our conclusions regarding H2 are unchanged by the use of this alternative measure, as both the table and figure make clear.

Table 7 reports the results from using our original measure of vertical centralization in combination with the same reduced set of cases used to estimate Model 3, which we label Model 7. Since these cases are all elections dating from 1972 at the earliest, most of the data is from the WDI. Figure 6 plots the estimated marginal effects of vertical centralization for

this model. Not surprisingly, the results from this model resemble those from Model 5, which also confines itself to post-1970s elections and WDI data, as both the table and figure make clear. The difference is that this marginal effect curve is more parabolic, with the marginal effect again turning negative at very high initial levels of vertical centralization instead of remaining positive as in Model 5. Model 7, more than any other, illustrates the sensitivity of our conclusions regarding vertical centralization: we obtain very different results from the original Model 3 and our new Model 7, yet everything is the same in the two models except for the measure of vertical centralization.

Finally, Table 8 reports the results for a version of Model 3 that uses central government expenditure as a percentage of total government expenditures instead of central government revenue as a percentage of total government revenues as its operationalization of vertical centralization. Data was obtained for this alternative operationalization in the same manner as for the original, as described in the main paper. We label this Model 8. Figure 7 plots the estimated marginal effects of vertical centralization for this model. This alternative measure yields a largely similar estimated relationship, as the figure makes clear, but offers weaker statistical support for H2 than the original measure in Model 3: the individual vertical centralization terms no longer attain conventional levels of significance and the marginal effect of vertical centralization is no longer estimated to be significant when it is negative.

2.1.2 Alternative Measures of Horizontal Centralization

Table 9 reports estimated coefficients and standard errors for a version of Model 1 that employs presidential powers index values from extant codings of constitutions (i.e., from Shugart and Carey 1992 and Frye, Hellman and Tucker 2000) where the extant codings disagree with our own. This model is labeled as Model 9. Figure 8 plots the estimated marginal effects of horizontal centralization for this model. The same conclusions are drawn regarding H1 when using this alternative measure, as both the table and figure make clear.

Table 10 reports the results for a version of Model 1 that codes as missing the cases for which we originally extrapolated backwards our earliest coding of presidential powers. (We did this for early cases that we were unable to code ourselves, but for which (i) there were no appropriate extant codings to use instead and (ii) we had been able to code a later constitution.) We label this Model 10. Eighteen such cases that were originally included in Model 1 are accordingly list-wise deleted for Model 10. Figure 9 plots the estimated marginal effects of horizontal centralization for this model. We draw the same conclusions about H1 when this alternative measure is used, which is again clear from both the table and the figure.

Finally, Table 11 displays the estimated coefficients and standard errors for a version of Model 1 that codes as missing all cases for which we ourselves did not code the index of presidential powers. These cases are those for which we originally either extrapolated backwards a later coding or relied upon an extant coding. There are forty-three such cases originally included in Model 1 (the eighteen extrapolations discussed above plus twenty-five cases for which we used extant codings) that are accordingly list-wise deleted here. In other words, this model only uses the cases that we ourselves coded. We label this Model 11. Figure 10 plots the estimated marginal effects of horizontal centralization for this model. Yet again, we draw the same conclusions about H1 when this alternative measure is used, despite the non-trivial reduction in sample size.

2.1.3 Alternative Measures of Control Variables

Table 12 reports the results for a version of Model 1 that uses an alternative operationalization of electoral system restrictiveness. We label this model as Model 12. Specifically, this alternative measure codes the United States as possessing a permissive (non-plurality) electoral system instead of a restrictive (plurality) one. In other words, this measure classifies all electoral colleges as permissive electoral systems. Figure 11 plots the estimated marginal effects of electoral system restrictiveness (i.e., of switching to a plurality electoral formula from a non-plurality formula) over the observed range of social heterogeneity (the ethno-linguistic fractionalization index, ELF) for this model. While we again find that the interaction between electoral system restrictiveness and social heterogeneity fails to attain statistical support, we find other even less supportive results for the literature's hypotheses from this alternative measure. First, the marginal effect of switching to a restrictive (plurality) electoral system is now positive once the ethno-linguistic fractionalization index reaches moderate levels. In other words, switching to a more restrictive electoral system is nonsensically predicted to *increase* the number of presidential candidates when social heterogeneity is at least moderately high. Second, the marginal effect is less statistically significant at low levels of social heterogeneity (when it is negative as predicted).

Table 13 reports the results for a version of Model 1 that codes both the United States and Argentinian electoral colleges as restrictive (plurality); the original measure only coded the United States, of the electoral college systems, as restrictive. Specifically, the 1946, 1958, 1963, 1983, and 1989 Argentinian elections are now coded as having been held under a restrictive electoral system. We label this Model 13. Figure 12 plots the estimated marginal effects of electoral system restrictiveness (i.e., of switching to a plurality electoral formula from a non-plurality formula) over the observed range of social heterogeneity (ELF) for this model. Similar results are obtained and hence similar conclusions are drawn to those originally reported using this alternative measure.

In Table 14, we report the results for a version of Model 1 that utilizes the index of ethnic fractionalization based on Fearon's (2003) data set of ethnic groups and population shares instead of ELF. We label this Model 14. However, estimating this model requires the additional list-wise deletion of all Icelandic elections from the data set that was used to estimate the original Model 1, since the Fearon data set is missing data on this country. Consequently, in the same table, we also report results from estimating a version of Model 1 that continues to employ ELF as the measure of social heterogeneity but which is estimated using the same reduced (i.e., minus the Icelandic cases) set of cases. This is labeled as Model 15. Figures 13 and 14 plot the estimated marginal effects of all four independent variables for Models 14 and 15, respectively. The models lead to similar conclusions regarding horizontal centralization (H1). Regarding vertical centralization (H2), employing the alternative Fearon measure of social heterogeneity eliminates the predicted positive marginal effect of an increase at high initial levels relative to the original ELF measure, but otherwise leads to similar conclusions. Our focus here is upon the sensitivity of our conclusions regarding electoral system restrictiveness, though. Neither of the models provides statistical support for the hypothesized interaction between electoral system restrictiveness and social heterogeneity, the same conclusion that we drew using the original models. However, in Model 14, the Fearon measure yields a nonsensical positive marginal effect of electoral system restrictiveness at low values of ethnic fractionalization, which means that switching to a restrictive electoral system is predicted to increase the number of presidential candidates when social heterogeneity is low. Conversely, using the original ELF measure of social

heterogeneity and the reduced set of Model 1 cases (Model 15) yields a marginal effect that is always negative, in accordance with both the literature's hypotheses and the findings of the original Model 1. Further, the marginal effect of electoral system restrictiveness attains conventional levels of statistical significance only at moderately high values of ethnic fractionalization when the alternative Fearon measure is employed in Model 14, and is decreasing in social heterogeneity (i.e., has a negative slope). These findings are more commensurate with the literature's hypotheses than the original findings from Model 1, where the marginal effects were only significant at low levels of social heterogeneity and increasing in social heterogeneity. Conversely, eliminating the Icelandic cases but still employing ELF in Model 1 (Model 15) keeps the marginal effect of electoral system restrictiveness from obtaining statistical support, in contrast to the original Model 1.

Finally, given the differing results for vertical centralization obtained using the alternate measure of social heterogeneity, we also report in Table 14 the results for a version of Model 3 that utilizes the Fearon measure of social heterogeneity, which we label Model 16. (We should additionally report a version of this model with the Icelandic cases dropped for comparison, but do not do so in the interests of space.) Figure 15 plots the estimated marginal effect of vertical centralization for this model. Using the theoretically preferred measure of vertical centralization from Model 3 in combination with the Fearon measure of social heterogeneity, the estimated marginal effects of vertical centralization and their statistical significance are similar to what we originally obtained from Model 3; the only difference is that the individual central government revenue terms fall just shy of attaining conventional levels of significance, which is not surprising in light of the reduced sample size. Hence, our conclusions about electoral system restrictiveness are sensitive to the measure of social heterogeneity employed, as well as to the inclusion or exclusion of the Icelandic cases. However, in light of these mixed results, our use of ELF instead of Fearon's data as a measure of social heterogeneity does not seem to account for the divergence of our findings from Golder's (2006). We also note minor sensitivity regarding our conclusions about vertical centralization.

Table 15 contains a variant of Model 1 that controls for OECD membership, loosely defined, instead of for region. This is done by including a dummy variable for pre-1990 OECD members (plus Israel) and eliminating the original regional dummy variables. We label this Model 17. Figure 16 plots the estimated marginal effects for all four independent variables for this model. There is no change in any of our conclusions. We note that the coefficient on the OECD dummy variable is negative, which means that more coordination is predicted in presidential elections in OECD (i.e., advanced industrial and relatively consolidated) democracies relative to non-OECD ones. This is in accordance with our expectations.

2.2 *Alternative Cases*

We next report the results from variants of Models 1 and 3 that employ alternative sets of cases.

In Table 16, we report the results for Model 1 after dropping the two Israeli elections, which we label Model 18. Figure 17 plots the estimated marginal effects of all four independent variables for this model. There is no change in any of our conclusions.

Table 17 contains a variant of Model 1 that includes fused electoral systems in the analysis, instead of omitting these cases as in the original Model 1. We label this Model 19. Figure 18 plots the estimated marginal effects for all four independent variables for this model. There is no change in our conclusions about horizontal and vertical centralization

(H1 and H2). However, we note that including these cases yields findings regarding both electoral system restrictiveness and social heterogeneity that are more consistent with the literature's hypotheses, as well as more consistent with Golder's (2006) findings (who did *not* eliminate fused electoral systems). The interaction between electoral system restrictiveness and social heterogeneity remains statistically insignificant, but now the marginal effect of switching to a restrictive (plurality) electoral system is statistically significant for *all* values of social heterogeneity. (Recall that with the fused electoral system cases omitted from the analysis, the marginal effect was surprisingly only significant at low levels of social heterogeneity.) The marginal effect now also increases with social heterogeneity (i.e., has a negative slope), whereas previously it surprisingly increased with social heterogeneity. Similarly, the marginal effect of social heterogeneity is now statistically significant for permissive (non-plurality) electoral systems and insignificant for restrictive (plurality) ones, in keeping with the literature's hypothesis and contrary to our original findings. Hence, our decision to eliminate fused electoral systems from the analysis at least partially (but only partially) accounts for the divergence between our findings and Golder's.

Table 18 contains a variant of Model 1 that eliminates the twenty-five semi-direct elections (i.e., those elections where an electoral college is employed) from the analysis. We label this Model 20. Figure 19 plots the estimated marginal effects for all four independent variables for this model. Our conclusions regarding horizontal centralization (H1) are unchanged with the exception of the significance of some of the marginal effects: at very high initial levels of presidential powers, the marginal effect now fails to attain conventional levels of significance, whereas originally (with semi-direct elections included) it did attain conventional levels of significance. This may be at least partially explained by the reduction in the sample size. Our conclusions regarding vertical centralization (H2) are more sensitive, in that central government revenue as a percentage of GDP is no longer predicted to have a negative effect at moderate initial levels. Finally, results less favorable to the literature's hypotheses are obtained regarding electoral system restrictiveness: the estimated marginal effect is similar to that originally obtained, but it now never attains conventional levels of significance. Conversely, social heterogeneity is now statistically significant for both permissive and restrictive electoral systems instead of only for restrictive systems, a finding arguably more consistent with the literature's hypotheses. Hence, our decision to include semi-direct elections in the analysis may also partially account for some of the divergence between our findings and Golder's, but seemingly less so than our decision to exclude fused electoral systems, as discussed above.

In light of the observed sensitivity of our conclusions about vertical centralization to the inclusion of semi-direct elections in Model 1 (Model 20), Table 18 also reports the results from a model that eliminates the semi-direct elections from the original Model 3, which uses the theoretically preferred measure of vertical centralization. We label this Model 21. Figure 20 shows the estimated marginal effect of vertical centralization for this model. From this figure, we can see that the estimated marginal effects and their statistical significance are similar to what we originally obtained from Model 3. The only differences are two-fold: first, the individual central government revenue terms fall just shy of attaining conventional levels of significance and second, the marginal effect is no longer significant at moderate initial levels of central government revenue (when it is negative). But this is not surprising given the reduced sample size. Conclusions about vertical centralization accordingly do seem to be somewhat, but not overly, sensitive to the inclusion or exclusion of semi-direct elections.

Table 19 reports the results for three variants of Model 1, each of which eliminates a set of less democratically consolidated countries from the analysis. In Model 22, we eliminate countries with only one election in the pre-list-wise deletion (LWD) data set; in Model 23, countries with only one election in the post-LWD data set; and in Model 24, African as well as Pacific/Caribbean island countries. Figures 21, 22, and 23 display the respective estimated marginal effects for all four independent variables. Our conclusions about horizontal centralization (H1) are unchanged by using these alternative set of cases. However, our conclusions about vertical centralization are sensitive (H2): vertical centralization only barely (Model 22) or never (Models 23 and 24) has a negative marginal effect after eliminating the various sets of less democratically consolidated cases. However, surprisingly enough, the marginal effect of vertical centralization at low initial levels is now estimated to be statistically significant (all three models). Our conclusions about electoral system restrictiveness remain unchanged. More favorable results regarding social heterogeneity are obtained from Models 22 and 24, however, in that its marginal effect is now estimated to be significant for permissive (non-plurality) electoral systems. We note that these less democratically consolidated countries are eliminated from Model 3 by data availability: neither African nor Pacific/Caribbean island countries are included in the analysis, and all countries except for Kyrgyzstan, Moldova, Peru, and Slovakia appear at least twice. Because only the latter four cases are at issue, we do not estimate a version of Model 3 that eliminates them.

Tables 20 and 21 together present the results for six models that eliminate cases with high values on the index of presidential powers: Model 25, Chile 1970; Model 26, all Chilean elections; Model 27, Argentina 1995 and 1999; Model 28, all Colombian elections; Model 29, all Brazilian elections; and Model 30, all Philippines elections. Figures 24 through 29 display the estimated marginal effects for all four independent variables, respectively. There is no change in any of our conclusions.

Last but not least, Table 22 presents the results from estimating Model 1 using a multiply-imputed instead of list-wise deleted data set. We label this Model 31. The estimates appearing in the table were produced as follows (King, Honaker, Joseph and Scheve 2001, 53): five multiply imputed data sets were constructed using Amelia II (Honaker and King N.d.; Honaker, King, and Blackwell N.d.); the model was estimated using each of these data sets; each point estimate was calculated by averaging across the five separate estimates; and each estimated standard error was calculated by taking the average of the five separate estimates plus the variance in the point estimates across the five data sets, multiplied by a factor that corrects for bias. Focusing solely upon the magnitude, sign, and statistical significance of the coefficients, similar results are obtained from estimating Model 1 on the multiply imputed and list-wise deleted data sets. The only differences worth noting pertain to the control variables: when using the multiply imputed data sets, the ELF main effect term is of greater magnitude and consequently attains conventional levels of statistical significance, and the interaction term between electoral system restrictiveness and social heterogeneity is of much smaller magnitude. Further, we note that the coefficients on the Eastern Europe and African dummy variables turn negative when the multiply imputed data sets are used.

2.3 Alternative Model Specifications

Finally, we report the results for different model specifications that build upon the original Model 1.

Table 23 reports the results for a version of Model 1 that additionally controls for transitional elections. In other words, we include in Model 1 a dummy variable for elections that are the first presidential elections since either independence or a transition to democracy. We label this Model 32. Figure 30 displays the estimated marginal effects for all four independent variables for this model. There is no change in any of our conclusions. We note that the transitional election dummy variable has a negative sign, suggesting that transitional elections have fewer presidential candidates than non-transitional elections, but is not statistically significant.

Table 24 reports the results for three stripped-down versions of Model 1. Model 33 drops the horizontal and vertical centralization terms from the model; Model 34 drops the regional control variables; and Model 35 drops all of these terms (leaving only the electoral system and social heterogeneity terms in the model). All of these models are estimated using the same set of cases as the original Model 1, though. Note that the latter model is a near-replica of Golder's (2006), although it is estimated using a different set of cases and employs different measures. Although the interaction term between electoral system restrictiveness and social heterogeneity remains insignificant in all of the alternative specifications, with only the electoral system and social heterogeneity terms in the model (Model 35), the sign on the interaction term turns negative, a result more in keeping with the literature's hypotheses. Hence, our decision to include regional controls as well as vertical and horizontal centralization in the analysis may also partially account for some of the divergence between our findings and Golder's.

In Table 25, we present a final alternative model specification, which tests for the most basic form of a statistical interaction between horizontal and vertical centralization. It does this by adding to Model 1 an interaction between the first order horizontal and vertical centralization terms. We label this Model 36. The interaction term only barely falls short of attaining conventional levels of statistical significance, suggesting that the effect of horizontal centralization on the number of presidential candidates should be viewed as conditional upon vertical centralization, and vice versa. Clearly this as well as more complicated interaction models should be explored by future work.

	<i>Model 4</i>
Intercept	1.28* (0.755)
PLURALITY	-0.376 (0.236)
ELF	1.16* (0.619)
PLURALITY*ELF	0.339 (0.750)
PRESPOWER	0.360*** (0.113)
PRESPOWER²	-0.0381*** (0.0125)
PRESPOWER³	0.00106*** (0.000372)
GOVEXP	1.97 (6.39)
GOVEXP²	1.05 (20.5)
GOVEXP³	-5.78 (18.8)
ASIA	0.0323 (0.0386)
LAMER	0.0680*** (0.244)
EEUROPE	0.0262 (0.291)
AFRICA	0.176 (0.551)
OTHER	-0.830* (0.457)
N	215
Root MSE	1.07
R²	0.174

Table 4. Coefficient estimates and Newey-West (1987) robust standard errors for an alternative measure of vertical centralization, central government expenditure as a percentage of GDP, GOVEXP, in Model 1 (Model 4). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

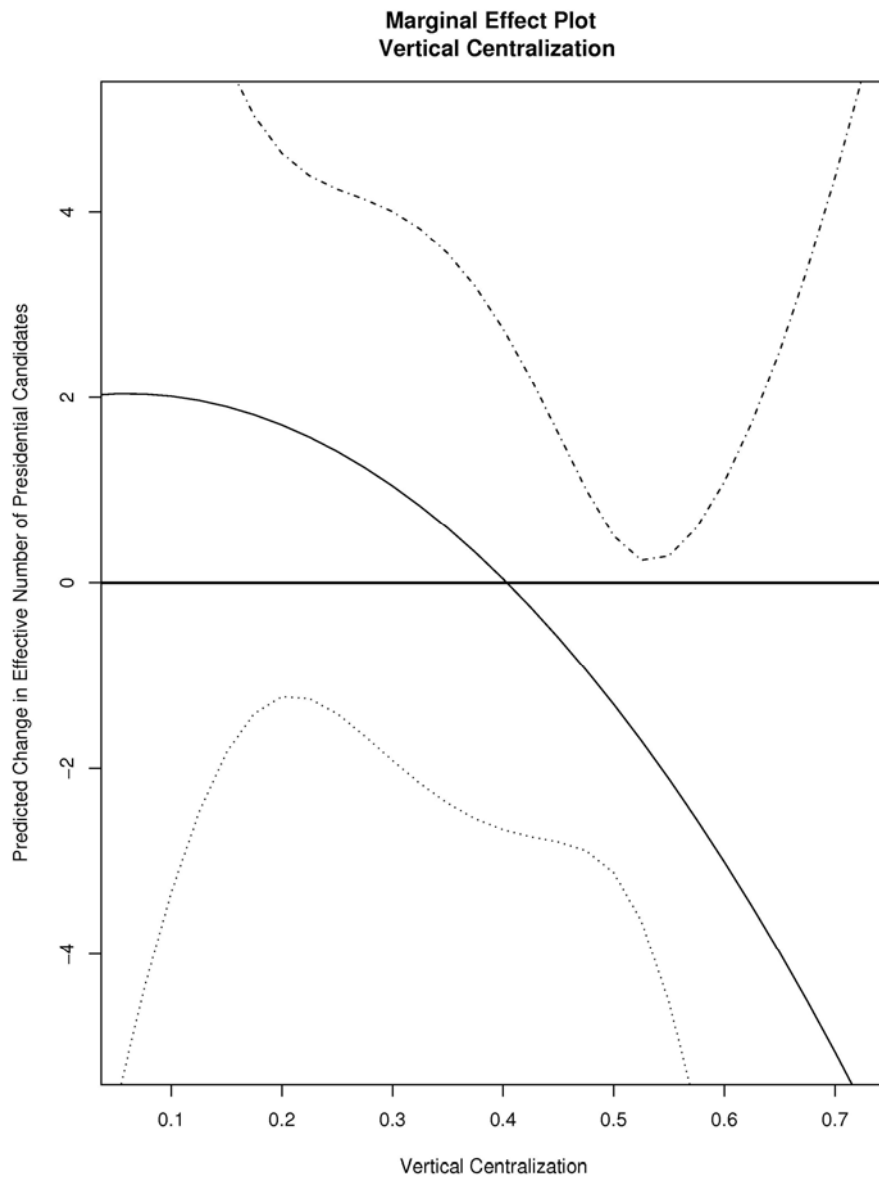


Figure 3. The estimated marginal effects of vertical centralization from Model 4 shown over the observed range of the data. Relative to Model 1, Model 4 employs an alternative measure of vertical centralization: central government expenditures as a percentage of GDP. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	<i>Model 5</i>
Intercept	3.55* (1.87)
PLURALITY	-0.627** (0.295)
ELF	0.834 (0.718)
PLURALITY*ELF	1.36 (1.18)
PRESPOWER	0.366** (0.167)
PRESPOWER²	-0.0404** (0.0185)
PRESPOWER³	0.00114** (0.000561)
GOVREV	-13.9 (26.9)
GOVREV²	34.5 (117.5)
GOVREV³	-23.8 (157)
ASIA	0.200 (0.609)
LAMER	0.536 (0.326)
EEUROPE	0.0748 (0.342)
AFRICA	-0.216 (0.631)
OTHER	-2.06*** (0.693)
N	146
Root MSE	1.12
R²	0.201

Table 5. Coefficient estimates and MacKinnon-White (1985) HC3 robust standard errors for an alternative measure of vertical centralization, central government revenues as a percentage of GDP based solely on World Development Indicators data, in Model 1 (Model 5). Estimation is conducted using the reduced set of cases for which this data is available. Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

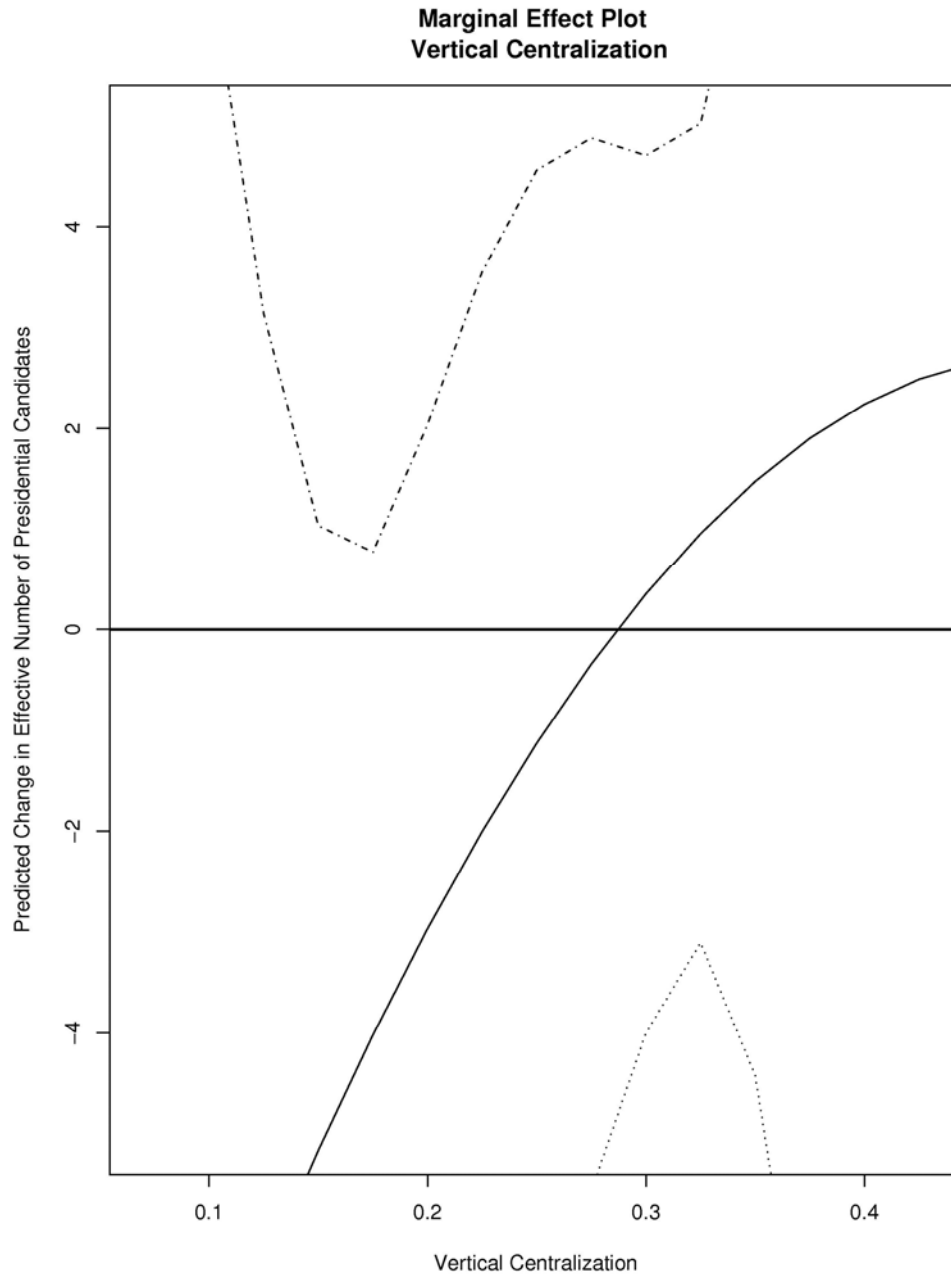


Figure 4. The estimated marginal effects of vertical centralization from Model 5 shown over the observed range of the data. Relative to Model 1, Model 5 employs an alternative measure of vertical centralization: central government revenue as a percentage of GDP based solely on World Development Indicators data, with estimation conducted using the reduced set of cases for which this data is available. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	<i>Model 6</i>
Intercept	1.32* (0.755)
PLURALITY	-0.394* (0.227)
ELF	0.987 (0.618)
PLURALITY*ELF	0.392 (0.715)
PRESPOWER	0.390*** (0.117)
PRESPOWER²	-0.0439*** (0.0130)
PRESPOWER³	0.00126*** (0.000387)
GOVREV	8.09 (10.6)
GOVREV²	-35.7 (53.1)
GOVREV³	48.9 (79.3)
ASIA	0.0401 (0.390)
LAMER	0.608** (0.247)
EEUROPE	-0.177 (0.290)
AFRICA	0.0133 (0.554)
OTHER	-1.21*** (0.411)
N	210
Root MSE	1.07
R²	0.156

Table 6. Coefficient estimates and Newey-West (1987) robust standard errors for an alternative measure of vertical centralization, our original measure consisting of only election year data, in Model 1 (Model 6). Estimation is conducted using the slightly reduced set of cases for which this measure is available. Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

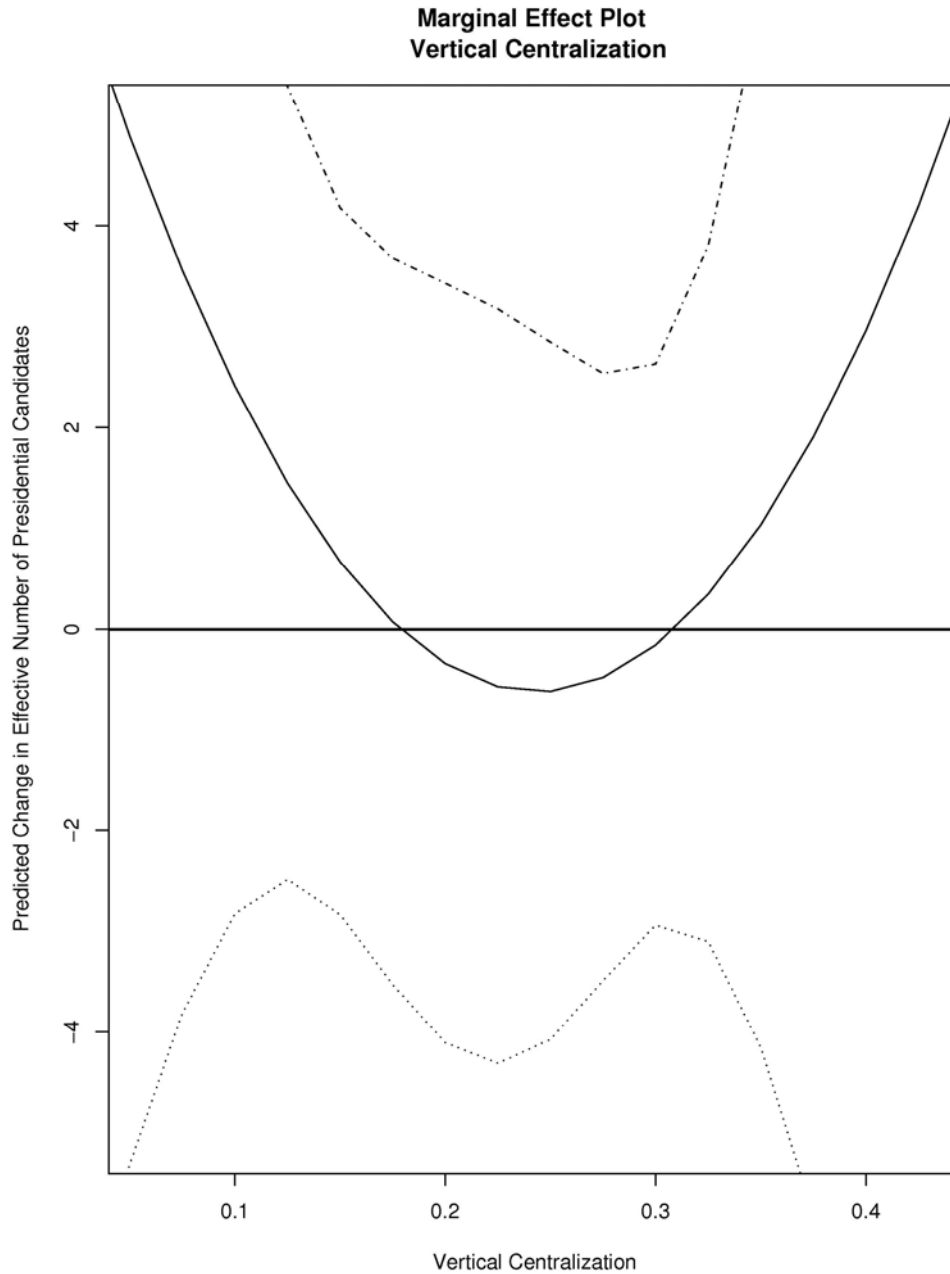


Figure 5. The estimated marginal effects of vertical centralization from Model 6 shown over the observed range of the data. Relative to Model 1, Model 6 employs an alternative measure of vertical centralization: central government revenue as a percentage of GDP using solely on election year data, with estimation conducted using a reduced set of cases. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	<i>Model 7</i>
Intercept	2.49 (2.25)
PLURALITY	-0.707* (0.420)
ELF	1.82* (1.01)
PLURALITY*ELF	2.25 (2.29)
PRESPOWER	0.394** (0.185)
PRESPOWER²	-0.0453** (0.0217)
PRESPOWER³	0.00134** (0.000661)
GOVREV	-14.1 (31.3)
GOVREV²	57.3 (136)
GOVREV³	-63.2 (181)
ASIA	-0.710 (0.984)
LAMER	0.772 (0.488)
EEUROPE	-0.139 (0.390)
AFRICA	
OTHER	
N	102
Root MSE	1.09
R²	0.215

Table 7. Coefficient estimates and MacKinnon-White (1985) HC3 robust standard errors for the original measure of vertical centralization in combination with the reduced set of cases used to estimate Model 3 (Model 7). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

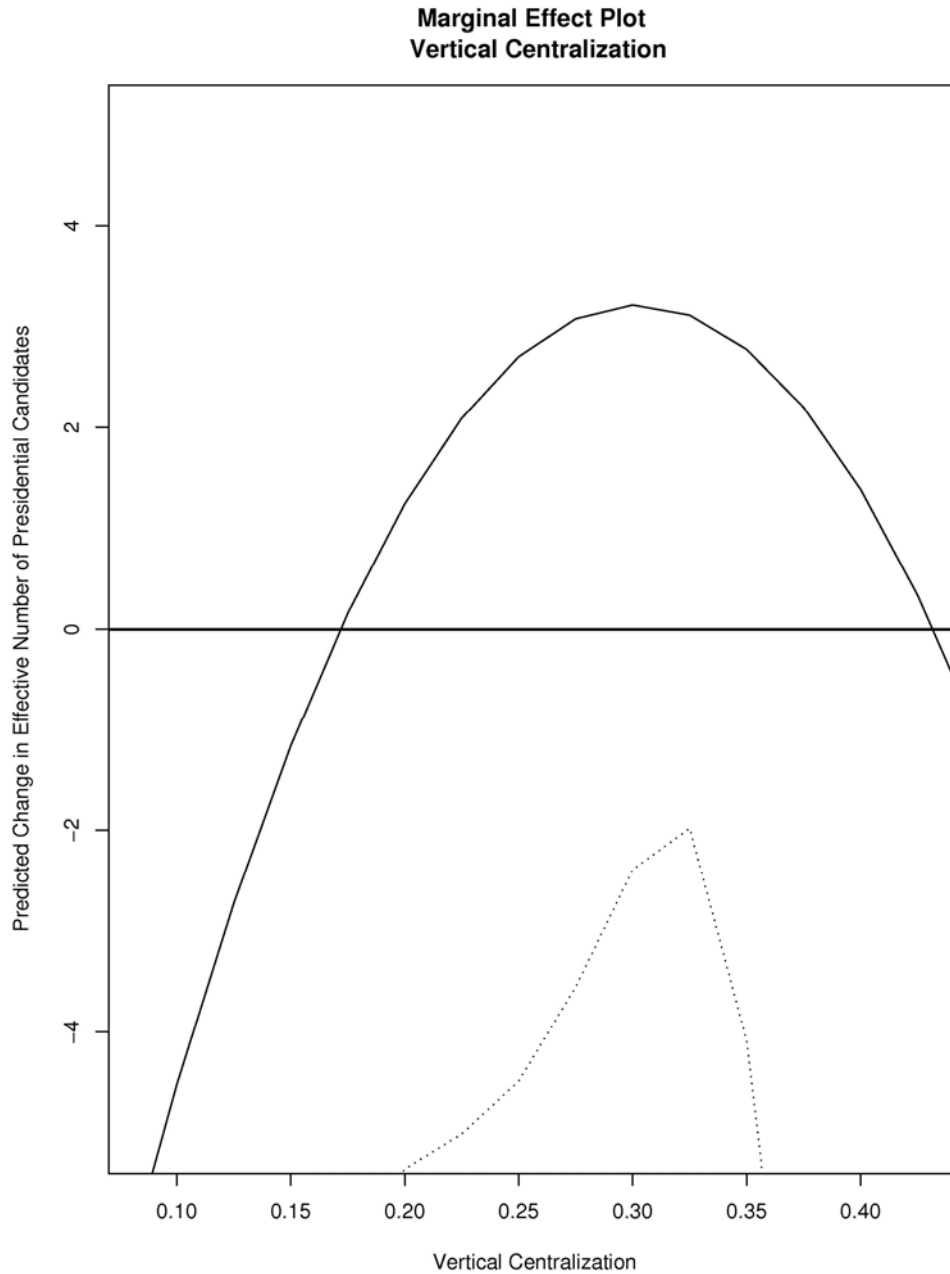


Figure 6. The estimated marginal effects of vertical centralization from Model 7 shown over the observed range of the data. Relative to Model 1, Model 7 employs the same measure, central government revenue as a percentage of GDP, but an alternative set of cases: the reduced set of cases used to estimate Model 3. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	<i>Model 8</i>
Intercept	-27.3 (29.5)
PLURALITY	-0.857* (0.473)
ELF	1.63* (0.982)
PLURALITY*ELF	3.44 (0.283)
PRESPOWER	0.472** (0.186)
PRESPOWER²	-0.0551** (0.00681)
PRESPOWER³	0.00163** (0.000681)
GOVEXP	1.11 (1.20)
GOVEXP²	-0.0140 (0.0162)
GOVEXP³	0.0000581 (0.0000719)
ASIA	-1.19 (0.844)
LAMER	0.660 (0.506)
EEUROPE	-0.150 (0.388)
AFRICA	
OTHER	
N	101
Root MSE	1.08
R²	0.208

Table 8. Coefficient estimates and MacKinnon-White (1985) HC3 robust standard errors for a version of Model 3 that employs an alternative operationalization of vertical centralization: central government expenditures as a percentage of total government expenditures, GOVEXP (Model 8). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

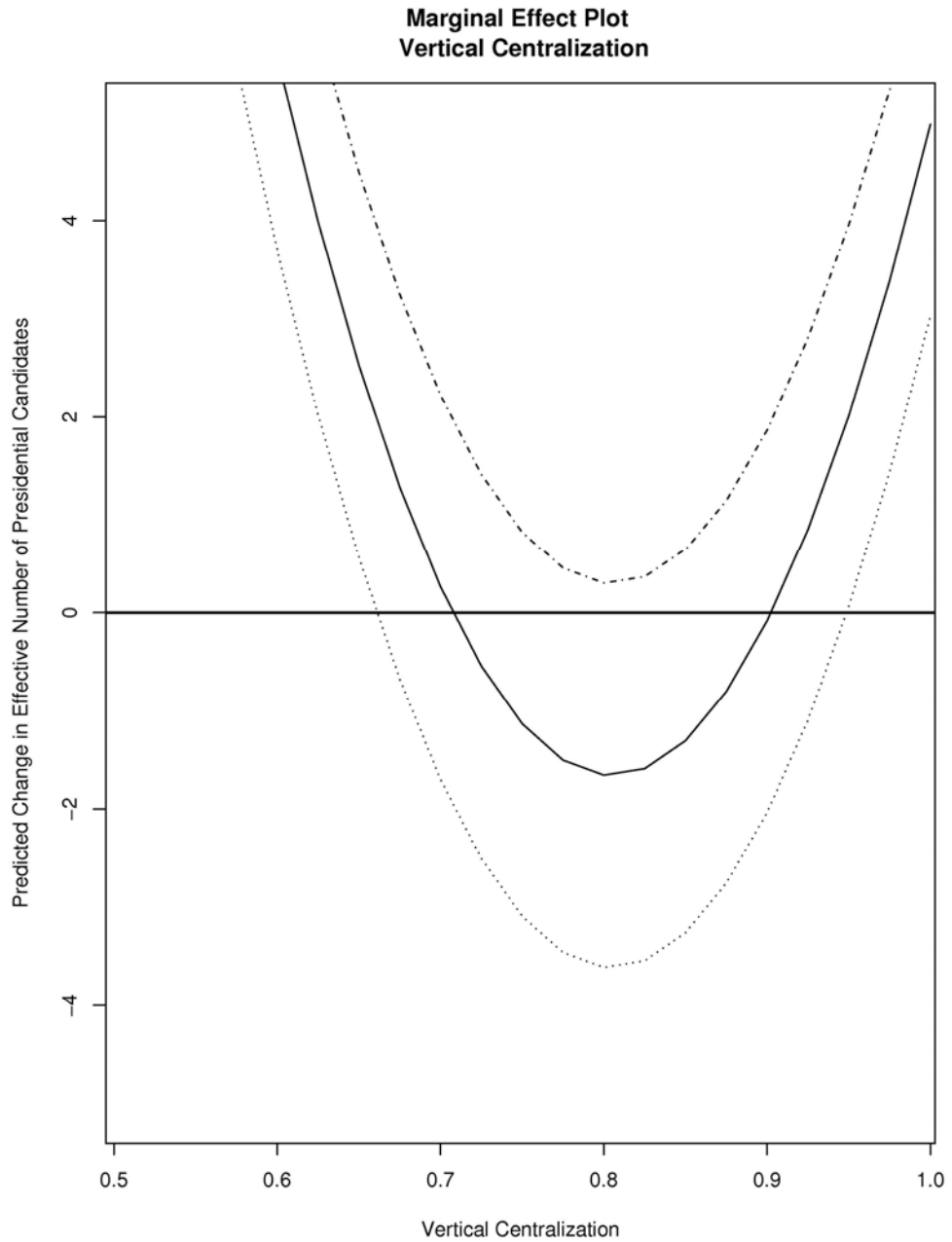


Figure 7. The estimated marginal effects of vertical centralization from Model 8 shown over the observed range of the data. Relative to Model 3, Model 8 employs an alternative measure: central government expenditures as a percentage of total government expenditures. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	<i>Model 9</i>
Intercept	1.25* (0.747)
PLURALITY	-0.472** (0.222)
ELF	1.00* (0.605)
PLURALITY*ELF	0.500 (0.708)
PRESPOWER	0.366*** (0.117)
PRESPOWER²	-0.0401*** (0.0128)
PRESPOWER³	0.00114*** (0.000381)
GOVREV	8.70 (10.9)
GOVREV²	-36.7 (54.6)
GOVREV³	47.7 (81.8)
ASIA	-0.0629 (0.374)
LAMER	0.0566** (0.252)
EEUROPE	0.0999 (0.288)
AFRICA	0.0198 (0.531)
OTHER	-0.489 (0.414)
N	216
Root MSE	1.07
R²	0.162

Table 9. Coefficient estimates and Newey-West (1987) robust standard errors for a version of Model 1 that employs an alternative measure of horizontal centralization: one that substitutes extant values of presidential powers for ours where they differ (Model 9). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

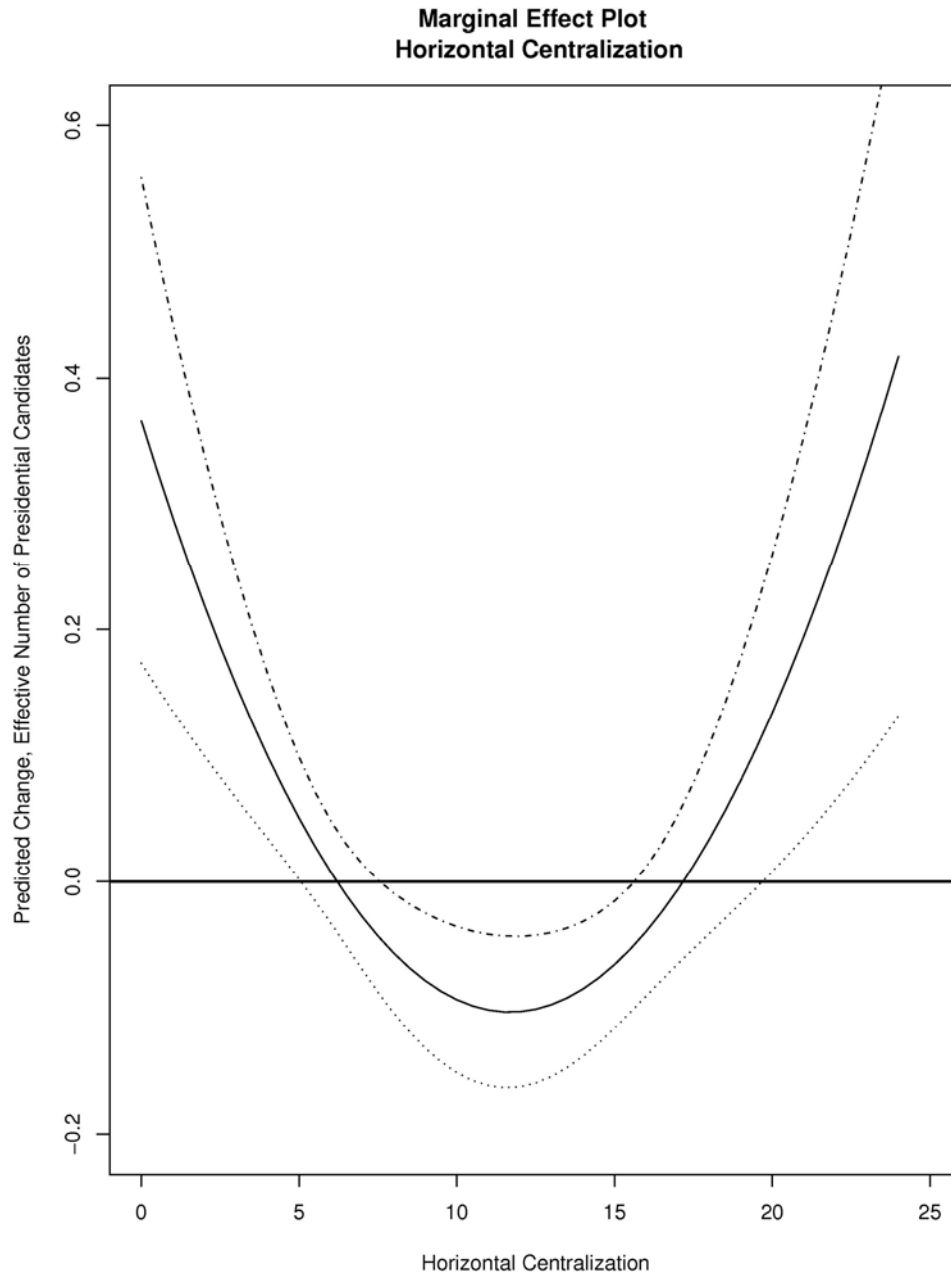


Figure 8. The estimated marginal effects of horizontal centralization from Model 9. Relative to Model 1, Model 9 employs an alternative measure of horizontal centralization: one that substitutes extant values of presidential powers for ours where they differ. The estimated marginal effects are shown over the observed range of the respective data. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	<i>Model 10</i>
Intercept	1.00 (0.851)
PLURALITY	-0.394* (0.235)
ELF	1.30* (0.711)
PLURALITY*ELF	0.530 (0.791)
PRESPOWER	0.402*** (0.122)
PRESPOWER²	-0.0455*** (0.0138)
PRESPOWER³	0.00129*** (0.000409)
GOVREV	10.8 (11.9)
GOVREV²	-43.9 (57.6)
GOVREV³	55.6 (84.7)
ASIA	0.0307 (0.421)
LAMER	0.761*** (0.280)
EEUROPE	0.0479 (0.296)
AFRICA	-0.194 (0.606)
OTHER	-1.00** (0.456)
N	198
Root MSE	1.09
R²	0.182

Table 10. Coefficient estimates and Newey-West robust standard errors for an alternative measure of horizontal centralization: one that codes as missing and hence deletes the cases for which we extrapolated backwards our earliest codings of presidential powers. (Model 10). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

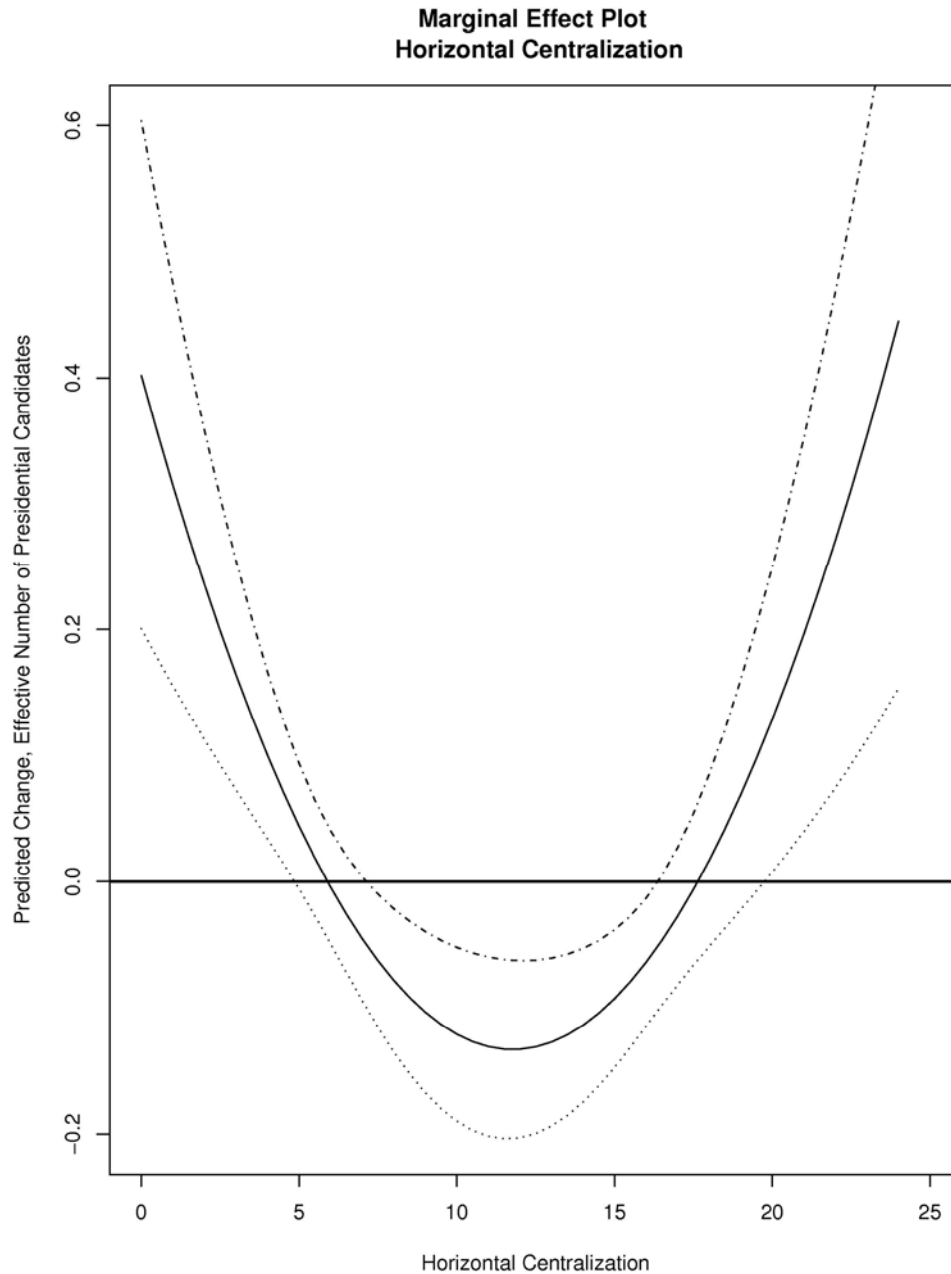


Figure 9. The estimated marginal effects of horizontal centralization from Model 10. Relative to Model 1, Model 10 employs an alternative measure of horizontal centralization: one that codes as missing and hence deletes the cases for which we extrapolated backwards our earliest codings of presidential powers. The estimated marginal effects are shown over the observed range of the respective data. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	<i>Model 11</i>
Intercept	0.423 (1.10)
PLURALITY	-0.437 (0.307)
ELF	1.47* (0.775)
PLURALITY*ELF	0.271 (1.03)
PRESPOWER	0.463*** (0.135)
PRESPOWER²	-0.0537*** (0.0161)
PRESPOWER³	0.00158*** (0.000519)
GOVREV	18.0 (14.0)
GOVREV²	-73.2 (64.2)
GOVREV³	90.5 (91.7)
ASIA	0.132 (0.488)
LAMER	0.690** (0.302)
EEUROPE	0.0580 (0.303)
AFRICA	-0.349 (0.755)
OTHER	-0.901* (0.542)
N	173
Root MSE	1.13
R²	0.194

Table 11. Coefficient estimates and Newey-West robust standard errors for an alternative measure of horizontal centralization: one that employs only the cases for which we ourselves coded the index of presidential powers. (Model 11). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

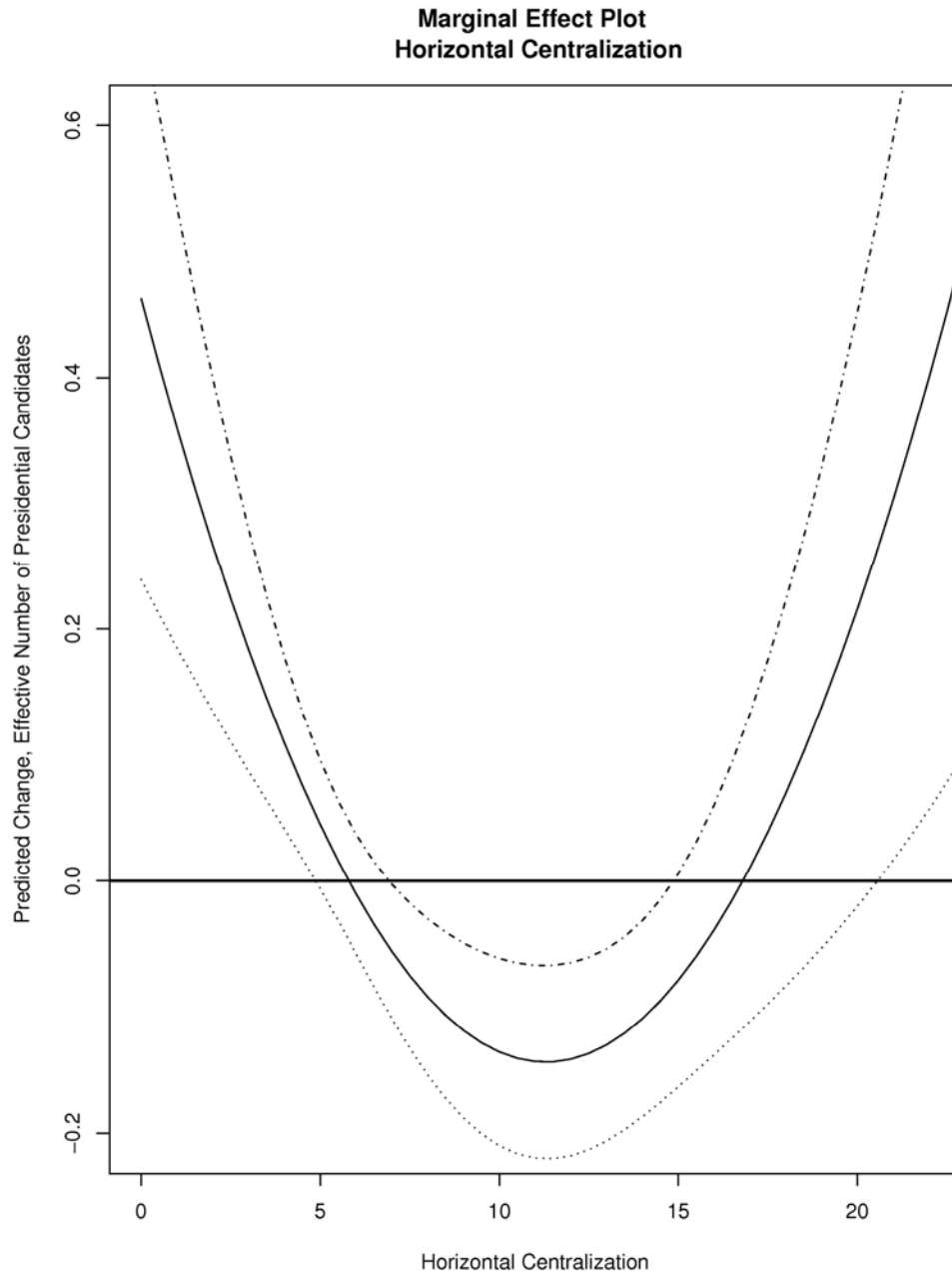


Figure 10. The estimated marginal effects of horizontal centralization from Model 11. Relative to Model 1, Model 11 employs an alternative measure of horizontal centralization: one that codes as missing and hence deletes the cases for which we ourselves did not code the index of presidential powers. The estimated marginal effects are shown over the observed range of the respective data. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	<i>Model 12</i>
Intercept	1.21 (0.774)
PLURALITY	-0.381* (0.225)
ELF	0.873 (0.592)
PLURALITY*ELF	0.732 (0.712)
PRESPOWER	0.388*** (0.116)
PRESPOWER²	-0.0433*** (0.0128)
PRESPOWER³	0.00123*** (0.000380)
GOVREV	8.21 (11.0)
GOVREV²	-33.3 (54.1)
GOVREV³	42.3 (80.3)
ASIA	0.0138 (0.399)
LAMER	0.679*** (0.237)
EEUROPE	0.109 (0.289)
AFRICA	0.146 (0.540)
OTHER	-1.04 (0.414)
N	216
Root MSE	1.08
R²	0.158

Table 12. Coefficient estimates and Newey-West robust standard errors for an alternative measure of electoral system restrictiveness, where the United States is coded as possessing a permissive (non-plurality) electoral system (Model 12). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

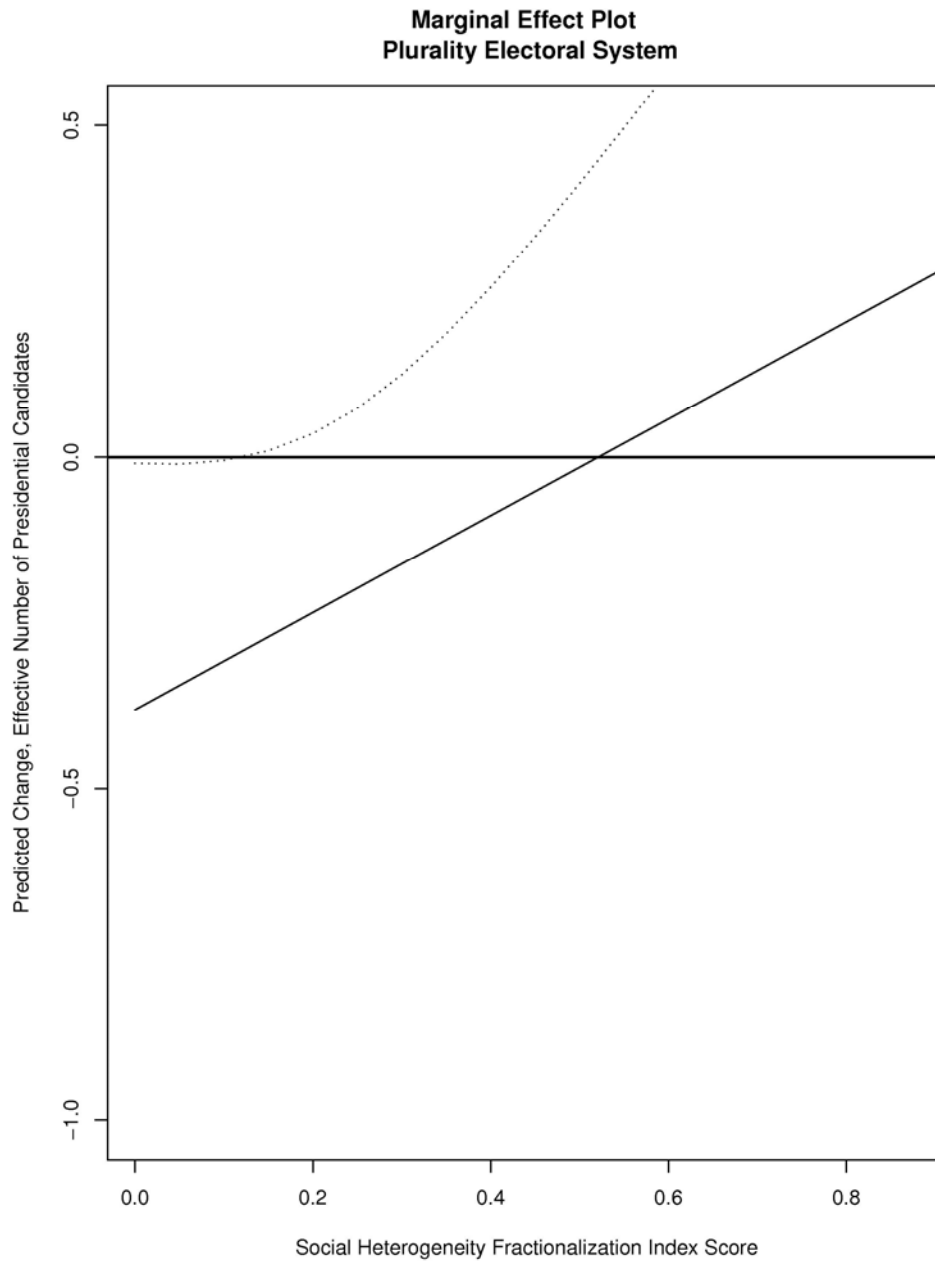


Figure 11. The estimated marginal effects of electoral system restrictiveness from Model 12. Relative to Model 1, Model 12 employs an alternative measure of electoral system restrictiveness: the United States is coded as possessing a permissive (non-plurality) electoral system. The estimated marginal effects are shown over the observed range of the social heterogeneity (ethno-linguistic fractionalization index, ELF) data. One-sided upper 95% confidence intervals band the point estimates.

	<i>Model 13</i>
Intercept	1.30* (0.759)
PLURALITY	-0.478** (0.227)
ELF	0.954 (0.600)
PLURALITY*ELF	0.493 (0.702)
PRESPOWER	0.371*** (0.114)
PRESPOWER²	-0.0400*** (0.000375)
PRESPOWER³	0.00112*** (0.000375)
GOVREV	8.41 (10.7)
GOVREV²	-37.3 (53.9)
GOVREV³	49.7 (80.8)
ASIA	-0.0177 (0.386)
LAMER	0.584** (0.249)
EEUROPE	0.0602 (0.291)
AFRICA	0.0441 (0.518)
OTHER	-1.11*** (0.426)
N	216
Root MSE	1.07
R²	0.167

Table 13. Coefficient estimates and Newey-West robust standard errors for an alternative measure of electoral system restrictiveness, where both the United States and Argentinian electoral college elections are coded as possessing restrictive (plurality) electoral systems (Model 13). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

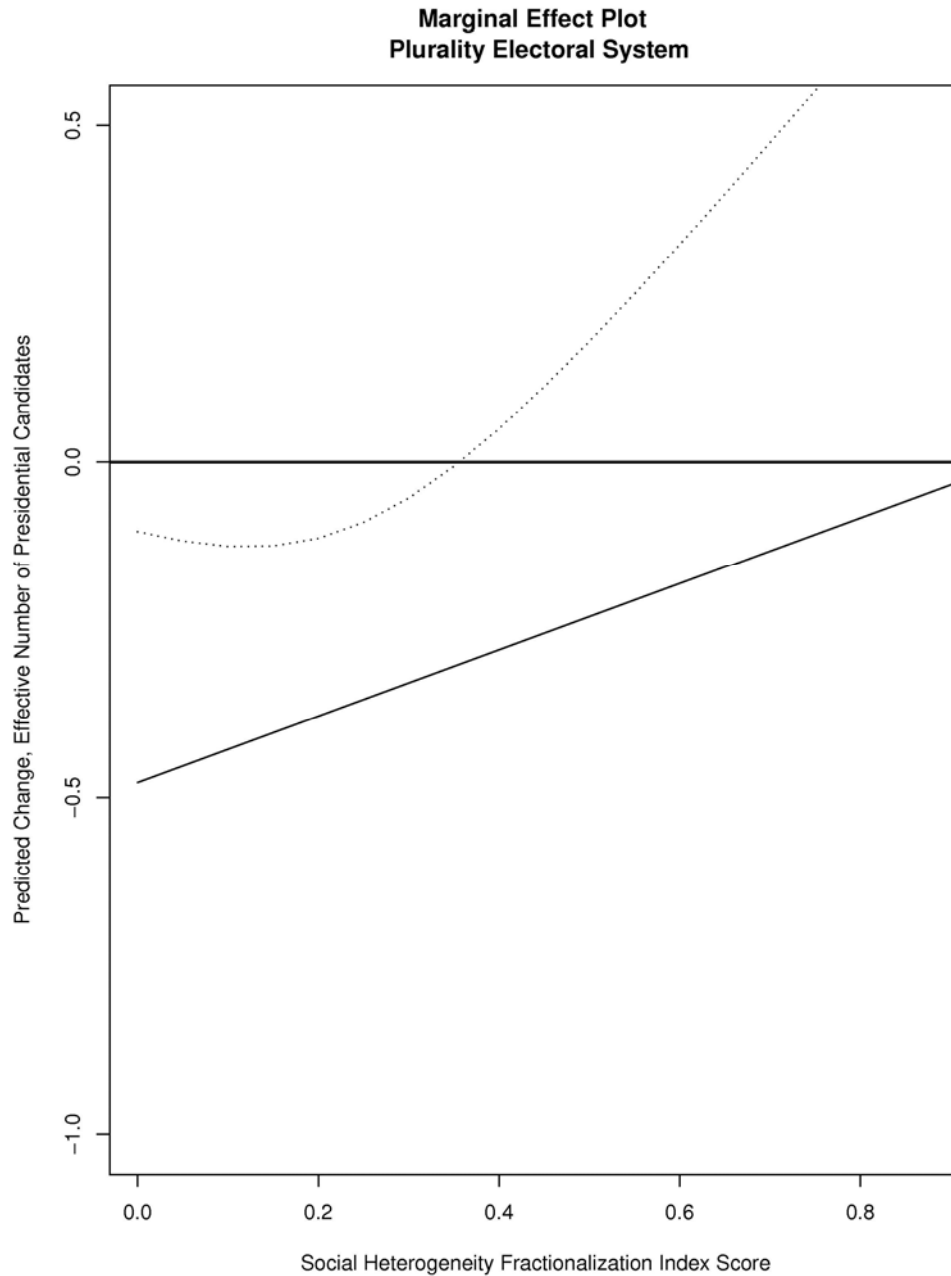


Figure 12. The estimated marginal effects of electoral system restrictiveness from Model 13. Relative to Model 1, Model 13 employs an alternative measure of electoral system restrictiveness: both the United States and Argentina (when employing an electoral college) are coded as possessing a restrictive (plurality) electoral system. The estimated marginal effects are shown over the observed range of the social heterogeneity (ethno-linguistic fractionalization index, ELF) data. One-sided upper 95% confidence intervals band the point estimates.

	Model 14	Model 15	<i>Model 16</i>
Intercept	1.65** (0.696)	1.35* (0.748)	-59.1 (41.4)
PLURALITY	0.317 (0.433)	-0.209 (0.233)	1.14 (1.34)
ELF	0.945 (0.560)	0.999* (0.605)	2.01* (1.21)
PLURALITY*ELF	-1.31 (0.927)	0.0139 (0.725)	-3.90 (2.94)
PRESPOWER	0.412*** (0.113)	0.401*** (0.114)	0.441** (0.179)
PRESPOWER²	-0.0415*** (0.0123)	-0.0420*** (0.0124)	-0.0514** (0.0221)
PRESPOWER³	0.00111*** (0.000363)	0.00116*** (0.000364)	0.00162** (0.0007001)
GOVREV	0.587 (10.9)	5.32 (11.0)	2.49 (1.64)
GOVREV²	-0.115 (56.0)	-18.9 (55.9)	-0.0336 (0.0214)
GOVREV³	-3.91 (84.1)	20.6 (83.6)	0.000148 (0.0000919)
ASIA	-0.0655 (0.439)	-0.0986 (0.387)	-0.359 (1.07)
LAMER	0.222 (0.232)	0.416 (0.256)	-0.459 (0.603)
EEUROPE	-0.0288 (0.289)	-0.0364 (0.294)	-0.213 (0.429)
AFRICA	0.0763 (0.491)	-0.0202 (0.524)	
OTHER	-1.21*** (0.388)	-1.07** (0.422)	
N	206	206	94
Root MSE	1.07	1.06	1.09
R²	0.132	0.143	0.169

Table 14. Coefficient estimates for versions of Models 1 (Model 14) and 3 (Model 16) that employ an alternative measure of social heterogeneity, ethnic fractionalization based upon Fearon's (2003) data, each of which uses a reduced set of cases relative to the original sets (no Iceland). The measure of vertical centralization for Model 14 is accordingly central government revenue as a percentage of GDP, whereas for Model 16, it is central government revenue as a percentage of total government revenue. Also shown is a version of Model 1 that employs the original measure of social heterogeneity (the ethno-linguistic fractionalization index, ELF) but the same reduced set of cases as Model 14 (Model 15). Newey-West (1987) robust standard errors reported for Models 14 and 15, and MacKinnon-White HC3 robust standard errors for Model 16. Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***, 0.05, **, 0.10, *.

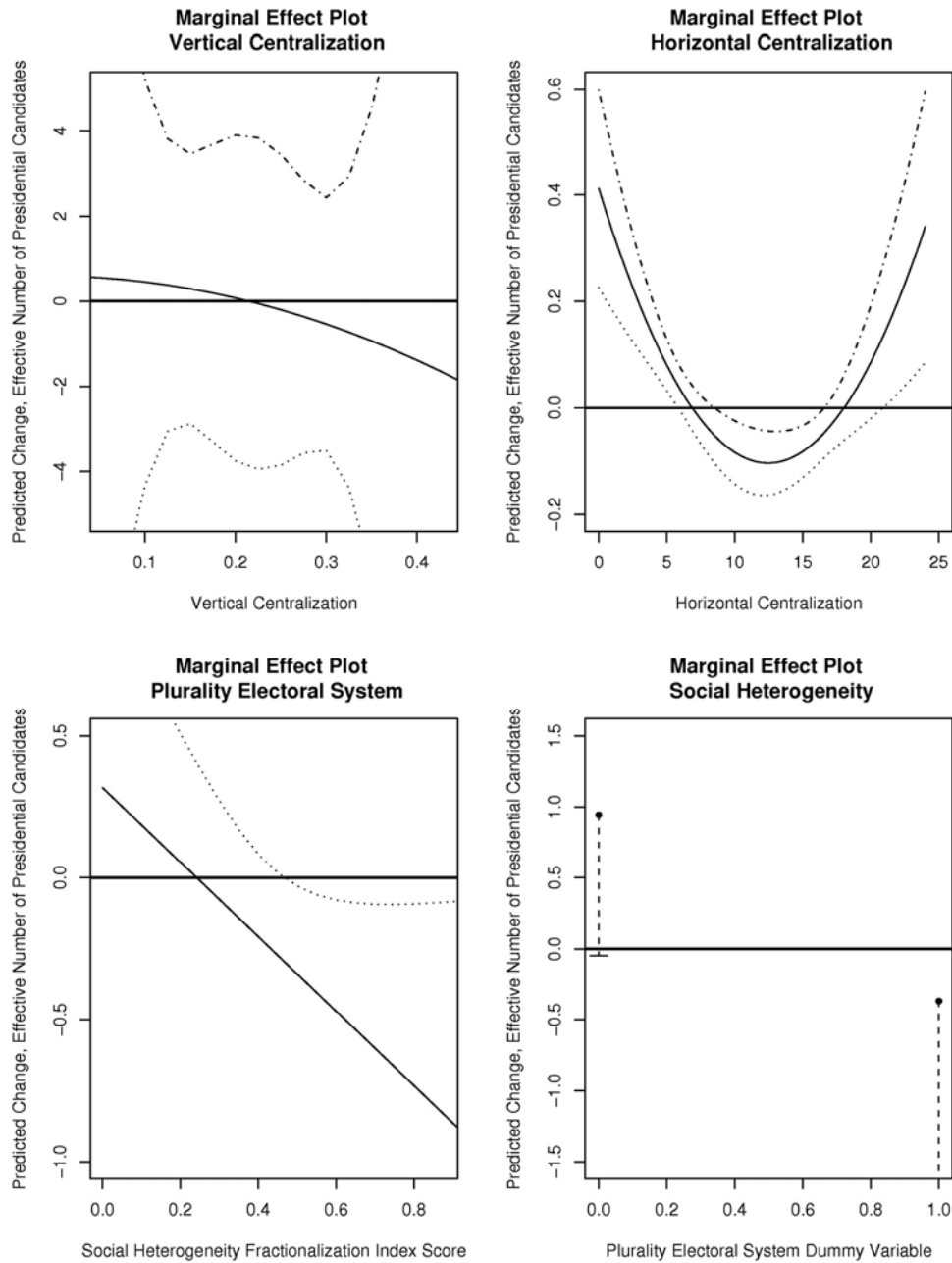


Figure 13. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 14. Relative to Model 1, Model 14 employs an alternative measure of social heterogeneity: ethnic fractionalization based upon Fearon’s (2003) data. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

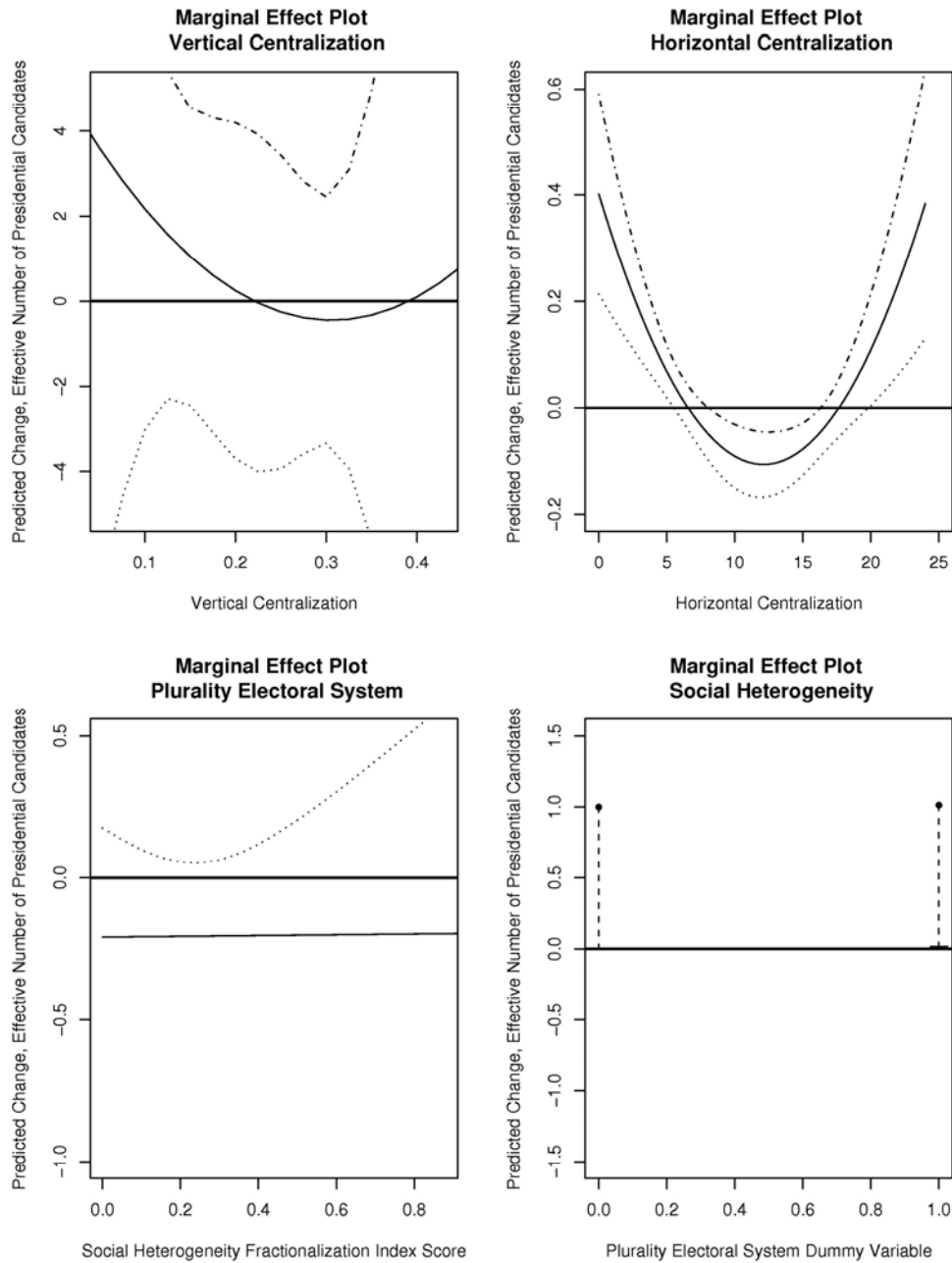


Figure 14. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 15. Relative to Model 1, Model 15 employs the same measure of social heterogeneity, ELF, but an alternative set of cases: the same set used to estimate Model 14 (that is, the original data set with all Icelandic elections list-wise deleted). The estimated marginal effects are shown over the observed ranges of the respective data. Lower and/or upper one-sided 95% confidence intervals band the point estimates as appropriate.

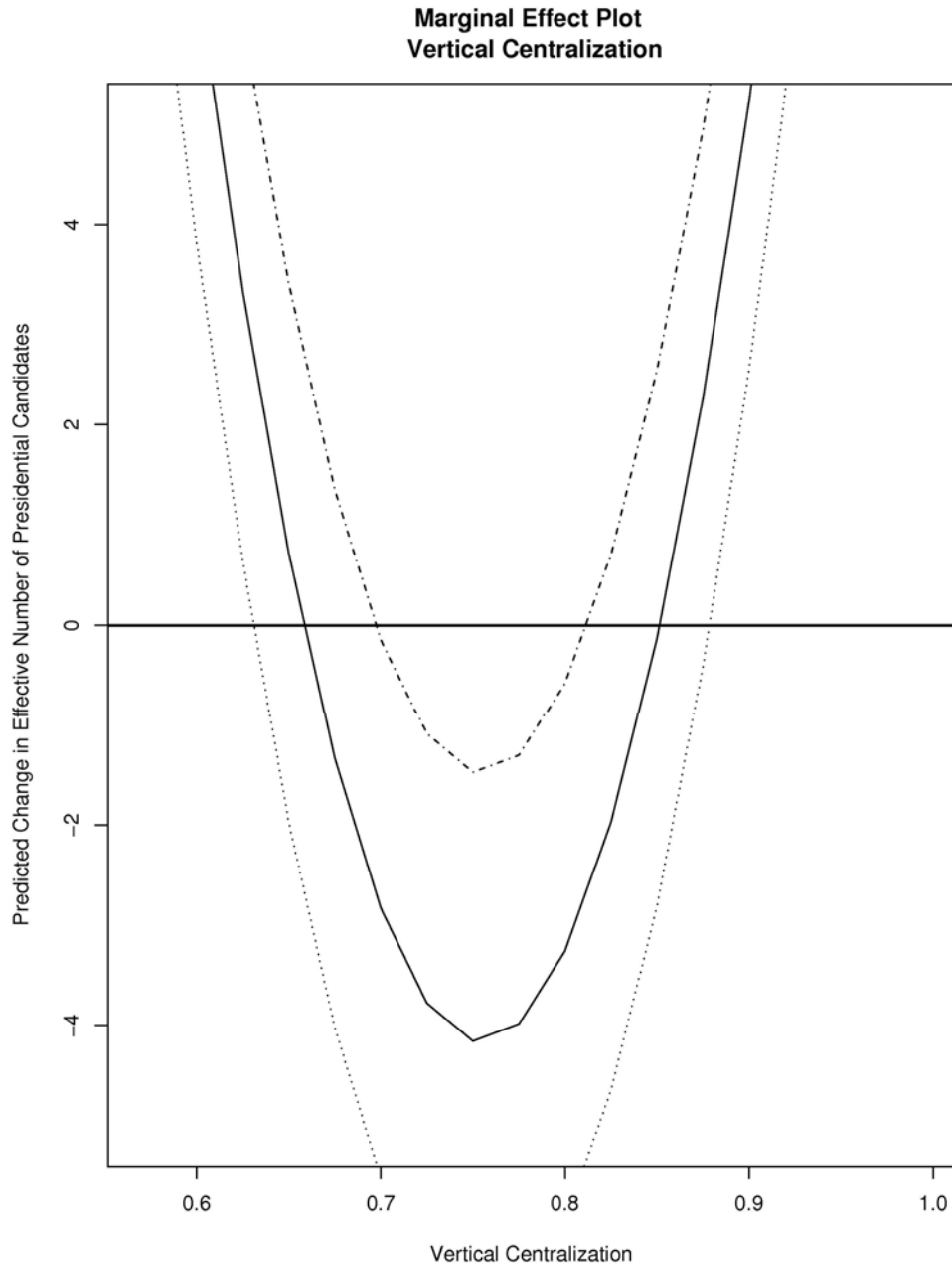


Figure 15. The estimated marginal effects of vertical centralization from Model 16. Relative to Model 3, Model 16 employs an alternative measure of social heterogeneity: ethnic fractionalization based upon Fearon’s (2003) data. The estimated marginal effects are shown over the observed ranges of the data. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	<i>Model 17</i>
Intercept	1.06 (0.709)
PLURALITY	-0.440** (0.223)
ELF	0.696 (0.553)
PLURALITY*ELF	0.165 (0.721)
PRESPOWER	0.379*** (0.111)
PRESPOWER²	-0.374*** (0.0119)
PRESPOWER³	0.00102*** (0.000346)
GOVREV	15.2 (10.9)
GOVREV²	-71.6 (54.5)
GOVREV³	97.9 (81.5)
OECD	-0.210 (0.202)
N	216
Root MSE	1.08
R²	0.130

Table 15. Coefficient estimates and Newey-West (1987) robust standard errors for a version of Model 1 that controls for OECD membership instead of region (Model 17). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

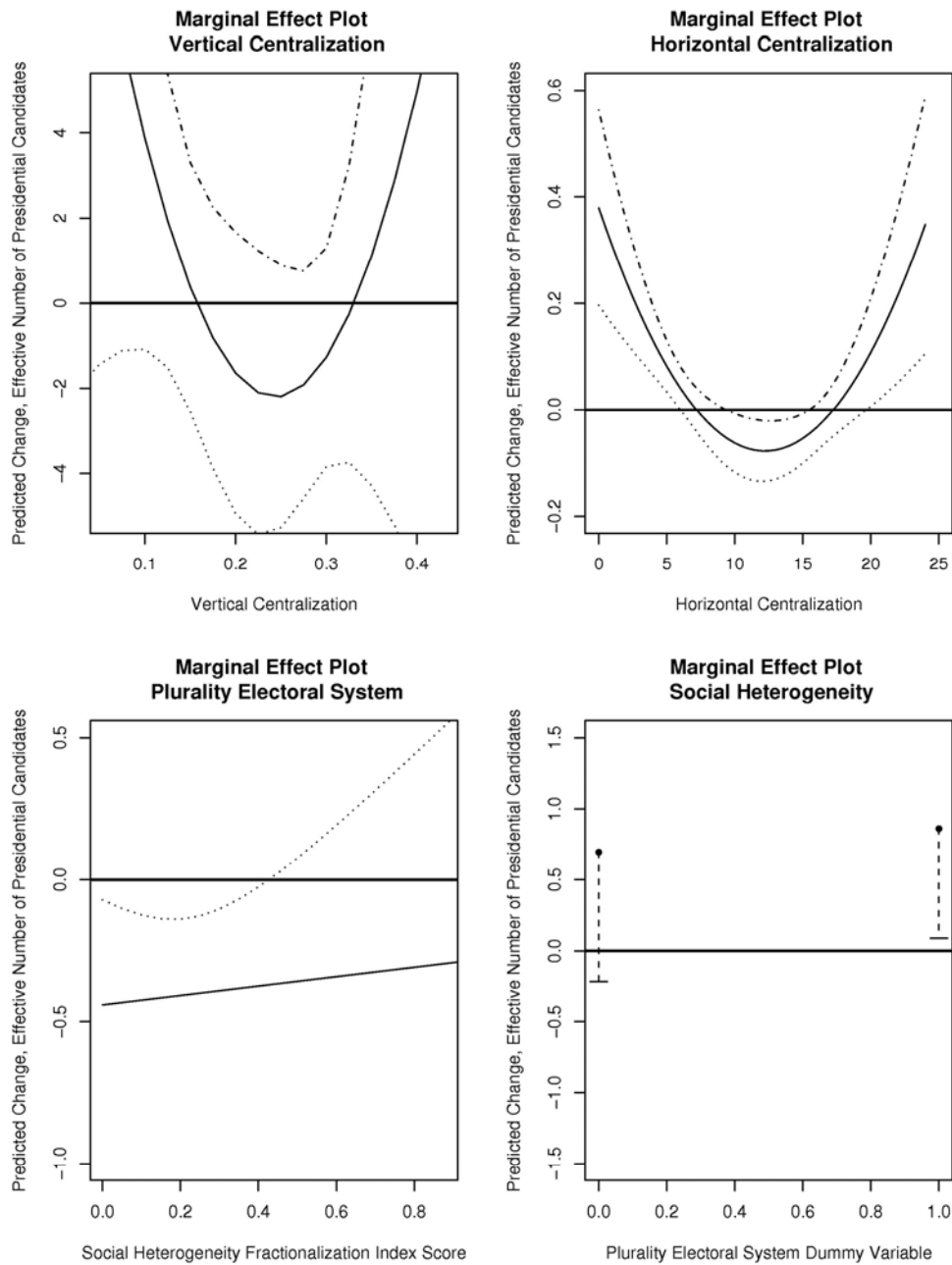


Figure 16. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 17. Relative to Model 1, Model 17 controls for OECD membership instead of for region. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

	<i>Model 18</i>
Intercept	1.12 (0.760)
PLURALITY	-0.483** (0.227)
ELF	0.945 (0.601)
PLURALITY*ELF	0.497 (0.480)
PRESPOWER	0.372*** (0.114)
PRESPOWER²	-0.0396*** (0.0126)
PRESPOWER³	0.00110*** (0.000373)
GOVREV	10.5 (11.0)
GOVREV²	-47.0 (55.5)
GOVREV³	65.4 (83.8)
ASIA	-0.0326 (0.383)
LAMER	0.546** (0.255)
EEUROPE	0.0193 (0.297)
AFRICA	0.0268 (0.526)
OTHER	-1.05*** (0.422)
N	214
Root MSE	1.07
R²	0.166

Table 16. Coefficient estimates and Newey-West (1987) robust standard errors for a version of Model 1 estimated after list-wise deleting the two Israeli elections (Model 18). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

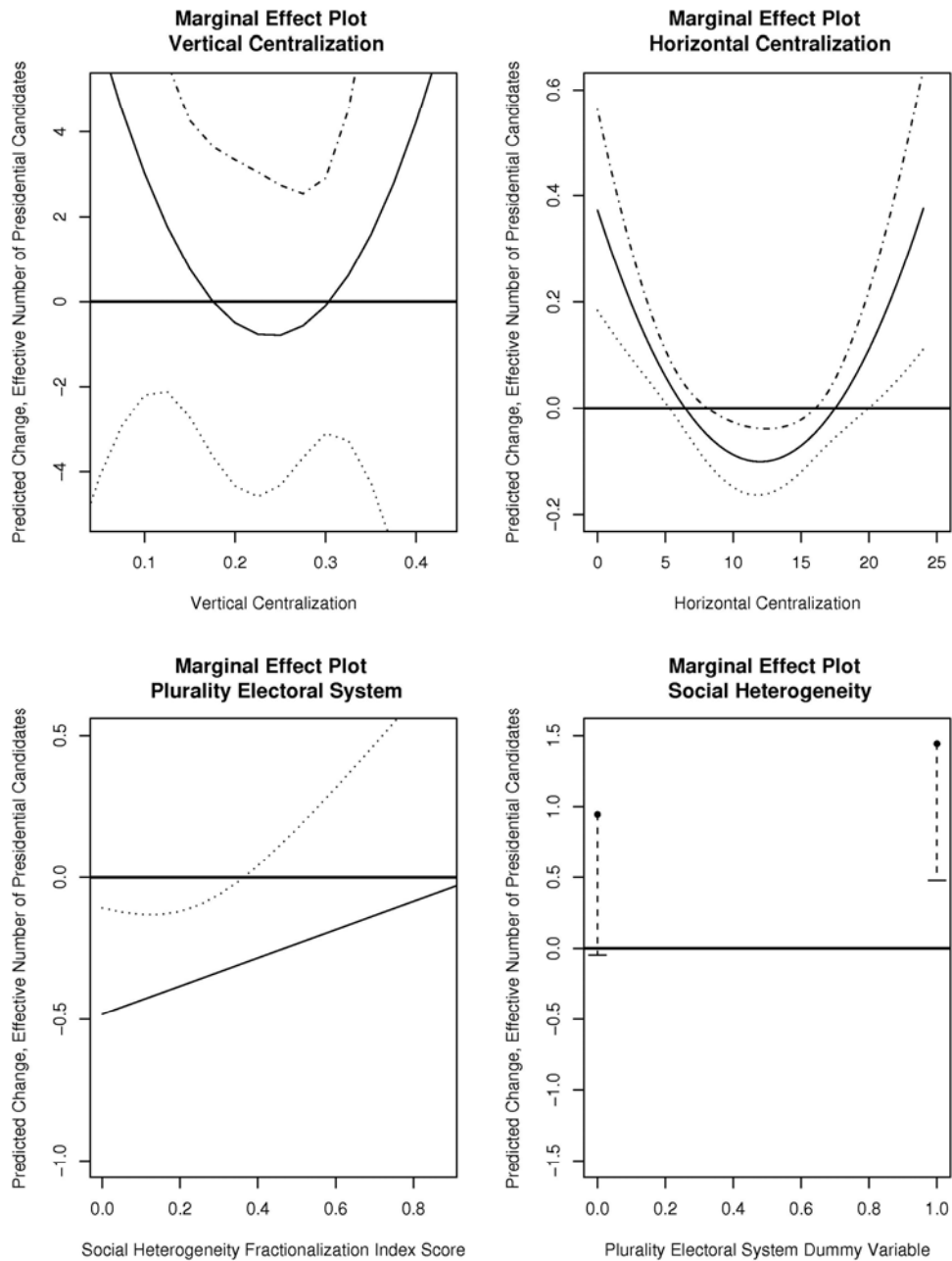


Figure 17. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 18. Relative to Model 1, Model 18 employs an alternative set of cases: the two Israeli elections are deleted from the original data set. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

	<i>Model 19</i>
Intercept	1.02 (0.711)
PLURALITY	-0.423** (0.215)
ELF	1.22** (0.506)
PLURALITY*ELF	0.392 (0.666)
PRESPOWER	0.407*** (0.114)
PRESPOWER²	-0.0463*** (0.0127)
PRESPOWER³	0.00137*** (0.000381)
GOVREV	8.95 (10.1)
GOVREV²	-31.1 (49.8)
GOVREV³	33.6 (73.0)
ASIA	-0.0638 (0.378)
LAMER	0.611*** (0.234)
EEUROPE	0.0162 (0.281)
AFRICA	-0.0310 (0.534)
OTHER	-0.943** (0.386)
N	240
Root MSE	1.06
R²	0.165

Table 17. Coefficient estimates and Newey-West (1987) robust standard errors for a version of Model 1 that includes fused electoral systems in the analysis (Model 19). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

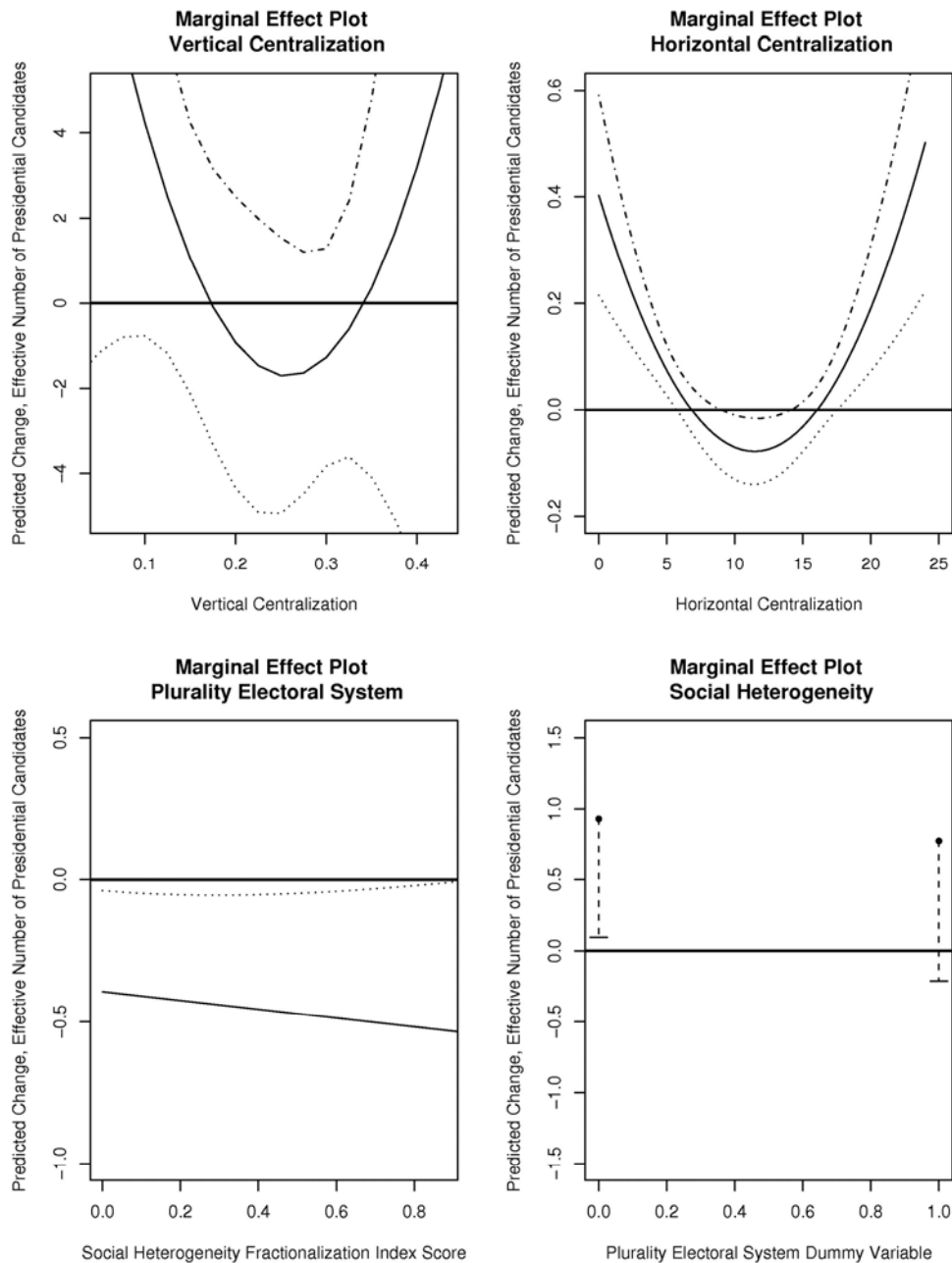


Figure 18. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 19. Relative to Model 1, Model 19 employs an alternative set of cases: fused electoral systems are included in the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

	Model 20	<i>Model 21</i>
Intercept	1.17 (0.821)	-69.1 (93.8)
PLURALITY	-0.301 (0.222)	-0.615 (0.448)
ELF	1.16* (0.624)	2.37** (1.02)
PLURALITY*ELF	0.319 (0.707)	2.67 (3.21)
PRESPOWER	0.233** (0.103)	0.348* (0.191)
PRESPOWER²	-0.0248** (0.0111)	-0.0459* (0.0234)
PRESPOWER³	0.000684** (0.000322)	0.00149** (0.000744)
GOVREV	8.21 (11.9)	2.88 (3.50)
GOVREV²	-36.8 (59.3)	-0.0382 (0.0432)
GOVREV³	54.9 (87.9)	0.000167 (0.000176)
ASIA	0.0809 (0.413)	-1.47** (0.603)
LAMER	0.764*** (0.287)	0.145 (0.603)
EEUROPE	0.264 (0.295)	-0.0800 (0.411)
AFRICA	0.178 (0.620)	
OTHER	-0.750* (0.422)	
N	191	90
Root MSE	1.03	1.05
R²	0.180	0.280

Table 18. Coefficient estimates and robust standard errors for versions of Models 1 and 3 that eliminate semi-direct (electoral college) electoral systems from the analysis (Models 20 and 21, respectively). The measure of vertical centralization for Model 20 is accordingly central government revenue as a percentage of GDP, whereas for Model 21, it is central government revenue as a percentage of total government revenue. Newey-West robust standard errors reported for Model 20 and MacKinnon-White (1985) HC3 robust standard errors for Model 21. Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

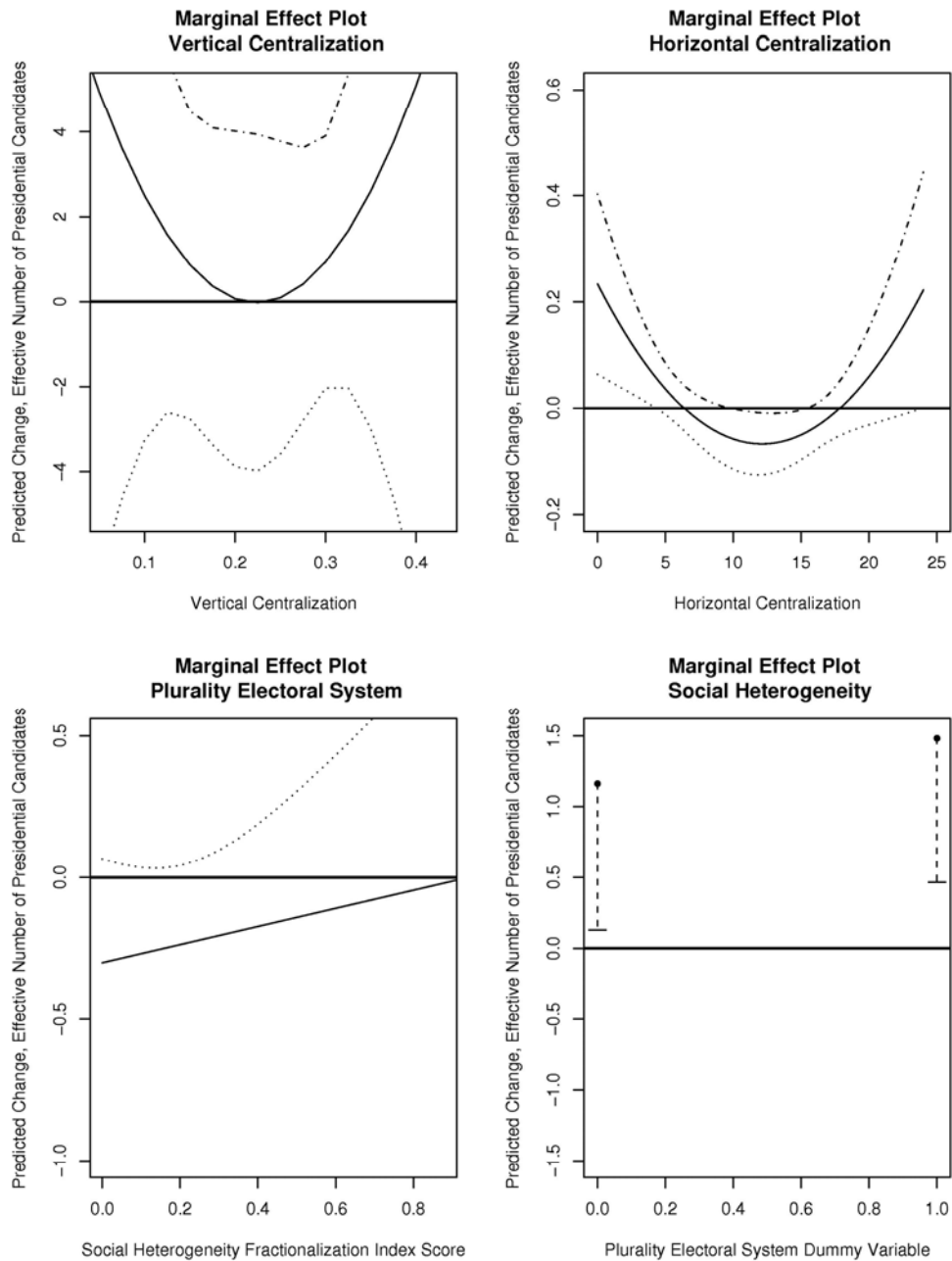


Figure 19. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 20. Relative to Model 1, Model 20 employs an alternative set of cases: semi-direct elections are eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

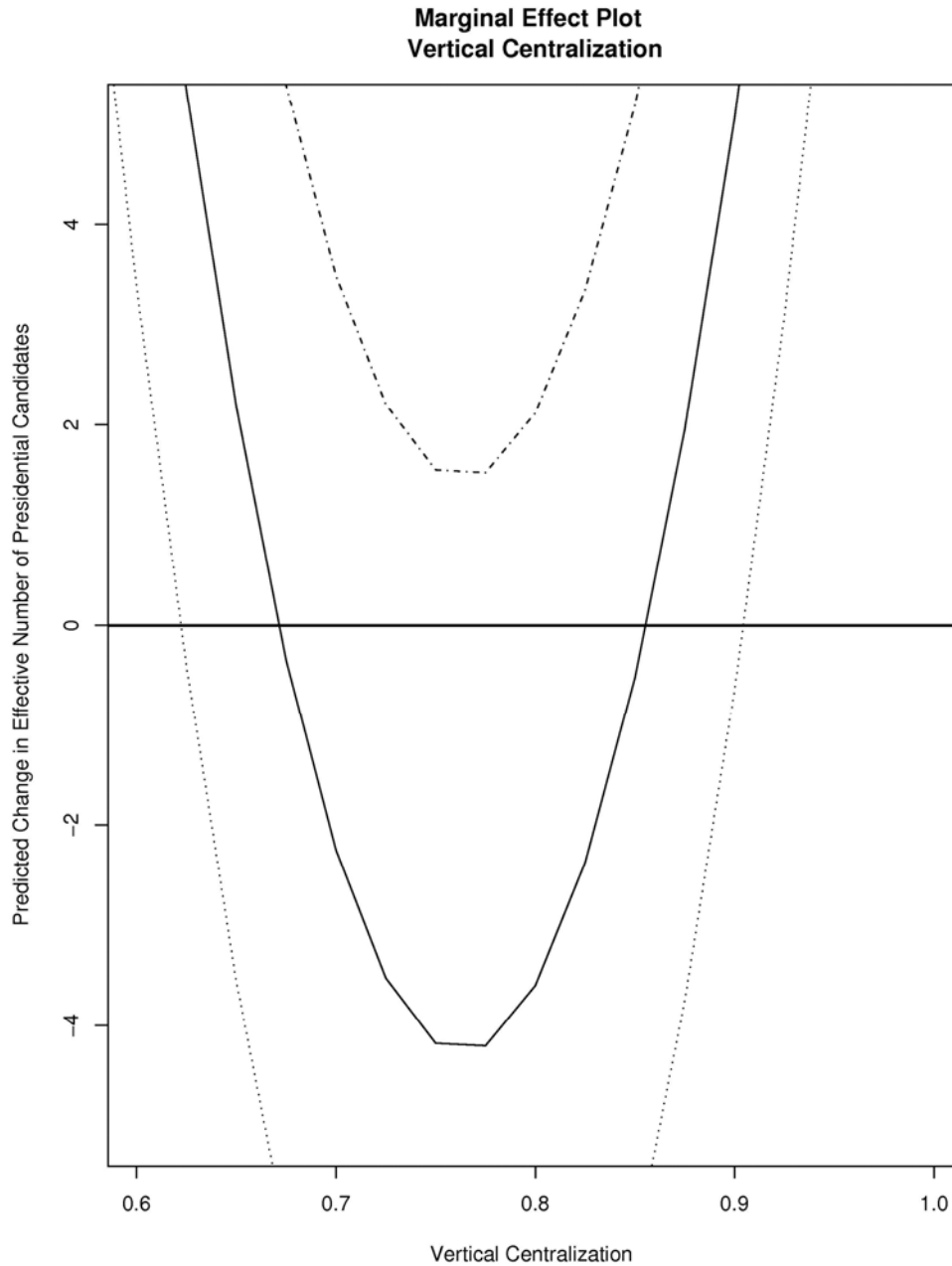


Figure 20. The estimated marginal effects of vertical centralization from Model 21. Relative to Model 3, Model 21 employs an alternative set of cases: semi-direct elections are eliminated from the analysis. The estimated marginal effects are shown over the observed range of the data. Both lower and upper one-sided 95% confidence intervals band the point estimates.

	Model 22	Model 23	<i>Model 24</i>
Intercept	0.487 (0.763)	0.308 (0.760)	0.567 (0.747)
PLURALITY	-0.437** (0.221)	-0.482** (0.223)	-0.337 (0.229)
ELF	1.29** (0.583)	1.03 (0.632)	1.63*** (0.598)
PLURALITY*ELF	0.819 (0.695)	1.22 (0.742)	0.205 (0.794)
PRESPOWER	0.367*** (0.117)	0.370*** (0.120)	0.333*** (0.116)
PRESPOWER²	-0.0409*** (0.0132)	-0.0413*** (0.0134)	-0.0363*** (0.0131)
PRESPOWER³	0.00117*** (0.000398)	0.00119*** (0.000404)	0.00104*** (0.000391)
GOVREV	14.0 (10.6)	16.5 (10.5)	10.4 (10.5)
GOVREV²	-47.8 (52.6)	-58.5 (52.0)	-28.5 (52.5)
GOVREV³	53.7 (78.7)	69.3 (78.0)	26.9 (78.5)
ASIA	-0.0480 (0.385)	-0.0479 (0.377)	-0.0195 (0.381)
LAMER	0.752*** (0.257)	0.769*** (0.254)	0.721*** (0.256)
EEUROPE	0.0269 (0.300)	-0.0425 (0.295)	-0.0201 (0.293)
AFRICA	-0.857 (0.561)	-0.942 (0.580)	
OTHER	-0.644 (0.420)	-0.596 (0.422)	
N	209	202	204
Root MSE	1.06	1.05	1.04
R²	0.187	0.186	0.179

Table 19. Coefficient estimates and Newey-West (1987) robust standard errors for three versions of Model 1 that eliminate less democratically consolidated cases from the analysis: Model 22, countries with one election in the pre-list-wise deletion (LWD) data set; Model 23, countries with one election in the post-LWD data set; and Model 24, African and Pacific/Caribbean island countries. Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

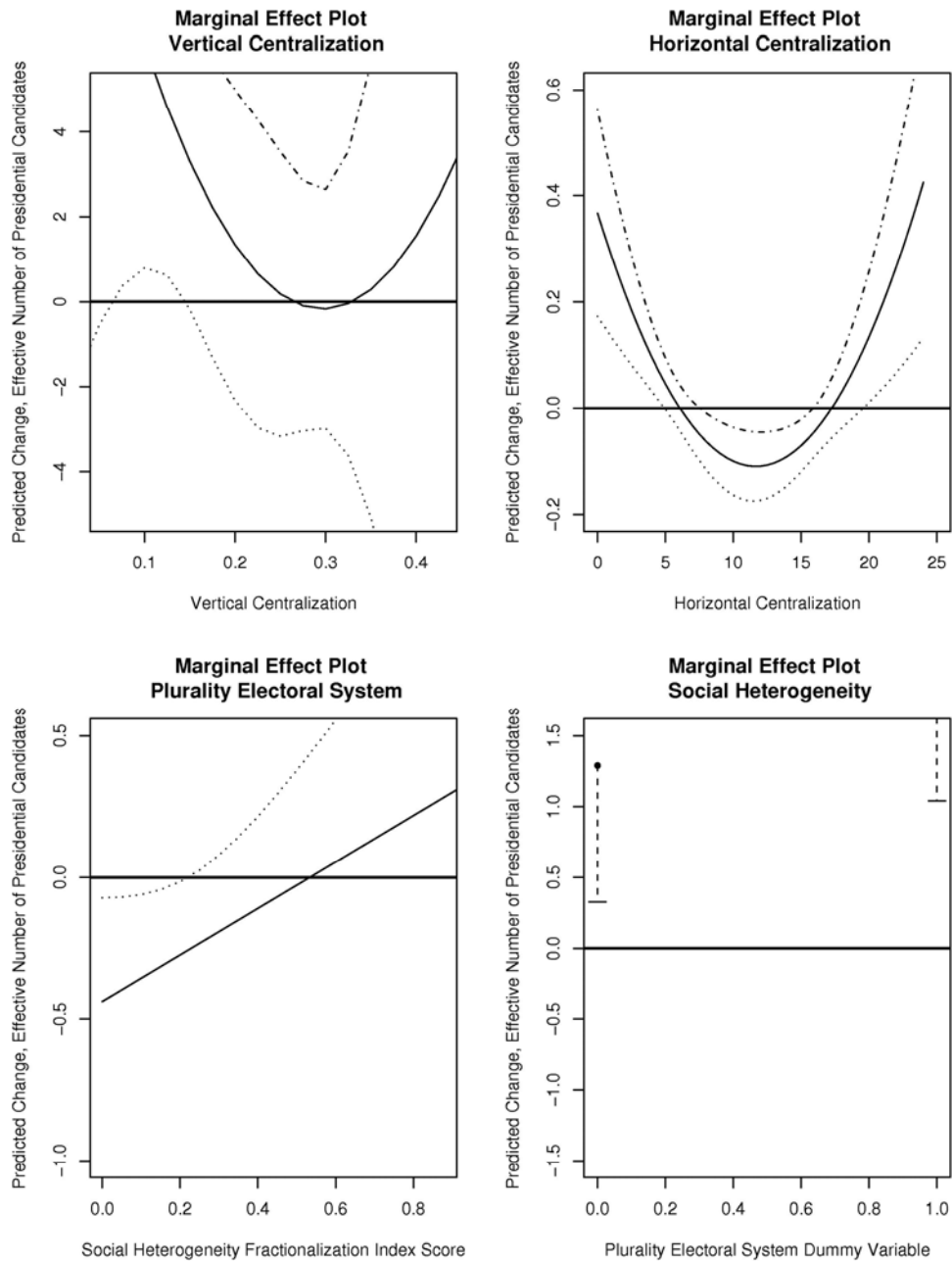


Figure 21. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 22. Relative to Model 1, Model 22 employs an alternative set of cases: countries with only one election in the pre-LWD data set are eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

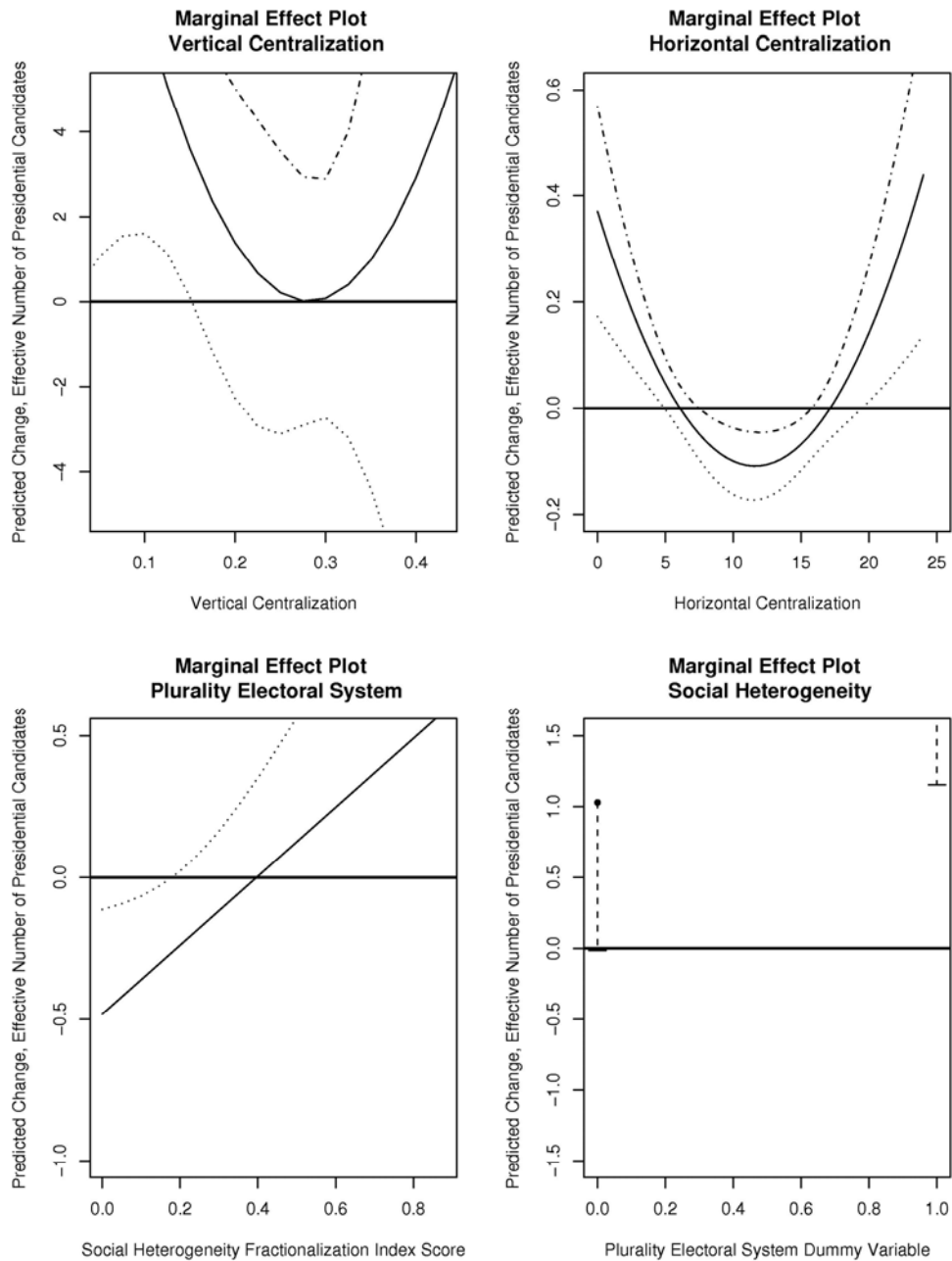


Figure 22. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 23. Relative to Model 1, Model 23 employs an alternative set of cases: countries with only one election in the post-LWD data set are eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

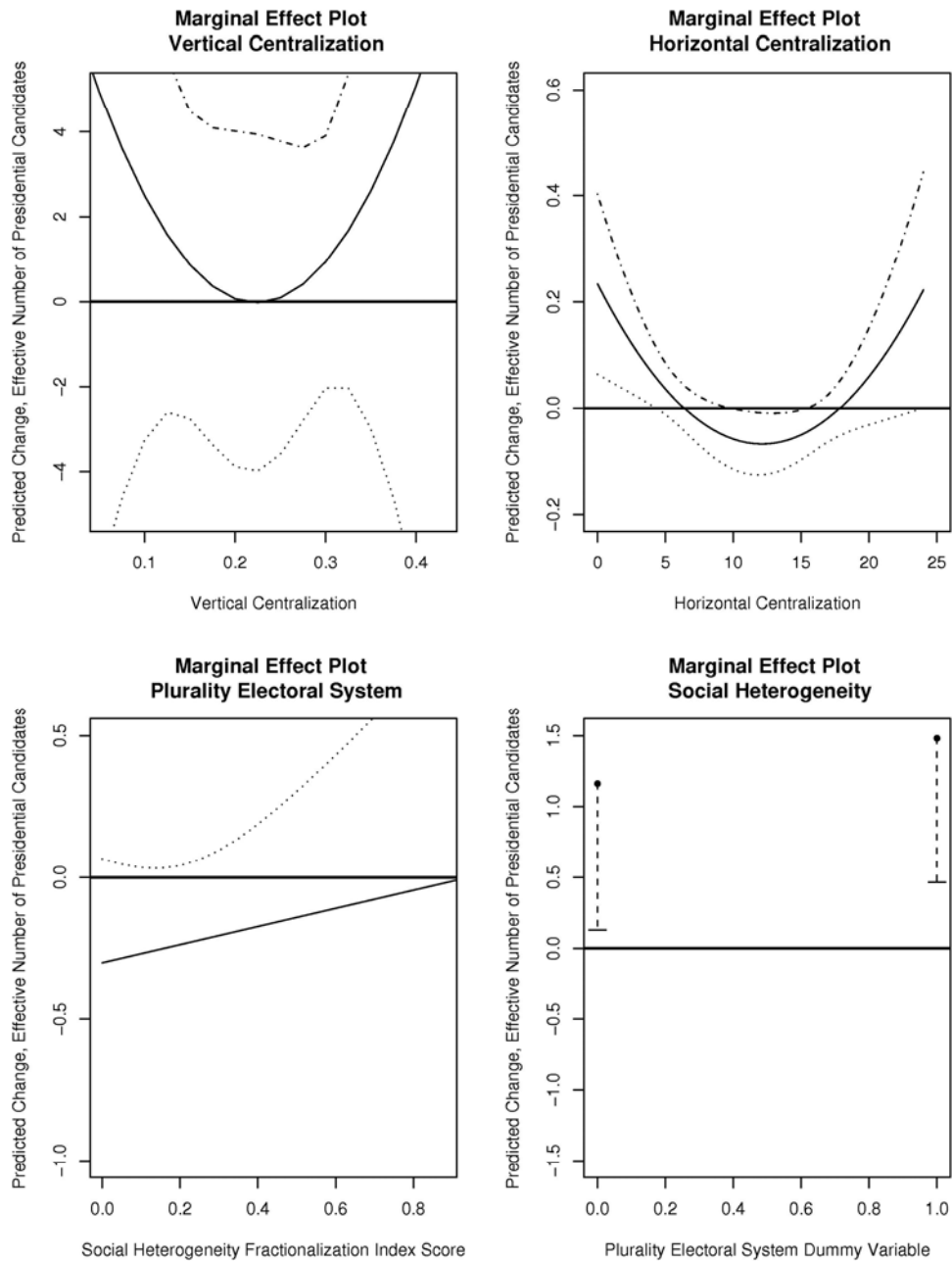


Figure 23. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 24. Relative to Model 1, Model 24 employs an alternative set of cases: African and Pacific/Caribbean island countries are eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

	Model 25	Model 26	<i>Model 27</i>
Intercept	1.03 (0.769)	0.866 (0.808)	1.12 (0.768)
PLURALITY	-0.469** (0.226)	-0.549** (0.245)	-0.470** (0.226)
ELF	0.991 (0.605)	0.939 (0.612)	0.997 (0.609)
PLURALITY*ELF	0.530 (0.712)	0.630 (0.735)	0.478 (0.703)
PRESPOWER	0.423*** (0.122)	0.442*** (0.125)	0.381*** (0.118)
PRESPOWER²	-0.0475*** (0.0139)	-0.0502*** (0.0143)	-0.0419*** (0.0132)
PRESPOWER³	0.00138*** (0.000424)	0.00145*** (0.000447)	0.00119*** (0.000399)
GOVREV	10.8 (10.8)	12.3 (11.1)	10.6 (10.9)
GOVREV²	-44.8 (53.8)	-48.9 (54.6)	-45.8 (54.7)
GOVREV³	55.9 (80.2)	60.1 (81.0)	59.9 (81.5)
ASIA	-0.0277 (0.388)	-0.0546 (0.389)	-0.0315 (0.386)
LAMER	0.593** (0.250)	0.611** (0.252)	0.575** (0.250)
EEUROPE	0.0311 (0.294)	0.0169 (0.293)	0.0474 (0.293)
AFRICA	0.0463 (0.527)	0.0424 (0.535)	0.0323 (0.528)
OTHER	-1.05** (0.419)	-1.00** (0.429)	-1.06** (0.421)
N	215	209	214
Root MSE	1.07	1.08	1.07
R²	0.171	0.179	0.169

Table 20. Coefficient estimates and Newey-West (1987) robust standard errors for three versions of Model 1 that eliminate cases with high values on the index of presidential powers: Model 25, Chile 1970; Model 26, all Chilean elections; and Model 27, Argentina 1995 and 1999. Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

	Model 28	Model 29	<i>Model 30</i>
Intercept	1.24 (0.818)	1.13 (0.772)	1.62** (0.749)
PLURALITY	-0.476* (0.249)	-0.421* (0.219)	-0.386* (0.230)
ELF	0.902 (0.615)	1.09* (0.599)	0.891 (0.588)
PLURALITY*ELF	0.536 (0.739)	0.459 (0.712)	0.0320 (0.746)
PRESPOWER	0.380*** (0.116)	0.386*** (0.114)	0.383*** (0.113)
PRESPOWER²	-0.0412*** (0.0128)	-0.0423*** (0.0126)	-0.0412*** (0.0123)
PRESPOWER³	0.00115*** (0.000383)	0.00117*** (0.000370)	0.00114*** (0.000362)
GOVREV	9.28 (11.5)	10.5 (11.0)	4.84 (11.1)
GOVREV²	-40.9 (56.7)	-46.4 (55.9)	-24.3 (55.5)
GOVREV³	54.3 (83.9)	61.6 (83.8)	34.3 (82.7)
ASIA	-0.00290 (0.390)	0.00400 (0.394)	-0.347 (0.449)
LAMER	0.588** (0.252)	0.565** (0.258)	0.544** (0.248)
EEUROPE	0.0653 (0.291)	0.0431 (0.293)	0.0617 (0.291)
AFRICA	0.0731 (0.519)	0.247 (0.525)	0.148 (0.495)
OTHER	-1.11** (0.442)	-1.07 (0.438)	-1.25*** (0.410)
N	204	210	207
Root MSE	1.10	1.06	1.05
R²	0.162	0.176	0.179

Table 21. Coefficient estimates and Newey-West (1987) robust standard errors for three versions of Model 1 that eliminate cases with high values on the index of presidential powers: Model 28, all Colombian elections; Model 29, all Brazilian elections; and Model 30, all Philippines elections. Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

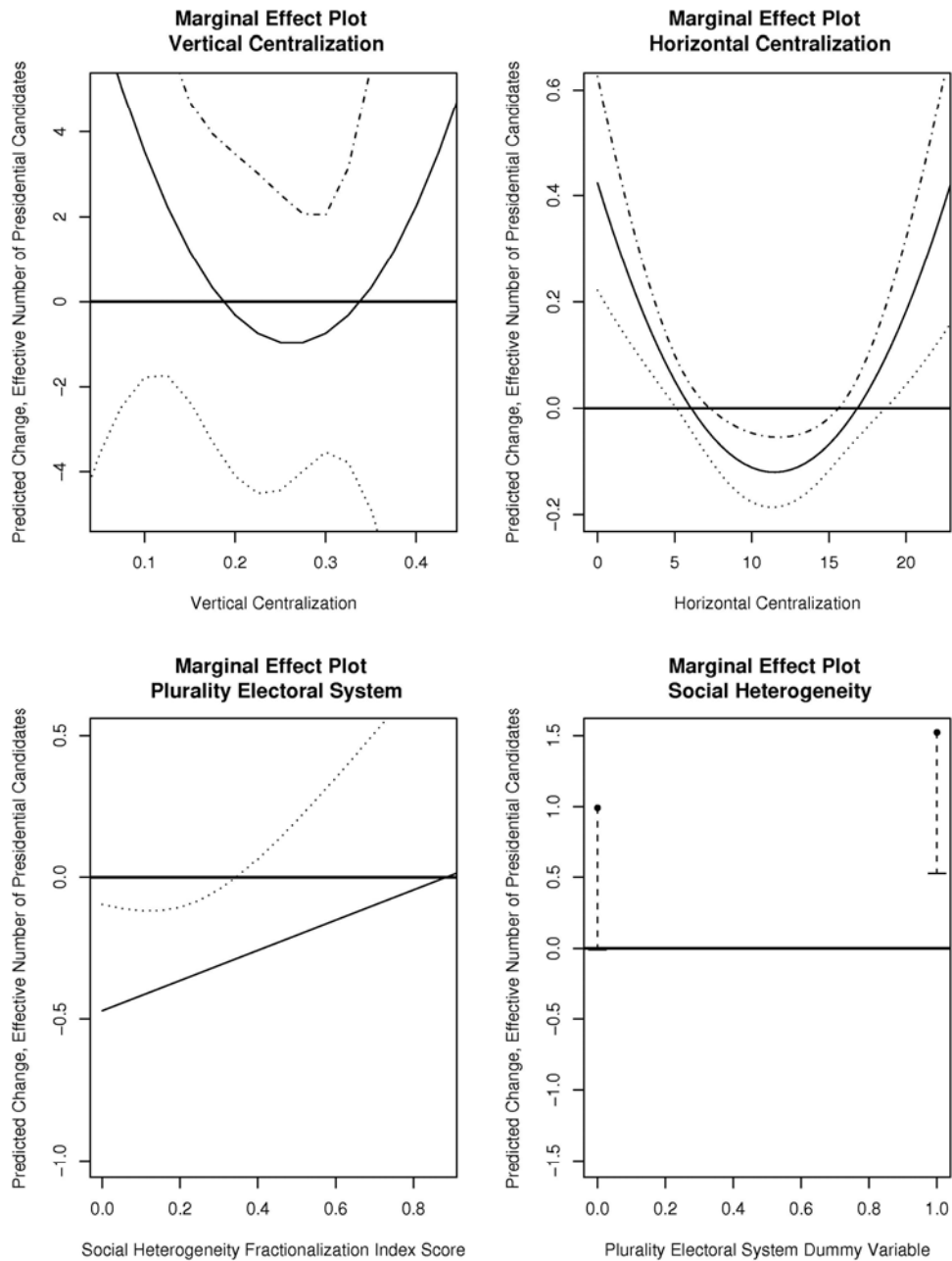


Figure 24. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 25. Relative to Model 1, Model 25 employs an alternative set of cases: Chile 1970 is eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

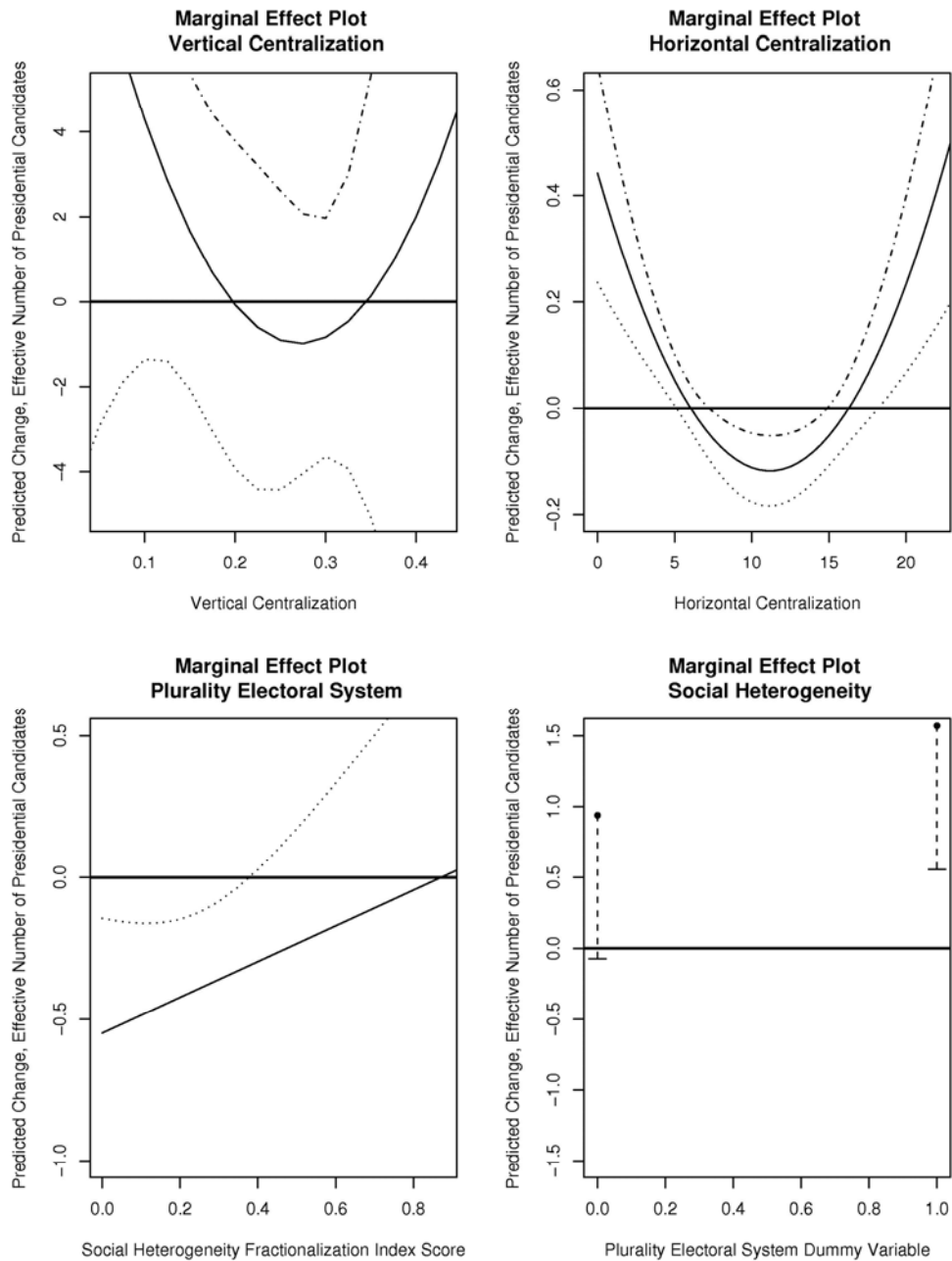


Figure 25. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 26. Relative to Model 1, Model 26 employs an alternative set of cases: all Chilean elections are eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

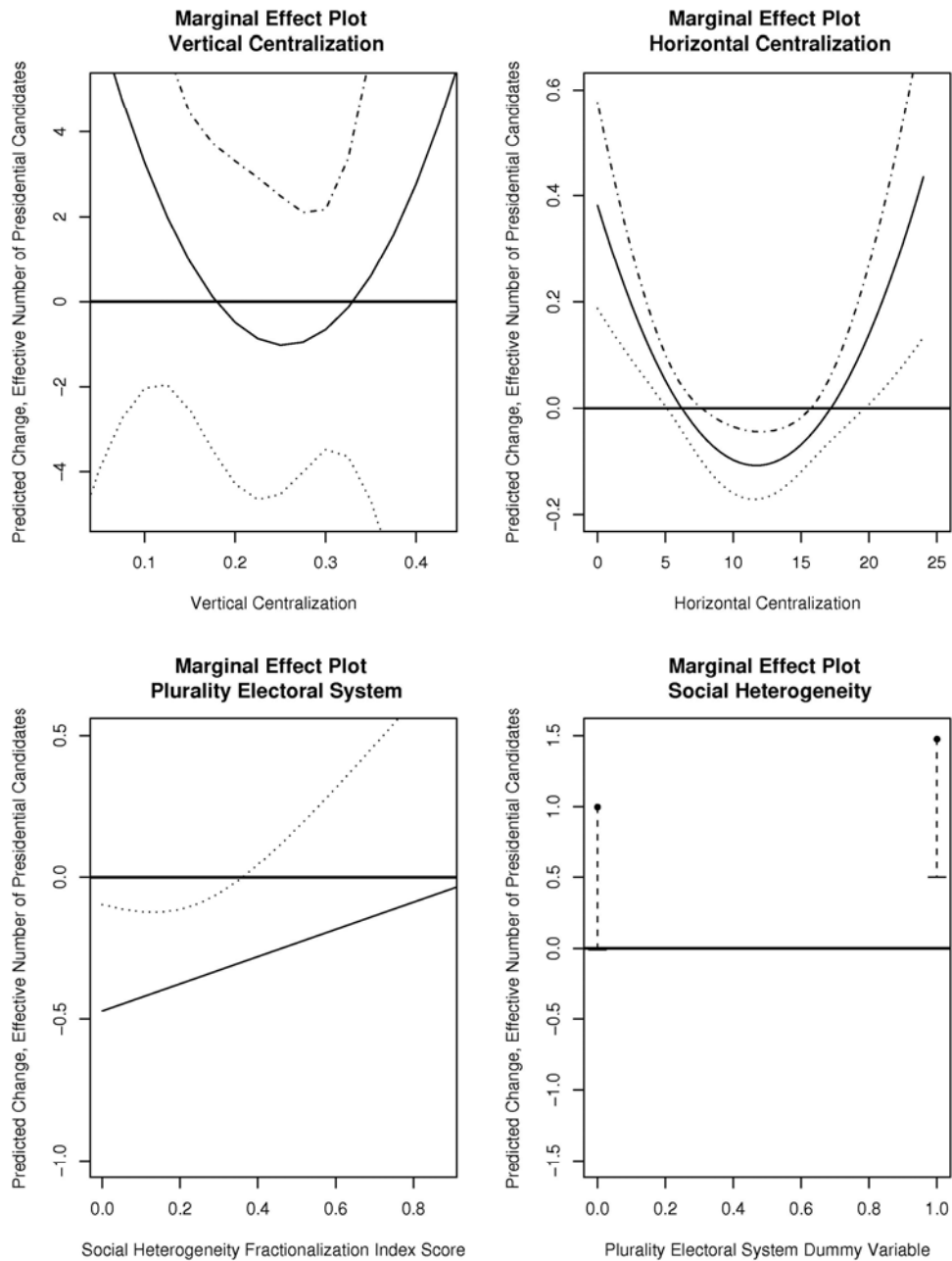


Figure 26. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 27. Relative to Model 1, Model 27 employs an alternative set of cases: Argentina 1995 and 1999 are eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

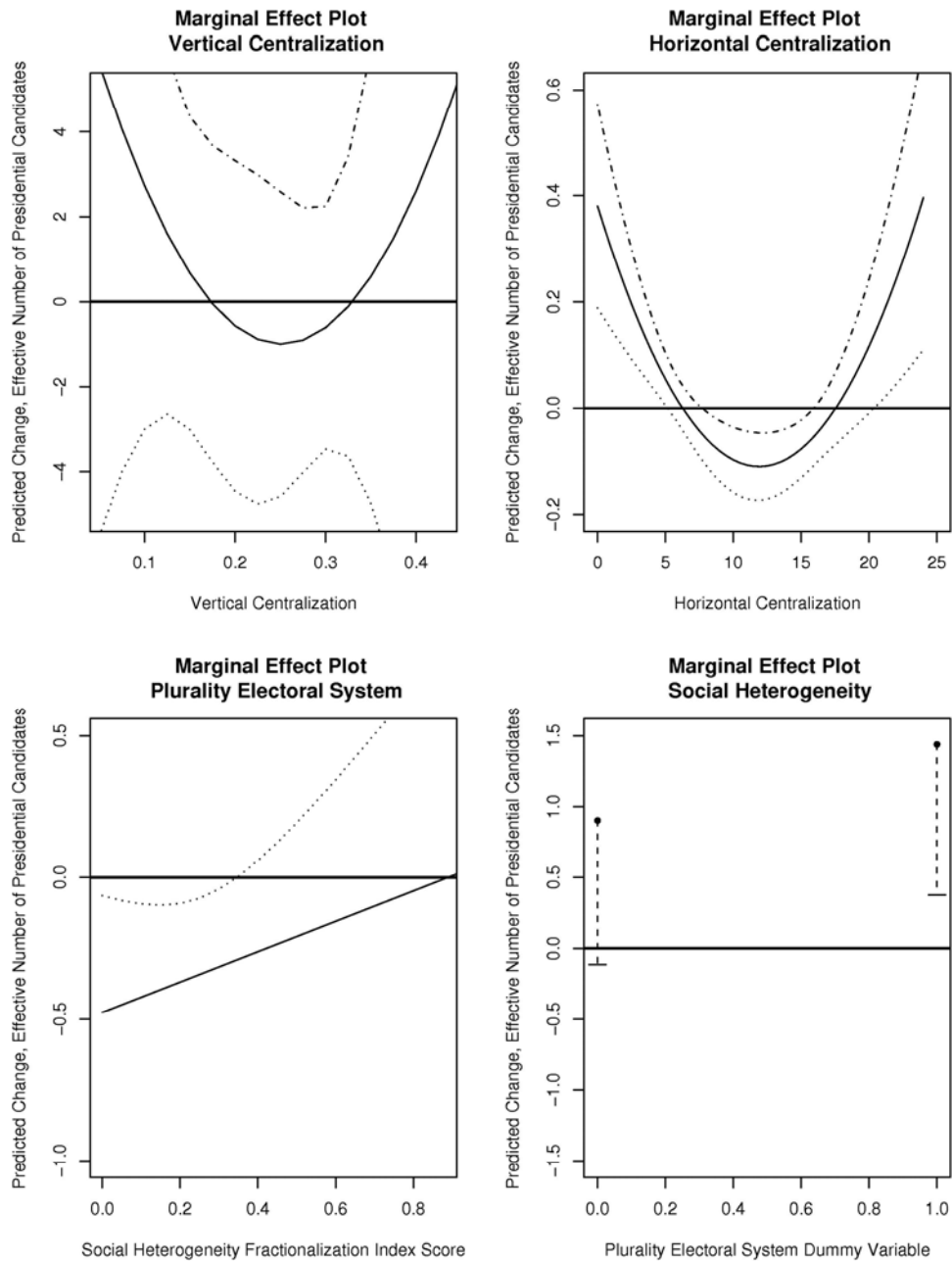


Figure 27. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 28. Relative to Model 1, Model 28 employs an alternative set of cases: all Colombian elections are eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

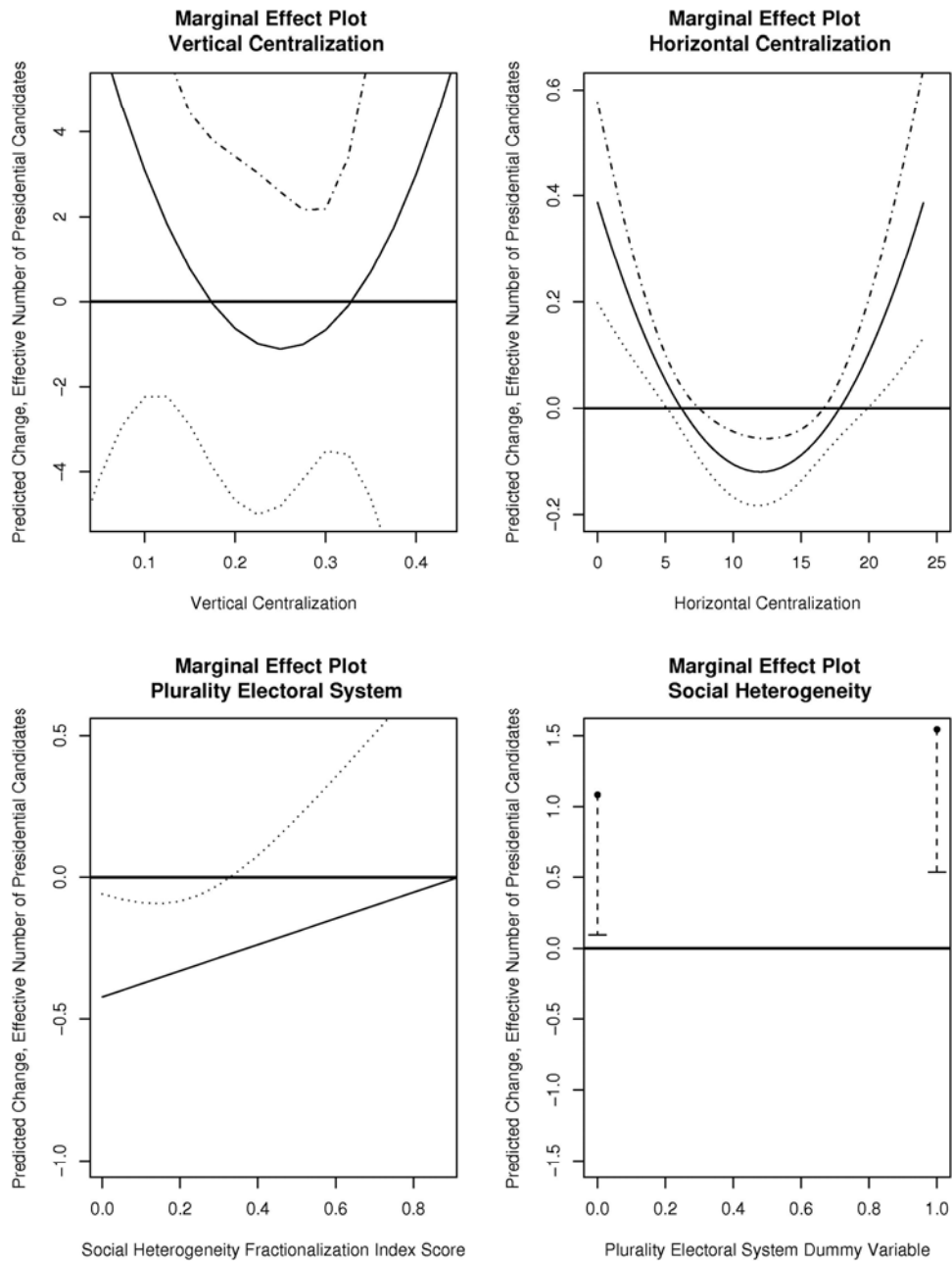


Figure 28. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 29. Relative to Model 1, Model 29 employs an alternative set of cases: all Brazilian elections are eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

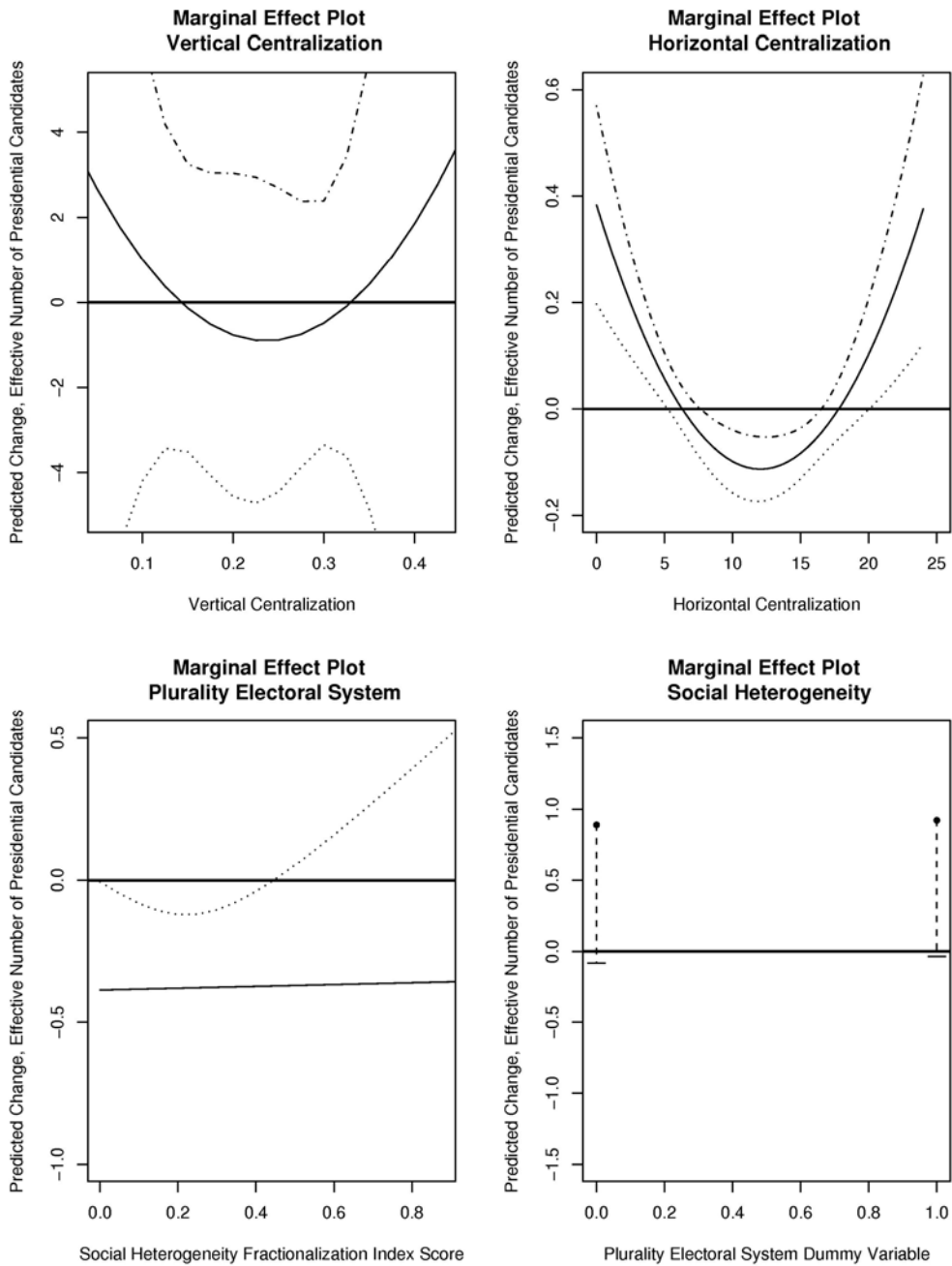


Figure 29. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 30. Relative to Model 1, Model 30 employs an alternative set of cases: all Philippines elections are eliminated from the analysis. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

	<i>Model 31</i>
Intercept	1.26* (0.665)
PLURALITY	-0.484** (0.209)
ELF	1.39** (0.551)
PLURALITY*ELF	0.0964 (0.624)
PRESPOWER	0.322*** (0.116)
PRESPOWER²	-0.0363*** (0.0129)
PRESPOWER³	0.00107*** (0.000389)
GOVREV	8.17 (9.01)
GOVREV²	-33.6 (43.7)
GOVREV³	43.0 (64.4)
ASIA	-0.0480 (0.334)
LAMER	0.503** (0.230)
EEUROPE	-0.0299 (0.263)
AFRICA	-0.291 (0.395)
OTHER	-0.865** (0.337)
N	258
Root MSE	
R²	

Table 22. Coefficient estimates and Newey-West (1987) robust standard errors for Model 1 estimated using an alternative set of cases (Model 31): the five multiply imputed data sets. Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

	<i>Model 32</i>
Intercept	1.29* (0.755)
PLURALITY	-0.452** (0.228)
ELF	0.984 (0.616)
PLURALITY*ELF	0.435 (0.722)
PRESPOWER	0.378*** (0.115)
PRESPOWER²	-0.0411*** (0.0127)
PRESPOWER³	0.00115*** (0.000376)
GOVREV	8.18 (10.9)
GOVREV²	-35.2 (54.5)
GOVREV³	46.2 (81.3)
ASIA	0.0654 (0.384)
LAMER	0.628** (0.253)
EEUROPE	0.115 (0.285)
AFRICA	0.184 (0.534)
OTHER	-1.10** (0.420)
TRANSELECT	-0.184 (0.201)
N	216
Root MSE	1.07
R²	0.169

Table 23. Coefficient estimates and Newey-West (1987) robust standard errors for a version of Model 1 estimated using an alternative model specification (Model 32): one which includes a control for transitional elections (TRANSELECT). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

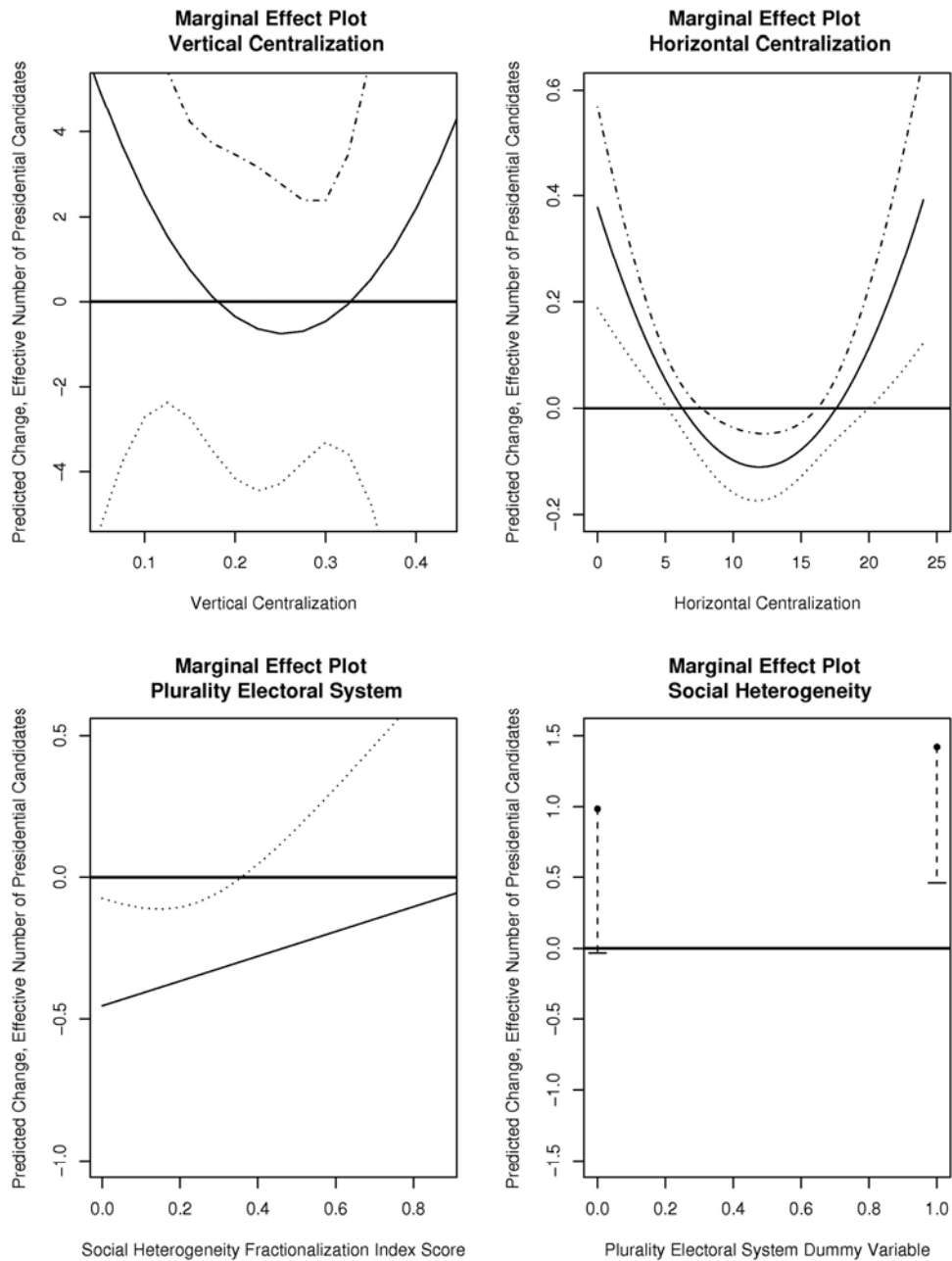


Figure 30. The estimated marginal effects of vertical centralization, horizontal centralization, electoral system restrictiveness, and social heterogeneity from Model 32. Relative to Model 1, Model 32 employs an alternative model specification: it controls for transitional elections. The estimated marginal effects are shown over the observed ranges of the respective data. Lower and upper one-sided 95% confidence intervals band the point estimates as appropriate.

	Model 33	Model 34	<i>Model 35</i>
Intercept	2.56*** (0.198)	0.975 (0.696)	2.66*** (0.159)
PLURALITY	-0.495** (0.214)	-0.446** (0.225)	-0.337 (0.219)
ELF	1.00* (0.564)	0.816 (0.540)	1.12** (0.550)
PLURALITY*ELF	0.134 (0.691)	0.0337 (0.708)	-0.425 (0.720)
PRESPOWER		0.379*** (0.111)	
PRESPOWER²		-0.0367*** (0.0120)	
PRESPOWER³		0.00100*** (0.000348)	
GOVREV		15.1 (10.8)	
GOVREV²		-74.0 (53.9)	
GOVREV³		104 (80.1)	
ASIA	-0.238 (0.325)		
LAMER	0.336* (0.175)		
EEUROPE	0.188 (0.266)		
AFRICA	-0.0658 (0.540)		
OTHER	-1.34*** (0.198)		
N	216	216	216
Root MSE	1.09	1.08	1.10
R²	0.111	0.125	0.0715

Table 24. Coefficient estimates and Newey-West (1987) robust standard errors for three versions of Model 1 estimated using alternative model specifications: one which drops the horizontal and vertical centralization terms (Model 33); one that drops the regional control variables (Model 34); and one that drops horizontal centralization, vertical centralization, and the regional control variables (Model 35). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

	<i>Model 36</i>
Intercept	-0.741 (1.39)
PLURALITY	-0.501** (0.228)
ELF	0.977 (0.621)
PLURALITY*ELF	0.511 (0.702)
PRESPOWER	0.508*** (0.132)
PRESPOWER²	-0.0416*** (0.0122)
PRESPOWER³	0.00109*** (0.000360)
GOVREV	20.6 (12.9)
GOVREV²	-59.5 (54.9)
GOVREV³	66.0 (80.0)
ASIA	-0.0240 (0.385)
LAMER	0.614** (0.250)
EEUROPE	0.00410 (0.300)
AFRICA	0.0947 (0.539)
OTHER	-0.0592 (0.734)
PRESPOWER*GOVREV	-0.406* (0.243)
N	216
Root MSE	1.07
R²	0.173

Table 25. Coefficient estimates and Newey-West (1987) robust standard errors for a version of Model 1 that additionally incorporates a basic interaction between vertical and horizontal centralization (Model 36). Significance codes are for two-sided tests, all calculated prior to rounding to three significant digits: 0.01, ***; 0.05, **; 0.10, *.

3.0 Coding the Constitutional Powers of Presidents

The coding rules that we used to code the constitutional powers of presidents, and hence to create our index of presidential powers, appear below in Table 26. They were originally created by Shugart and Carey (1992) and modified by Frye, Hellman and Tucker (2000). We note changes from Shugart and Carey in italics. Frye, Hellman and Tucker analyzed semi-presidential systems and coded the powers of both the president and the prime minister.

Legislative Powers	
Package Veto/Override	
4	Veto with no override
3	Veto with override requiring majority greater than 2/3 (of quorum)
2	Veto with override requiring 2/3
1	Veto with override requiring absolute majority of assembly or extraordinary majority less than 2/3
0	No veto; or veto requires only simple majority to override
Partial Veto/Override	
4	No override
3	Override by extraordinary majority
2	Override by absolute majority of whole membership
1	Override by simple majority of quorum
0	No partial veto
Decree	
4	<i>Unlimited (to defend the Constitution and its laws)</i>
3	<i>Decree making powers for limited time</i>
2	<i>Decrees subject to ex-post approval</i>
1	<i>Only negative decree making power (i.e. can make decrees to overrule illegal local government action)</i>
0	<i>No decree making power, or only to do what is already an executive power (i.e. to set an election date, the actual mechanism of doing so is often an executive decree)</i>
Exclusive Introduction of Legislation (Reserved Policy Areas)	
4	No amendment by assembly
2	Restricted amendment by assembly
1	Unrestricted amendment by assembly
0	No exclusive powers
Budgetary Powers	
4	President prepares budget; no amendment permitted
3	Assembly may reduce but not increase amount of budgetary items
2	President sets upper limit on total spending, within which assembly may amend
1	Assembly may increase expenditures only if it designates new revenues
0	Unrestricted authority of assembly to prepare or amend budget

Table 26 (cont. on following page). Coding rules for coding the constitutional powers of presidents.

Proposal of Referenda

- 4 *Unrestricted and only President has right to call referenda*
- 2 *Restricted or someone else can call referenda as well (most likely parliament)*
- 1 *President can call referenda, but needs Parliamentary approval as well*
- 0 *No authority to propose referenda*

Non-Legislative Powers

Cabinet Formation

- 4 *President names cabinet without need for confirmation or investiture*
- 3 *President names cabinet ministers subject to confirmation or investiture by assembly*
- 2 *President Appoints Prime Minister, and then both appoint ministers together*
- 1 *President names premier, subject to investiture, who then names other ministers*
- 0 *President cannot name ministers except upon recommendation of assembly*

Cabinet Dismissal

- 4 *President dismisses cabinet ministers at will*
- 3 *President can dismiss ministers at will, but not Prime Minister*
- 2 *President can dismiss ministers, but it is in some way restricted either by the assembly or, in the case of a president, by the prime minister.*
- 1 *EITHER President can dismiss government (or individual minister) but must have a replacement approved by the assembly first*
OR President does not have the right to initiate the dismissal of a minister or government, but does have to approve the action once initiated by someone else (usually the assembly)
- 0 *President plays no role in dismissing government or ministers*

Censure

- 4 *Assembly may not censure and remove cabinet or ministers*
- 2 *Assembly may censure, but President may respond by dissolving assembly*
- 1 *“Constructive” vote of no confidence (assembly majority must present alternative cabinet)*
- 0 *Unrestricted censure*

Dissolution of Assembly

- 4 *Unrestricted*
- 3 *Negative Restrictions (President / Prime Minister is free to dissolve assembly unless certain conditions apply, i.e. within last six months)*
- 2 *President can dissolve assembly, but it may lead to new Presidential elections as well. (Does not apply for Prime Ministers)*
- 1 *Positive Restrictions (President / Prime Minister can only dissolve assembly if certain conditions apply, i.e. the assembly has failed to pass a budget within a certain time period)*
- 0 *No Provisions*

Table 26 (cont. from following page). Coding rules for coding the constitutional powers of presidents.

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