



## **ELECTORAL PERSONALISM AND ECONOMIC POLICY**

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## ABSTRACT

What effect do a country's electoral institutions have on its economic policy? While past research has emphasized the policy consequences of majoritarian as opposed to proportional *electoral formulae*, this paper emphasizes a country's *ballot structure* and, in particular, whether or not its electoral rules allow citizens to cast *intraparty candidate votes*. I first develop a theoretical framework that yields a set of original predictions linking intraparty voting rules to the incidence of political corruption, the emphasis on redistributive social policy, and the overall size of the state. Empirical tests then confirm that intraparty voting rules exert a significant and reductive effect on the incidence of political corruption but that they do not undermine the production of egalitarian fiscal policy. Taken together, the paper's theoretical and empirical results should contribute to broader normative debates about the viability of decentralized and personalistic forms of democratic accountability.

## RESUMEN

¿Qué efectos tienen las instituciones electorales de un país sobre sus políticas económicas? Mientras que las investigaciones anteriores enfatizan las consecuencias de política de las *fórmulas electorales* mayoritarias, en contraste con las proporcionales, este artículo acentúa la *estructura de las boletas* que se usan en un país y en particular el permiso que las reglas electorales pueden dar o no a los ciudadanos para que emitan distintos votos para *candidatos de un mismo partido*. En primer lugar, elaboro un marco teórico que arroja un conjunto de predicciones originales que vinculan a las reglas electorales intra-partidarias con la incidencia de la corrupción, el énfasis en la política social redistributiva y el tamaño general del Estado. Luego, las pruebas empíricas confirman que las reglas electorales intra-partidarias tienen un efecto significativo y reductivo sobre la incidencia de la corrupción política pero no debilitan la producción de políticas fiscales igualitarias. Los resultados teóricos y empíricos de este artículo, considerados en conjunto, deberían contribuir a los debates normativos más amplios acerca de la viabilidad de las formas descentralizadas y personalistas de la rendición de cuentas democrática.



## INTRODUCTION

What effect do a country's formal electoral institutions have on its patterns of economic policy? Building on Carey and Shugart's seminal article (1995), this paper develops an original theoretical framework for understanding the political-economic consequences of two distinct institutional parameters: the *electoral formula* and the *ballot structure*, where by the latter I refer more particularly to the presence or not of rules that permit *intraparty voting*. The second section develops a series of hypotheses, grounded in past game theoretic research, which link a country's electoral institutions to the incentives its legislators have to cultivate *personalized* relationships with local constituents. The third section specifies a set of theoretical hypotheses relating electoral personalism to three aspects of a country's economic policy: the incidence of political corruption, the emphasis on redistributive social policy, and the overall size of the public sector. The fourth section tests these hypotheses with cross-sectional data on electoral rules and economic policy.

The empirical results provide evidence that supports one of the paper's most basic hypotheses, namely that intraparty voting rules should have a significant reductive effect on the incidence of political corruption. Furthermore, and in contrast to findings from past research (e.g., Persson, Tabellini, and Trebbi 2003; Persson and Tabellini 2003; Kunicova and Rose-Ackerman 2005), the results suggest that a country's electoral formula has little consequence for aggregate rent-seeking patterns. However, electoral formulae exert a relatively stronger impact than ballot structures when it comes to the size of a country's public sector. Finally, the explanatory power of both formulae and ballot structures washes out in analyses of spending on redistributive social programs, where an overwhelming demographic variable, the percentage of the population over 65 years of age, "crowds out" any and all institutional effects. After summarizing the paper's results and implications, the concluding section addresses a number of future avenues for empirical research on the political economy of electoral institutions.

Over the last two decades, legislative electoral institutions have emerged as an important explanatory variable in studies of economic policy. A large majority of such studies have employed the classical distinction between *majoritarian* (MAJ) and

*proportional* (PR) electoral formulae to explain policy variation across both time and space. A distinct body of research in comparative electoral studies has noted the impact of electoral institutions on legislative candidates' incentives to cultivate a *personal vote*, defined as a bloc of electoral support that is grounded solely in a candidate's personal identity, and which is not tied to the candidate's party-affiliation.<sup>1</sup> The 1995 article by Carey and Shugart mentioned above constitutes the most ambitious effort to date at ranking electoral systems according to the incentives they provide for personal vote seeking. Among many other things, Carey and Shugart's schema suggests that *open-list proportional representation* (OLPR), along with other systems that grant voters the power to cast intraparty candidate votes, should be significantly more personalistic than MAJ systems of the variety found in Canada and the United Kingdom.

While fairly exhaustively leveraging the MAJ-PR distinction, comparative political economy has been slower to incorporate electoral personalism as an explanatory parameter. There are, however, a number of prominent exceptions. Hallerberg and Marier (2004) argue that systems that foster personal vote seeking should generate greater *budget deficits* than those that do not.<sup>2</sup> Also following Carey and Shugart's framework, Chang and Golden (2007) argue that OLPR systems should be particularly personalistic in *large electoral districts*. With the case of postwar Italy as their prime example, they argue that this personalism should generate *political corruption* by making electoral campaigns expensive and dependent on revenue from corrupt practices.

Another set of papers departs from Carey and Shugart's framework, suggesting that simple MAJ systems in single-member districts should actually generate *greater* personal accountability than OLPR systems; and that OLPR should generate levels of personal accountability *intermediate* to high accountability MAJ systems and low accountability *closed-list proportional representation* (CLPR) systems, i.e., PR systems without intraparty candidate voting (Persson, Tabellini, and Trebbi 2003; Persson and

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<sup>1</sup> Implicitly, the notion is that candidates with strong personal voting blocs would maintain these constituents' support even if said candidates changed their party affiliation.

<sup>2</sup> Where electoral institutions generate strong incentives for legislators to create personal voting blocs, a common-pool problem will emerge in the legislature: individual MPs will concern themselves only with serving their particular personal constituencies and will not internalize the associated costs for the aggregate budget balance.

Tabellini 2003; Kunicova and Rose-Ackerman 2005).<sup>3</sup> Further, and in contrast to Chang and Golden (2007), these same papers argue that increased personal accountability should in fact *reduce* political corruption by constraining legislators' ability to get away with graft.<sup>4</sup>

A number of unanswered questions emerge from this brief literature review. Most basically, what are the relative merits of MAJ as opposed to OLPR systems in generating incentives for electoral personalism? The aforementioned notion in corruption studies that MAJ systems should generate higher levels of personalized accountability than OLPR systems contradicts the schema provided by Carey and Shugart, in which OLPR systems such as those found in Brazil and Finland are ranked as significantly more personalistic than most common MAJ systems. The next section presents the outline of a game-theoretic model, fully solved elsewhere (Kselman 2011), that allows us to evaluate these competing claims. The results highlight the uniquely personalistic incentives that emerge from the interaction of inter- and intraparty dynamics in OLPR systems and extend the insight to a distinct class of systems, labeled *open-list majoritarian (OLMAJ)*, in which equally strong personalistic incentives arise. Counter to received wisdom, the theory also identifies conditions under which CLPR systems might actually generate greater incentives for legislative personalism than MAJ systems, highlighting partisanship patterns and district magnitudes as crucial intervening variables.

Having presented a theoretical framework linking electoral institutions to the incentives for legislative personalism, in the third section the paper then develops a set of hypotheses linking legislative personalism to patterns of rent seeking and fiscal policy. In so doing, it addresses a second unresolved issue from the above literature review: Does legislative personalism increase corruption by forcing legislators to illicitly finance expensive electoral campaigns? Or does it reduce corruption by creating especially strong

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<sup>3</sup> Consider the following quotations: a) "The possibility of holding individual politicians accountable through open-lists seems a less powerful deterrent [for corruption] than individual ballots associated with plurality rule" (Persson and Tabellini 2003, 195–96); b) "Because open-list proportional representation systems share features of both closed-list proportional representation and plurality systems, they occupy an 'intermediate' category in monitoring corrupt self-enrichment" (Kunicova and Rose-Ackerman 2007, 585).

<sup>4</sup> A growing consensus in this literature claims that "proportional representation (PR) systems are more susceptible to corrupt political rent seeking than plurality systems" (Kunicova and Rose-Ackerman 2005, 573).

ties of accountability between voters and their representatives? As addressed in the conclusion, the answer this paper provides forms part of a broader empirical and normative debate about the desirability of decentralized mechanisms of democratic accountability.

### **LEGISLATIVE EQUILIBRIA UNDER ALTERNATIVE ELECTORAL RULES**

In what follows, I shall present the results of a game-theoretic model that I have fully analyzed and solved elsewhere (Kselman 2011).<sup>5</sup> I begin by outlining the model's strategic logic under alternative electoral institutions and then provide a series of figures (Figures 1, 2, and 3 below) that capture the model's predictions about the relationship between electoral institutions and the incentives to cultivate a personal voting bloc. The model's central actors are incumbent legislators.<sup>6</sup> These legislators must optimally divide a fixed level of "effort" between two distinct activities: a) pursuing the interests of local constituents in their home districts via the provision of pork, ombudsman services, clientelistic access to public sector goods and services, etc.; and b) pursuing their own personal and/or material interests. In keeping with the voluminous literature on American congressional politics, these two activities can be loosely defined as "working" and "shirking." All things equal, incumbent legislators would prefer to devote as much effort as possible to the pursuit of their own interests. However, effort devoted to securing the interests of local constituents will increase their party's district-level vote share, which may be crucial for securing reelection. This potential tradeoff between "shirking" and "office seeking," and its relationship to the electoral institutions in place, will structure the forthcoming theoretical results.

Voter choice in this model is *retrospective* and is impacted by two distinct considerations: a) the amount of personalistic effort that parties' incumbent legislators

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<sup>5</sup> The full text of the book chapter in which this model was published can be found at the following website: [http://polisci.wustl.edu/files/polisci/Z.8.xxxbaiona.proofcoverSchofield\\_july1.pdf](http://polisci.wustl.edu/files/polisci/Z.8.xxxbaiona.proofcoverSchofield_july1.pdf).

<sup>6</sup> The results reported here come from a purely legislative model in which backbenchers interact strategically with one another but not with a party's executive leadership. In past work (Kselman 2008) I have begun the process of embedding the legislative equilibrium reported here as "subgames" of a broader model in which a party's executive leadership must make strategic decisions, taking into account the downstream legislative incentives defined by a country's electoral rules.

devote to their particular locality; and b) their exogenous partisan “bias” towards one or another party organization, which captures any number of preference traits not related to the receipt of personalistic effort from incumbent legislators (party identification, a party leader’s charisma, etc.). The game tree proceeds as follows: in a first stage, all incumbents allocate their fixed unit of effort between serving local constituents and serving their own interests; in a second stage, an election is held in which voters choose among the competing parties, based on both their partisan bias and the amount of personalistic effort their district receives from parties’ legislative incumbents; and in a third stage, votes are aggregated and seats allocated according to the electoral rule in place.

### **Underlying Strategic Dynamics**

I first report the model’s results in MAJ legislative elections with single-member electoral districts (of the variety found in the United Kingdom, the United States, Canada, etc.). In this context, identifying legislators’ optimal allocation of effort between constituency service and “rent seeking” is a *decision-theoretic* problem: voter choice is not affected by the behavior of non-incumbent challenger candidates, nor is it affected by the behavior of incumbents from other districts.<sup>7</sup> As such, incumbent legislators face a fairly straightforward calculation: they will expend enough effort on constituency service to gain reelection as long as the benefits of this effort expenditure outweigh its costs. These benefits are captured by the value that individual legislators attach to holding office, while the costs can be measured as the *opportunity costs* of not devoting effort to securing one’s own personal and/or material interests (i.e., shirking). Opportunity costs are lower when voters are heavily biased towards the local incumbent’s party

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<sup>7</sup> I have studied extensions of the model in which voters attach some importance to challenger candidates’ effort allocations and in which voters’ partisan biases may be affected by the behavior of legislators from different districts. Both extensions introduce game-theoretic calculations into the simple case of MAJ elections with single-member districts. However, as long as incumbents have a minimal resource advantage over challenger candidates, and as long as voters attach a minimally higher level of importance to their own legislator’s behavior as compared to that of legislators from other districts, the model’s implications remain unchanged. I describe the simplest version here.



organization, i.e., reelection is less “costly” when incumbents can count on voter support without having to engage in constituency service activities.

In PR systems any increase in a party’s district-level vote share will affect all incumbents from the same district. When deciding on an optimal allocation of effort between “working” and “shirking,” a district’s incumbents must thus take the effort allocations of other district-level incumbents into account. As such, unlike the single-member district case in which legislative effort allocations resulted from decision-theoretic calculations, the PR model in multimember districts is explicitly *game theoretic*. The key distinction between CLPR and OLPR systems lies in the determination of candidates’ relative positions on their party’s electoral list. In the former, list positions are fixed prior to the election according to political parties’ respective internal nominating procedures.<sup>8</sup> As a result, the game’s equilibrium outcomes depend crucially on the mechanisms used to model organizational nominating procedures and, in particular, on whether these procedures reward incumbents for allocating effort to constituency service.

My above-cited paper solves the CLPR game in two distinct circumstances. In the first, a seniority rule exists which grants incumbent legislators higher list positions than non-incumbents and which does not take into account incumbents’ relative allocation of effort to working and shirking. In this case, in the game’s unique Nash Equilibrium *only one* of any district’s incumbent legislators ever devotes positive effort to constituency service; all other district-level incumbents devote 100 percent of their effort to “shirking.”<sup>9</sup> Secondly, the paper analyzes a list formation mechanism in which list positions are in fact a function of incumbents’ effort allocations and, in particular, in which an incumbent’s list position increases (decreases) according to the amount of effort he or she allocates to constituency service (shirking). While, as demonstrated below, this

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<sup>8</sup> In some instances, party leaders are given a free hand in determining candidates’ placement on electoral lists (e.g., Turkey). In others, list order is determined by the outcome of intraparty elections at regional nominating conventions (e.g., Sweden and Norway). Regardless, general-election voters in CLPR systems choose only between competing political parties and cannot overturn a party’s organizationally determined list order.

<sup>9</sup> The single legislator who may in equilibrium devote positive effort to constituency service is the district’s *marginal incumbent*: the legislator who “just misses” earning reelection when all other incumbents devote 100 percent of their effort to “shirking,” i.e., to securing their own personal and/or material interests.

mechanism generates higher levels of equilibrium constituency service than emerged under the simple seniority rule, it still fails to generate the uniquely strong incentives for constituency service that emerge in OLPR systems, to which I now turn.

In addition to casting their ballot for one party or another party, in OLPR systems voters may cast candidate votes for specific individuals from within a party's electoral list, which then determine candidates' list positions.<sup>10</sup> The institution of candidate voting thus builds a connection between effort allocations and list order into the general election itself. While an incumbent's quest for candidate votes emerges for purely competitive reasons, it also has certain "positive externalities" for fellow incumbents from *all parties*: a) constituency service effort designed to secure candidate votes also *increases* the district-level vote-share of one's party, thus benefiting co-partisan incumbents; and b) the same constituency service effort also *decreases* the number of preference votes that will be available to non-incumbent challenger candidates from any party, thus indirectly benefiting incumbents from opposing political parties.

Like the MAJ model above, in the OLPR model voters' partisan biases exert an important effect on equilibrium effort allocations. When voters are sufficiently biased towards one party or another (i.e., sufficiently "non-responsive" to constituency service), then OLPR generates levels of personal vote seeking only slightly greater than MAJ and CLPR systems. On the other hand, as partisan biases become less determinative of voting behavior, OLPR Nash Equilibria become heavily personalistic. In particular, as long as a minimal portion of the electorate demonstrates some responsiveness to constituency service, OLPR competition will result in what I have named "Mutually-Assured Reelection Nash Equilibria" (Kselman 2011): in any electoral district, all district incumbents from a particular political party devote *identical* levels of effort to constituency service; and the district-level constituency service efforts of incumbents from competing political parties are sufficient to keep one's own intraparty challengers from securing office. These strategic characteristics are a direct result of the semi-cooperative positive externalities noted above.

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<sup>10</sup> The candidate with the most preference votes wins the first list position, the candidate with the second-most preference votes the second list position, and so on.

## Comparative Static Institutional Predictions

The theoretical results described to this point apply to individual electoral districts. In order to specify comparative static predictions as to the effect of moving from one electoral system to another, the same paper (Kselman 2011) develops an indicator to capture the aggregate prevalence of constituency service and shirking generated by a particular electoral system across an entire legislature. I denote institutions with the marker  $I \in \{MAJ, CLPR, OLPR\}$ , and label the aggregate level of partisanship in an electorate as  $\ell \in [0,1]$ . Technically speaking,  $\ell$  represents the percentage of voters who would vote for the current incumbent party, even if this party devoted *no* effort to constituency service in their particular locality. We can then define *total constituency service* as  $T^*(I, \ell)$ : this is simply the sum of all constituency effort exerted, in equilibrium, by incumbents from all parties, given a particular electoral institutional framework, a particular partisanship status quo, and a particular set of incumbent legislators

The following  $T^*(I, \ell)$  plots are directly reproduced from my paper.<sup>11</sup> Consider a generic legislature of 200 seats. In MAJ systems the 200 incumbents represent single-member districts. In PR systems, begin with a case in which these 200 seats are divided into 20 separate districts, each of which has a magnitude of 10, and assume that the *simple seniority rule* defines list formation in CLPR systems. Figure 1 plots values of  $T^*(\cdot)$  for all three institutions at all possible values of  $\ell \in [0,1]$ , which move in descending order from left to right on the figure's x-axis.

The explicitly marked values of  $\ell$  represent key points of inflection on at least one of the  $T^*(\cdot)$  plots. The first thing to note is that, aside from situations of unusually

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<sup>11</sup> Without loss of generality and in order to facilitate parsimonious presentation, the plots in Figures 1, 2, and 3 hold a number of exogenous parameters constant. Firstly, they arise from a game in which all incumbents belong to one of only two political parties. Secondly, they assume that levels of party loyalty are identical across all of a country's electoral districts. Thirdly, these plots are derived for a legislature in which one party has a fairly slim legislative majority over the other. All implications as to the relationship between electoral institutions and personal vote seeking translate to situations in which the number of parties is greater than two, and in which partisanship levels vary across districts, and for any exogenous distribution of parties' incumbents across legislative districts.

high party loyalty ( $\ell > \frac{11}{12}$ ), OLPR always generates higher levels of constituency service and lower levels of legislative rent-seeking than both MAJ and CLPR. Recall from above the increasingly common wisdom that OLPR should be an “intermediate” institution, generating levels of working and shirking somewhere between high accountability MAJ systems and low accountability CLPR systems. This argument is not born out when subjected to game-theoretic analysis: OLPR is in fact a qualitatively unique institution, generating higher levels of working and lower levels of shirking than either MAJ or CLPR systems. Note also that the relationship between  $T^*(CLPR)$  and  $T^*(MAJ)$  varies according to levels of partisanship in the electorate. For  $\ell > \frac{1}{2}$ , CLPR may at times generate slightly higher levels of constituency service than MAJ, although neither institution generates much constituency service to speak of. Once loyalty levels move below  $\ell < \frac{1}{2}$ , MAJ quickly outpaces CLPR in generating constituency service.

Carey and Shugart (1995) argue that the effect of district magnitude on the incentives to cultivate a personal voting bloc is conditional and, in particular, that larger districts should *increase* the incentives for personalism in systems such as OLPR, where voters and not party leaders control list positions; but that larger districts should *decrease* the incentives for personalism in systems such as CLPR. Figure 2 again plots  $T^*(\cdot)$  in a legislature of size 200, but this time it assumes that PR systems are composed of 40 districts with a district magnitude of 3 and 40 districts with a district magnitude of 2, such that the average district magnitude is significantly lower than that of the previous simulation.

FIGURE 1

AGGREGATE CONSTITUENCY EFFORT

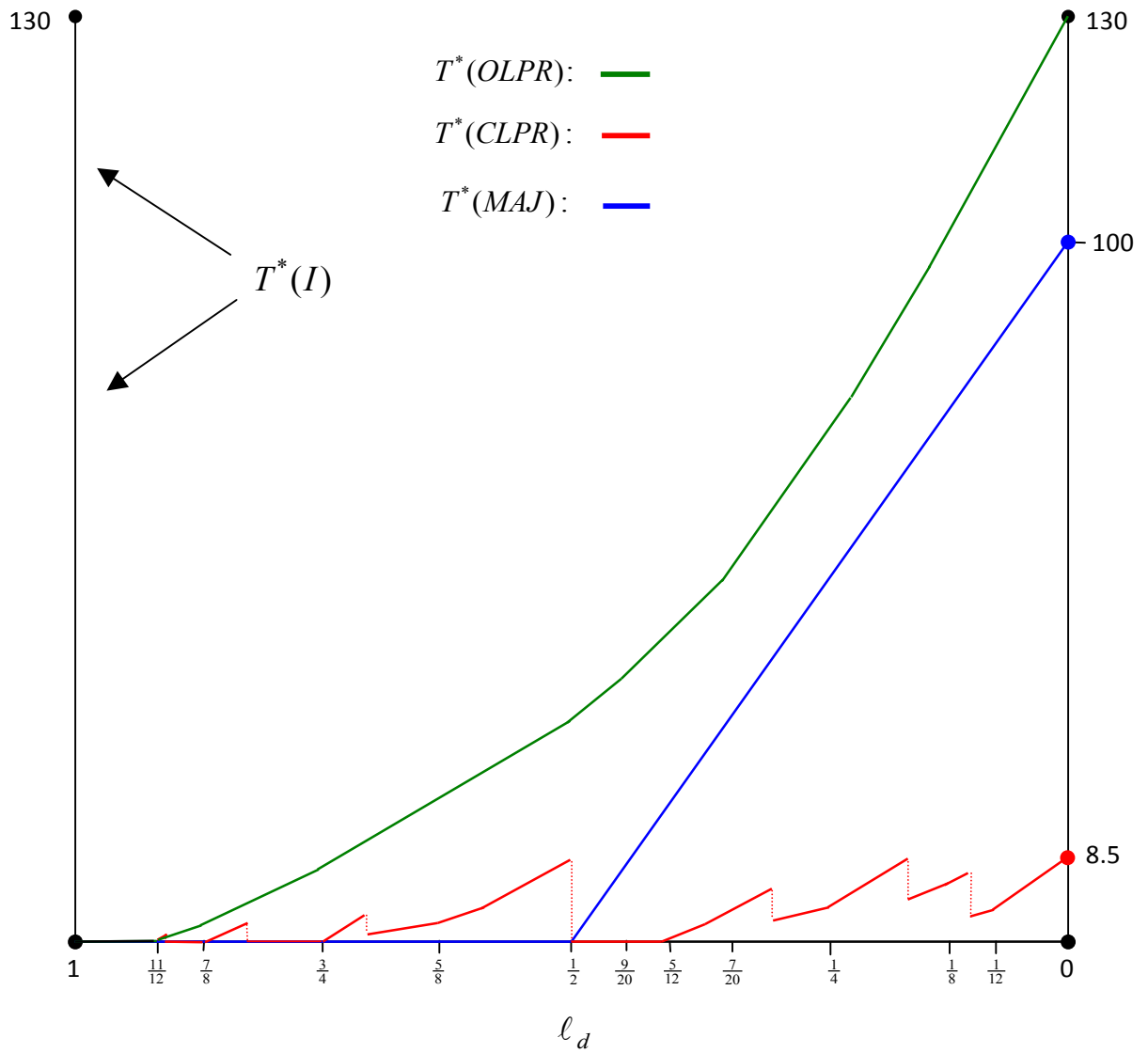
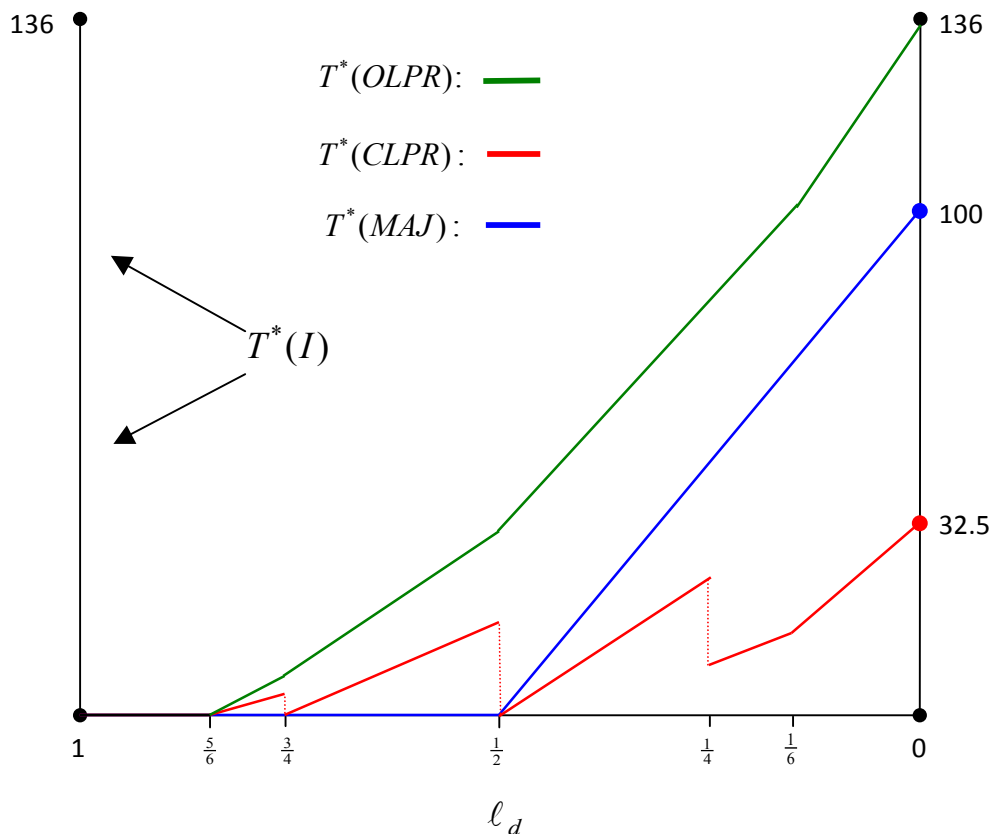


FIGURE 2

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 AGGREGATE CONSTITUENCY EFFORT AT LOWER DISTRICT MAGNITUDES
 

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Once again, except at the very highest levels of partisanship OLPR outpaces both CLPR and MAJ in generating constituency service and constraining political corruption. As well, smaller districts have the effect of *amplifying* the distinction between CLPR and MAJ when  $\ell > \frac{1}{2}$  and *dulling* this distinction when  $\ell < \frac{1}{2}$ . At higher levels of party loyalty CLPR now significantly outperforms MAJ in generating constituency service, while at lower levels CLPR no longer lags as far behind MAJ as in the previous simulation.<sup>12</sup> Put otherwise, Carey and Shugart's conditional hypothesis is born out when

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<sup>12</sup> Recall from above that under the simple seniority rule only one legislator in any electoral district ever devotes effort to constituency service. In turn, CLPR will generate more constituency service when it is characterized by many small districts than when it is characterized by a few large districts.

it comes to CLPR systems. On the other hand, their conditional hypothesis *is not* born out in OLPR systems: rather than generating *higher* levels of constituency service when districts are large,  $T^*(OLPR)$  changes little with district magnitudes and, if anything, is slightly *higher* at lower magnitudes.

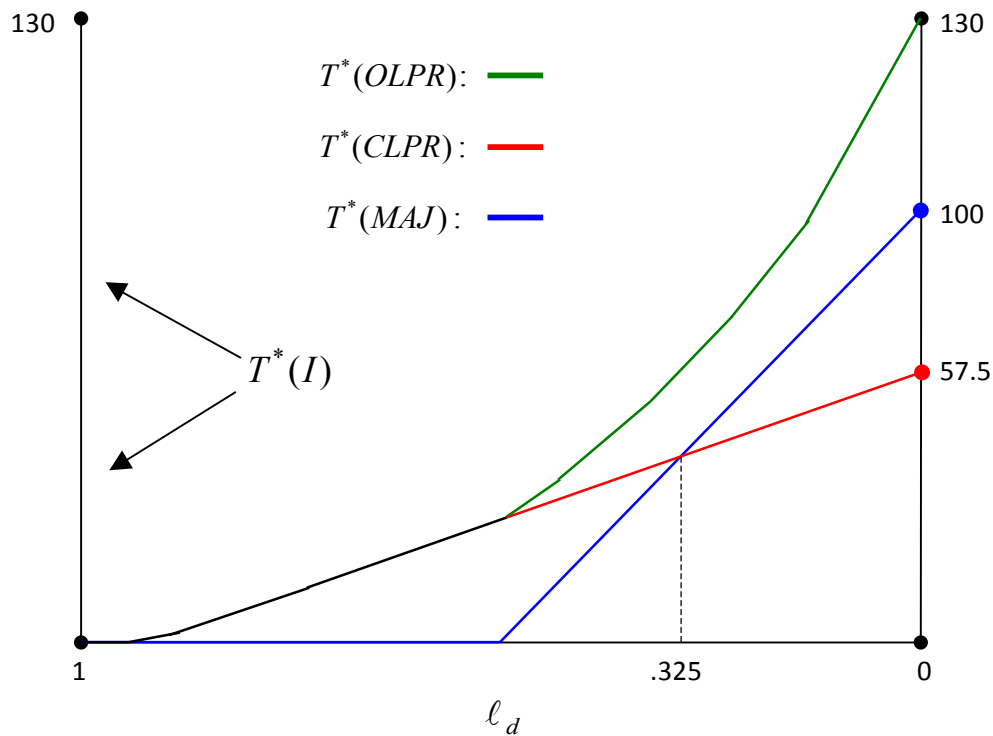
Figure 3 returns to a 200 seat legislature divided into 20 districts of magnitude 10, but reports the results of a model in which, rather than assuming list formation in CLPR systems is determined by a simple seniority rule, it is assumed that CLPR list order is a direct reflection of incumbents' constituency service efforts. In this situation, for levels of partisanship higher than  $\ell = \frac{1}{2}$  we see that OLPR and CLPR generate identical levels of constituency service and that both generate substantially higher levels of personal vote seeking than MAJ systems. Once partisanship drops below  $\ell = \frac{1}{2}$ , OLPR once again significantly outpaces both other systems. Note also that the contingent distinction between CLPR and MAJ systems becomes further emphasized in this plot: CLPR actually far outperforms MAJ at higher levels of partisanship, and electoral personalism under MAJ systems only overtakes that of CLPR at fairly low levels of partisanship ( $\ell = .325$ ). Of course, the assumption that CLPR list positions are a direct reflection of incumbents' legislative efforts is strong, and one might expect the precise role of constituency service in list formation processes to be somewhere between the seniority rule's pure exogeneity and the pure determinacy of the present mechanism.<sup>13</sup>

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<sup>13</sup> For example, Szwarcberg (forthcoming) demonstrates that political party leaders in Argentina are often unable to precisely identify an MP's constituency efforts, which in turn allows some MPs to garner high list positions despite appropriating a lion's share of their political resources for personal use.

FIGURE 3

**AGGREGATE CONSTITUENCY EFFORT WITH ENDOGENOUS  
CLPR LIST FORMATION**



To summarize, unless we make the unlikely assumption that list order in CLPR systems is a perfect reflection of candidates' constituency service efforts, the model's basic predictions can be stated outright: OLPR outperforms both MAJ and CLPR in generating constituency service at all but the highest levels of electoral partisanship (in which case  $T^*(I) = 0$  for all three institutions); and at higher (lower) levels of partisanship CLPR (MAJ) generates greater aggregate constituency service than MAJ (CLPR). The latter prediction is especially pronounced when CLPR systems are divided into many small districts and when constituency service efforts play an important role in CLPR list formation processes.



These results can be extended to other institutions with intraparty voting.<sup>14</sup> Consider first the Single-Non-Transferable Vote (SNTV) in multimember districts, as used in Taiwan and Japan prior to the 1993 electoral reforms. Like OLPR, this institution allows voters to determine the intraparty allocation of seats to the various candidates from within a party's list. Unlike in OLPR, votes in SNTV do not pool to the party level: a party's total votes, aggregated across all candidates in an electoral district, do not have a direct effect on that party's district-level seat total. Despite this important difference, it turns out that OLPR and SNTV in multimember districts are *strategically equivalent*, at least when it comes to incentivizing personal vote seeking. Put otherwise, the Mutually-Assured Reelection Nash Equilibria that characterize the OLPR model emerge *identically* if the electoral rule is changed to SNTV in multimember districts.<sup>15</sup>

One can also demonstrate a similar strategic affinity between OLPR and the Single-Transferable Vote (STV) as employed in Ireland. As in SNTV systems, in STV systems votes are not pooled across all of a party's district-level candidates; however, unlike SNTV systems, under STV voters may cast more than one vote: they may rank all of a district's legislative candidates in order of preference. Despite this important distinction it turns out that, under fairly general assumptions as to voters' optimal ranking behaviors, the Mutually-Assured Reelection Nash Equilibria that characterize both OLPR and SNTV emerge if the electoral rule is changed to STV. Both SNTV and STV can be labeled *open-list majoritarian* (OLMAJ) systems, i.e., systems that employ some form of plurality-counting formula but also allow voters to cast candidate votes that determine the intraparty allocation of legislative seats.<sup>16</sup>

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<sup>14</sup> Proofs of the following extensions to hybrid systems such as the Single-Non-Transferable Vote (SNTV) and Single-Transferable Vote (STV) are available upon request. They will be included in a subsequent working paper which devotes itself to a more exhaustive formalization of Carey and Shugart's conceptual framework.

<sup>15</sup> Of course, this is not to say that OLPR and SNTV are identical; the presence of vote pooling is very likely consequential for any number of political phenomena. That said, when it comes to legislative constituency service in the above model, the incentives introduced by intraparty candidate voting in both systems are strong enough to nullify the absence of vote pooling in SNTV, a theoretical fact that is illuminating when considering the strong parallels between, for example, OLPR elections in Brazil and pre-1993 Italy and SNTV elections in Taiwan and pre-1993 Japan.

<sup>16</sup> Note that intraparty choice also occurs when parties nominate candidates in participatory primary elections. Although comparable cross-national data on candidate nomination procedures

## LEGISLATIVE PERSONALISM AND ECONOMIC POLICY

These results highlight the importance of intra-party voting in defining incumbents' incentives to cultivate personal voting blocs. Having presented a theoretical framework linking electoral institutions to legislative personalism, I now develop a series of hypotheses that tie personalism to patterns of economic policy. Following Persson and Tabellini's (2003) treatment of the subject, I shall focus on three particular policy domains: the presence or not of political corruption, the extent of socioeconomic redistribution, and the size of the public sector.

### Legislative Personalism and Corruption

As demonstrated in the paper's introduction, the literature on electoral rules and corruption contains a number of implicitly competing hypotheses. The first issue concerns the precise relationship between electoral rules and the incentives for personalism: Persson and Tabellini (2003) and Kunicova and Rose-Ackerman (2005) emphasize the personalism generated by MAJ systems, while both Chang and Golden (2007) and Gingerich (2009) highlight the personalism characteristic of OLPR systems. The theoretical material from The second section suggests that the latter are on the right track. The second implicit disagreement in these hypotheses concerns the precise relationship between personalism and corruption: Persson and Tabellini (2003), Kunicova and Rose-Ackerman (2005), and Gingerich (2009) argue that personalized accountability patterns should reduce corruption, while Chang and Golden (2007) argue the opposite. The latter suggest that highly personalistic campaigns will be expensive and that legislators in personalistic systems will be forced to turn to corruption in order to finance said campaigns. Research on clientelism also suggests that personalized forms of accountability may generate corrupt practices (Szwarcberg forthcoming; Singer 2011) by allowing legislators to divert fungible resources to their own stock of financial and material wealth. Indeed, it is not uncommon to find fault with forms of electoral linkage

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are elusive, Carey and Shugart identify only the United States as a country with truly participatory legislative primaries. All subsequent empirical results remain unchanged regardless of whether I code the United States as a system with intraparty choice or as one without.

that depart from the ideal typical “responsible party government” model, in which voter choice is a function of programmatic stances and elected officials are judged on the basis of their ability to deliver universally applicable policy programs.<sup>17</sup>

However, criticizing personalism as a less than ideal form of political accountability and equating it with political corruption are different propositions. While personalism may certainly coexist with political corruption, I follow Gingerich (2009) in suggesting that the causal impact of legislative personalism must be understood *counterfactually*. In particular, to specify the role of personalism in generating corruption we must ask the following question: all else constant, how would changing from a personalistic system to a non-personalistic system affect incentives for political corruption? Discussing the distinction between CLPR in Argentina and OLPR in Brazil, Gingerich argues that, while personalism certainly coexists with corrupt practices in Brazil, those recommending a switch to CLPR fail to understand that corruption would be *even higher* without personalistic incentives.

In a slightly different vein, Keefer (2007) notes that particularized policy may operate as a “second-best” political-economic alternative when informational constraints undermine candidates’ programmatic policy commitments. In such situations the menu of policy options is more likely to offer a choice between particularism and outright graft rather than a choice between particularism and public good provision. Put otherwise, a more decentralized and personalized form of public policy provision will be the “best game in town.” The theory in the previous section suggests that, in such situations, electoral systems that feature intraparty voting should tilt public policy incentives towards particularism, and *away from graft*, when compared to simple MAJ systems and CLPR systems.

Extending this line of reasoning helps to illuminate a likely reason why particularism and corruption are so often conflated: the two are facilitated by the presence of shared institutional and environmental correlates. For example, as detailed in the empirics below, the capacity to effectively engage in rent seeking will be impacted by a number of socioeconomic, legal, and cultural factors distinct from the electoral system.

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<sup>17</sup> Certainly, more personalized forms of accountability may generate an under-provision of public goods (Keefer 2007) and may also create political dissatisfaction threatening to the democratic status quo (Stokes 2005).

The same environmental factors are also likely to determine the extent to which political competition is suited to the provision of public goods or, alternatively, to situations in which particularism is the “best game in town.” Low levels of socioeconomic development, little experience with democratic competition, certain elements of a country’s legal and bureaucratic heritage, all will likely generate contexts which are *both* conducive to rent seeking and inhibiting of public good provision. Thus it is not uncommon to observe particularism and corruption in the same political context and not unreasonable to infer a causal connection between the two.

However, counterfactual logic suggests that it is in exactly these circumstances, i.e., circumstances where public good provision is impeded and there exists little else to constrain rent-seeking legislators, that personalist incentives should be most effective in tilting the balance of public policy *away from* outright political graft. On the other hand, in systems where corruption is fairly well constrained by various elements of the political environment, the reductive effect of personalism should be muted. When combined with the previous section’s theoretical material, this discussion leads to the following two hypotheses, one that presents a categorical prediction and a second that captures the way in which electoral rules should interact with the surrounding political context:

**H1:** Electoral systems with intraparty voting (OLPR and OLMAJ) should generate higher levels of personalism and lower levels of corruption than their MAJ and CLPR counterparts.

**H2:** The reductive effect of intraparty voting on political corruption should be stronger and more significant when corruption is not already constrained by various elements of the surrounding socioeconomic, legal, and cultural environment.

### **Legislative Personalism and Fiscal Policy**

I now address the relationship between electoral rules and two elements of a country’s fiscal policy: its commitment to redistributive socioeconomic policies and the overall size

of the public sector. In a series of influential papers on the redistributive consequences of proportional representation, these two policy outcomes are assumed to be in fact co-phenomenal, i.e., the choice of an equilibrium tax rate simultaneously determines a state's redistributive emphasis and its size. For example, Iversen and Soskice (2006) argue that the coalition bargaining that characterizes PR systems should provide middle-class voters with reassurance against expropriation by the left, which in turn will allow the lower and middle classes to cooperatively expropriate the rich and divide the spoils.<sup>18</sup> In a different set of papers the choice of redistribution and public sector size are not taken as co-phenomenal, i.e., it is possible to have large public sectors without devoting intense effort to redistributive economic policy. Both Persson and Tabellini (2000, 2003) and Milesi-Ferretti, Perotti, and Rostagno (2002) present theoretical results that suggest that single-member district MAJ systems should generate a heavier dose of geographically targeted “pork” projects than PR systems, while PR systems should generate a greater emphasis on redistributive policies targeted to more broadly conceived social constituencies. Although not co-phenomenal with redistribution, in these papers PR systems also generate larger states (i.e., higher equilibrium tax rates) than MAJ systems due to the fact that broadly conceived policy programs are more costly to implement than geographically targeted pork policies.<sup>19</sup>

Note that the personalism defined in this paper and modeled above is a patently geographic phenomenon. Although the provision of social policy is not explicitly addressed in the above framework, the fact remains that the tradeoff between devoting policy effort to redistributive social policies and devoting policy effort to narrowly targeted geographic constituencies is pervasive in democratic budgeting. In turn, this provides suggestive grounds for the hypothesis that *higher* levels of legislative

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<sup>18</sup> Similarly, Austen-Smith (2000) suggests that the incentive to target voters below the median income level in PR systems should flatten the post-tax income distribution as compared to MAJ systems, in which the median voter's preferences are pivotal. In contrast, Long Jusko (2009) argues that, when less well-off voters are geographically concentrated, politicians will tend to generate higher redistribution in single-member district MAJ systems than in multimember PR systems.

<sup>19</sup> Other research suggests that electoral institutions that privilege geographic representation should inhibit redistributive policy by creating entrenched and geographically concentrated “veto” players capable of blocking social policy proposals (Huber and Stephens 2001; Alesina, Glaeser, and Sacerdote 2001).

personalism, which imply a greater geographic emphasis in public policy making, will be associated with *lower* levels of effort devoted to more broadly targeted social policies. Furthermore, taking into account the above result that an emphasis on social policy is costlier than an emphasis on geographic targeting, it is also natural to hypothesize that higher levels of personalism will be associated with smaller overall public budgets.

**H3** and **H4**: Electoral systems that permit intraparty voting should generate *lower levels of redistribution and smaller states* than their CLPR and MAJ counterparts.

Among the set of original hypotheses developed here, **H3** and **H4** are naturally a bit more speculative than **H1** and **H2** above, since the second section's theoretical framework contains an explicit choice to engage in "shirking" but not one to set a tax rate and/or promote social policy. That said, **H3** and **H4** nonetheless comport with our commonly held wisdom as to the redistributive effects of decentralized and geographically oriented public policy and represent a reasonable first-cut prediction as to the relationship between intraparty voting and legislative personalism and fiscal policy.

### **ELECTORAL INSTITUTIONS AND ECONOMIC POLICY: WHAT THE DATA SAY**

I now test hypotheses **H1–H4** with cross-national data on electoral institutions and economic policy. Before doing so, however, it is worth quickly raising an issue that will be addressed at greater length in the concluding section. Note that this paper's causal story contains two steps: first, I develop a framework to explain the effect of electoral institutions on legislators' incentives to cultivate a personal vote; second, I develop a set of hypotheses linking legislative personalism to economic policy. From this perspective, legislative personalism can be thought of as the *mechanism* via which electoral rules exert their impact on policy outcomes. In what follows I examine the relationship between electoral institutions and economic policy directly, without providing explicit empirical analysis of the causal mechanism, i.e., legislative personalism. As argued in the conclusion, the absence of causal mechanisms in empirical tests is in fact ubiquitous to research on the political economy of electoral institutions (including those contributions

reviewed above) and arises in part from the lack of cross-nationally comparative data on differing patterns of democratic accountability. Although gathering such data is plagued by a number of enduring challenges, the concluding discussion highlights some developing data sources that will help to mitigate the problem in future research.

This section's goal is not only to investigate the current paper's hypotheses regarding intraparty voting and economic policy but also to assess the *relative* explanatory importance of intraparty voting and the more traditional MAJ/PR distinction in defining policy patterns. To do the latter, I merge a new set of institutional measures with Persson and Tabellini's publically available cross-national data set on constitutions and economic policy (<http://people.su.se/~tpers/data.htm>). This data set covers 85 contemporary democracies at the time point 1997–98 and contains both a host of institutional measures and an exhaustive catalogue of control variables identified as important in past studies of political corruption and fiscal policy.<sup>20</sup>

For the time point 1997–98, I have created the variables OL\_PR, CL\_PR, OL\_MAJ, and CL\_MAJ, each of which measures the percentage of a country's legislators elected under the relevant electoral system (some “mixed” systems combine more than one type of electoral rule). The variables OL\_PR and CL\_PR are self-explanatory, capturing the percentage elected under closed- and open-list PR systems respectively. CL\_MAJ captures systems such as the British plurality rule system in single-member districts and Singapore's list plurality system in multimember districts, both of which implement plurality rule voting formulas without giving voters the option of casting intraparty candidate votes. OL\_MAJ captures systems such as the SNTV, the STV, the BLOC vote,<sup>21</sup> and other multimember district systems that combine some form of plurality rule with intraparty choice. The Data Appendix presents all countries'

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<sup>20</sup> As noted in the conclusion, gathering reliable pooled time series data on ballot structures constitutes an important but challenging next step for this research and one that I look forward to taking in the medium term. The analyses that follow constitute nonetheless an important first cut at investigating the extent to which previous results, which have informed much of our common wisdom, stand up to replication and reanalysis and at establishing a suggestive battery of baseline statistical results relating intraparty choice to economic policy variance.

<sup>21</sup> The Bloc Vote is a pluralitarian system, used in multimember districts, in which voters are allowed as many votes as there are seats in the district, but may not cast more than one vote for the same candidate (systems in which the latter is possible are called *cumulative voting* systems). Voters can thus choose to support all of a district's candidates, one of a district's candidates, or something in between (i.e., some subset of a district's candidates).

individual values on the four original measures, along with coding rules used in their creation (Figure A1). In most cases a country's value on these variables is either 0 or 1; the few countries that use mixed systems may have fractional values on two of these measures. For the latter cases, a country's *predominant system* is defined as the system used to elect a majority of its legislators.<sup>22</sup> In the 84-country dataset, 14 countries are completely or predominantly OL\_PR, 33 are CL\_PR, 31 are CL\_MAJ, and 6 are OL\_MAJ. (At the time Russia was perfectly divided between PR and MAJ institutions, and thus technically had no predominant system.)

Hypotheses **H1–H4** provide predictions as to these systems' relative tendency to constrain political corruption, provide redistributive social policy, and generate large public sectors. To facilitate replication and comparison, I adopt Persson and Tabellini's measures of these three dependent variables. Corruption is captured with the indicator GRAFT, a transformed measure of the World Bank's corruption index for which higher values indicate a greater presence of corruption, with a mean of 4.14 and standard deviation of 1.89 (ranging from a low of .74 in Denmark to a max of 6.92 in Paraguay).<sup>23</sup> Redistributive effort is captured with the variable SSW, which represents a government's aggregate spending on welfare as a percentage of GDP. I operationalize public sector size with the measure CGEXP, total central government expenditure as a percentage of GDP.<sup>24</sup> Figure 4 presents variable means under alternative electoral rules.

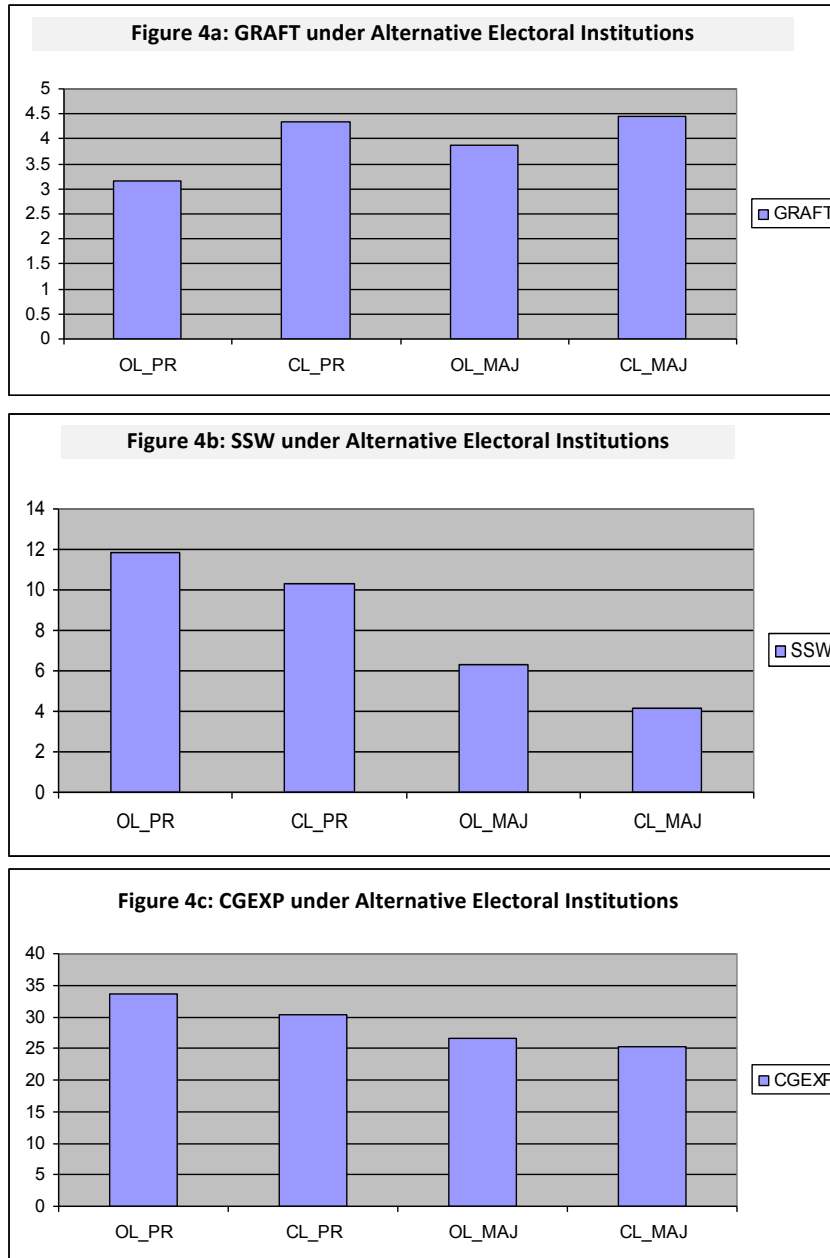
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<sup>22</sup> In almost all cases the coding of a country's predominant system is straightforward. For example, Poland and Switzerland register scores of .85 (.15) and .975 (.025) respectively on the variable OL\_PR (CL\_MAJ), such that the predominant rule is clearly OL\_PR, although both countries contain a small number of single-member districts. Russia is the unique case in which the system is perfectly divided (both CL\_PR=.5 and CL\_MAJ=.5).

<sup>23</sup> This oft-used index aggregates into a single-measure information from over 30 public opinion and professional surveys that ask respondents for their subjective evaluations of a particular country's experience with political corruption. Treisman (2007) contains a detailed account of the strengths and weaknesses of this and other data sources on political corruption.

<sup>24</sup> All three variables (GRAFT, SSW, and CGEXP) are measured as averages from the period 1991–98, so as to ensure that empirical results are not driven by annual aberrations from a more consistent statistical trend.



**FIGURE 4****POLICY MEANS UNDER ALTERNATIVE ELECTORAL INSTITUTIONS**

Recall from **H1** above that intraparty voting should have a reductive effect on political corruption. This runs counter to the prevailing wisdom that MAJ systems should be most adept at constraining rent seeking and that OLPR systems should occupy an intermediate position between high accountability MAJ and low accountability CLPR

systems. The aggregate data in Figure 4a are strongly supportive, demonstrating that average levels of GRAFT are lower in OLPR and OLMAJ systems (means of 3.17 and 3.86 respectively) than they are in CLPR and CLMAJ systems (means of 4.33 and 4.46). Indeed, the single-member district plurality rule systems lauded in past studies generate *higher* average levels of GRAFT than any of the remaining three systems. Figures 4b and 4c contain mean values on SSW and CGEXP respectively. In contrast to the corruption data, the patterns uncovered here are in line with past research on the fiscal consequences of proportional representation: PR systems, whether open list or closed list, are characterized on average by substantially higher levels of social spending and larger states than both OLMAJ and CLMAJ systems. At least at this aggregated level of analysis, the data contradict this paper's hypothesis that intraparty voting should generate lower levels of redistributive policy and smaller states than their closed-list counterparts.

### **Regression Analysis: GRAFT**

These descriptive data provide preliminary support for the current paper's hypothesis as to the relationship between corruption and intraparty choice and are in line with the prediction from previous work regarding the relationship between proportional representation and fiscal policy. Of course, simple mean comparisons are often misleading and must be confirmed in a controlled statistical environment. Beginning with GRAFT as a dependent variable, I now replicate Persson and Tabellini's original results (2003) and then compare the relative explanatory capacity of an electoral system's ballot structure and its electoral formula in predicting the incidence of political corruption. The authors use three institutional measures to study the relationship between a country's electoral formula and its ballot structure and political corruption: MAJ, PIND, and PINDO. MAJ captures whether or not a country uses some form of *plurality rule* to elect its legislators, such that MAJ=1 in plurality rule systems while MAJ=0 in PR systems. PIND captures the percentage of a country's legislators who are elected as individual candidates *independent of party lists*, such that PIND=1 in MAJ systems with single-

member districts and  $PIND=0$  in pure PR systems and other party list systems.<sup>25</sup>  $PINDO$  is a variant of  $PIND$  which accounts for the fact that legislators in OLPR systems occupy party lists but are also the recipients of individually targeted candidate votes. It captures the percentage of legislators who *are not* elected using *closed-party lists*, such that  $PINDO=1$  for both pure MAJ and pure OLPR systems, while  $PINDO=0$  for pure CLPR systems.

In addition to these core institutional measures, the authors include throughout their analysis a full complement of control variables that have surfaced as important in past studies of corruption. These include measures of other formal political institutions (PRES and FEDERAL); democratic experience (AGE and GASTIL); religious tradition and ethnicity (AVEFL, CONFU, PRTO\_80, and CATHO\_80); a dummy for countries with a British colonial legacy (COL\_UK); a number of socioeconomic controls (LYP, EDUGER, and TRADE); population size (LPOP); and regional dummies for the Organization for Economic Co-operation and Development (OECD) and Latin America. Figure A2 in the Data Appendix contains the measurement specifics for all controls employed in the forthcoming analyses, which themselves all contain 88 country observations.

Columns 1 and 2 from Table 1 present a replication of Persson and Tabellini's analysis of electoral rules and political corruption (see Persson and Tabellini 2003, Table 7.1, 192–93). The dependent variable is GRAFT, and the statistical model is *weighted-least-squares*, where all regressions are weighted by the *inverse standard deviation* of the surveys that enter into the original index, to control for the fact that some countries generate higher levels of subjective uncertainty than others.

The results in column 1 come from a regression that includes both MAJ and PIND. Both coefficients are negative, which conforms to Persson and Tabellini's theoretical expectations: the direct legislative accountability associated with plurality rule should *reduce* corruption, while the muted accountability associated with party-list competition should *increase* corruption. However, only PIND attains statistical

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<sup>25</sup> As the authors readily admit, the variables MAJ and PIND are highly, though not perfectly, correlated ( $r = .926$ ) due to the fact that by far the most common plurality rule system is First-Past-The-Post in single-member districts, where legislators are *by definition* not elected on party lists.

significance, due probably to the two measures' multi-colinearity ( $r = .926$ ; see note 23). Column 2 presents results from a regression that replaces PIND with PINDO, whose correlation with MAJ is lower ( $r = .680$ ); once again both coefficients are negative, but in this case only MAJ attains statistical significance, i.e., embedding open-list considerations into the variable PIND dilutes its statistical effect and makes MAJ the most robust predictor. These results motivate Persson and Tabellini's conclusion that plurality rule systems without party lists outperform both OLPR and CLPR in constraining corruption.

In addition to the ballot structure and formula variables, these analyses both contain the variable MAGN, which captures a country's inverse district magnitude, i.e., its number of electoral districts divided by its total number of legislative seats, such that [MAGN=1] in pure single-member district systems and [MAGN<1] in systems with at least one multimember district. Not surprisingly, this variable is itself highly correlated with both MAJ ( $r = .886$ ) and PIND ( $r = .928$ ). Thus, the regression in column 1 contains three institutional measures correlated with one another at roughly  $r = .9$  which makes the substantive interpretation of statistical coefficients a challenge. Column 3 contains the results of a regression identical to column 1 save for the exclusion of MAGN; without the inclusion of this highly multicollinear variable neither PIND nor MAJ attains statistical significance, and the sign on the former becomes positive.

TABLE 1

## WEIGHTED-LEAST SQUARES RESULTS FOR GRAFT

N=88	Reg 1	Reg 2	Reg3	Reg 4	Reg 5	Reg 6
MAJ	-.308 (.529)	-.791 (.459)	-.342 (.574)			
PIND	-1.840 ** (.836)		.292 (.581)		-.677 -.453	
PINDO		-.463 (.283)				
MAGN	2.733 *** (.822)	1.518 *** (.547)				
PR				-.244 (.296)	-.733 (.440)	-.233 (.298)
OPEN				-.448 * (.248)	-.498 ** (.248)	-.602 * (.323)
OPEN*OECD						.393 (.523)
PRES	-.637 ** (.304)	-.493 (.310)	-.383 (.320)	-.311 (.307)	-.298 (.304)	.322 (.310)
GASTIL	.105 (.173)	.097 (.177)	.123 (.188)	.111 (.182)	.076 (.182)	.084 (.187)
AGE	-.334 (.667)	-.043 (.659)	-.004 (.715)	-.162 (.677)	-.357 (.683)	-.215 (.684)
LYP	-.786 *** (.260)	-.988 *** (.243)	-1.065 *** (.267)	-1.024 *** (.249)	-.945 *** (.252)	1.020 *** (.250)
LPOP	.051 (.129)	.012 (.130)	.016 (.139)	-.043 (.129)	.006 (.132)	-.029 (.131)
EDUGER	-.017 * (.010)	-.012 (.009)	-.008 (.010)	-.007 (.009)	-.012 (.010)	-.006 (.009)
TRADE	-.004 (.003)	-.004 (.004)	-.006 (.004)	-.006 * (.004)	-.006 * (.004)	-.006 * (.004)
OECD	-1.257 *** (.442)	-1.220 *** (.449)	-1.136 *** (.478)	-1.362 *** (.451)	-1.254 *** (.452)	-1.530 *** (.505)
FEDERAL	.120 (.312)	.148 (.310)	.183 (.338)	.230 (.323)	.202 (.320)	.232 (.324)
AVELF	1.463 ** (.656)	1.034 (.638)	.730 (.670)	.890 (.651)	1.041 (.651)	.971 (.660)
PROT80	-.008 (.005)	-.008 (.005)	-.007 (.006)	-.007 (.005)	.006 (.005)	.006 (.005)
CATHO80	.004 (.004)	.006 (.004)	.005 (.005)	.007 (.004)	.005 (.004)	.007 (.004)
CONFU	1.804 ** (.611)	1.400 ** (.572)	.740 (.564)	.912 (.553)	.965 * (.548)	1.016 * (.572)
COL_UK	-.816 ** (.322)	-.616 * (.323)	-.599 * (.342)	-.806 ** (.316)	-.748 ** (.315)	-.793 ** (.398)
COL_ESPA	-.427 (1.143)	-.640 (1.159)	-1.095 (1.221)	-1.436 (1.142)	-1.146 (1.146)	-1.483 (1.148)
AFRICA	-.438 (.500)	-.678 (.509)	-.521 (.541)	-.830 (.526)	-.747 (.524)	-.868 (.531)
LAAM	.896 * (.465)	.580 (.487)	.696 (.500)	.473 (.483)	.617 (.488)	.437 (.488)
ASIE	-.647 (.531)	-.532 (.536)	-.112 (.549)	-.326 (.543)	-.392 (.539)	-.392 (.552)
CONS	12.18 ***	13.80 ***	14.17 ***	14.37 ***	14.61 ***	14.39 ***

Standard Errors in Parentheses;  
 $p > (.10) \rightarrow *$  ;  $p > (.05) \rightarrow **$  ;  $p > (.01) \rightarrow ***$

Beyond issues of colinearity, note that these analyses cannot be used to assess this paper's primary hypotheses regarding corruption and intraparty voting (**H1** and **H2**), as the coding schemes they employ group together systems that, according to the theory above, should have very different properties. For example, the variable PIND regroups countries that use CLPR, OLPR, and a variety of OLMAJ systems including the STV used in Ireland and Malta; while the variable PINDO regroups FPTP systems and OLPR systems. Neither measure isolates systems with intraparty choice. To evaluate the explanatory capacity of open lists I thus create the variable OPEN, a dummy variable that equals 1 for all OLPR and OLMAJ systems and 0 for all other systems. Before proceeding, note also that in the following analyses I shall replace the variable MAJ with the variable PR, a dummy variable equaling 1 for all OLPR and CLPR systems, and equaling 0 for all plurality rule systems (i.e., CLMAJ and OLMAJ). Although well correlated with MAJ ( $r = -.81$ ), this variable recodes a number of countries' electoral formulae.<sup>26</sup>

When introduced into a fully controlled weighted-least-squares regression (column 4 from Table 1), the variable OPEN has a statistically significant effect on a country's overall level of political corruption, such that moving from a system without intraparty choice to one with intraparty choice reduces a country's score on GRAFT by roughly half a point.<sup>27</sup> On the other hand, the coefficient on PR is negative (the opposite direction posited in previous studies) and, more importantly, fails to reach standard significance levels. The analysis in column 5 reintroduces the variable PIND so as to assess the relative explanatory power of intraparty voting as compared to "candidate-voting" more generally speaking. Once again, the variable OPEN has a significant reductive effect on GRAFT, while neither PR nor PIND reach standard significance

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<sup>26</sup> Appendix A contains a full list of the cases in which my coding scheme differs. As an example, the authors code South Korea as a nonplurality-rule system despite the fact that it has used a primarily majoritarian electoral formula since the inception of democracy. Similarly, they code Chile as a plurality-rule system despite the fact that OLPR has been the institution in place post-Pinochet.

<sup>27</sup> Although I present here the analyses with all control variables included, the following results are robust to the stepwise exclusion of variables according to their significance levels, i.e., none of the following results depend on the inclusion of a particular set of controls. Furthermore, as my goal is a comparative evaluation of hypotheses pertaining to electoral formulae and ballot structures, I exclude MAGN in these regressions to mitigate problems of multi-colinearity.

levels. In short, these results provide evidence in favor of **H1** but not in favor of past hypotheses regarding the corruption-inhibiting effect of majoritarian systems.

From among the control variables employed in columns 1 through 5, economic development, OECD membership, and British colonial heritage are the strongest and most consistent predictors of corruption, all having a reductive effect. In turn, we can use this information to test hypothesis **H2**, which posited that intraparty voting should be particularly effective when rent seeking is not already constrained by various elements of the surrounding environment. More particularly, given that LYP, OECD, and COL\_UK are the most consistent negative environmental predictors of GRAFT, we can *interact* these variables with the variable OPEN to determine whether or not the reductive impact of intraparty voting is particularly strong among countries that lack environmental substitutes for constraining rent seeking.

Column 6 contains one such analysis with the interaction term OECD\*OPEN. At first glance it is tempting to dismiss **H2**, as the coefficient on the interaction term itself is not statistically significant. However, this would be an incorrect interpretation of the result (Brambor, Roberts Clark, and Golder 2006). In fact, what this interaction term allows us to do is assess the relative size and significance of the coefficient on OPEN among OECD as opposed to non-OECD countries. Postregression diagnostics uncover the following conclusion: in non-OECD countries intraparty voting has a significant and strong reductive effect on GRAFT (the “p-value” is .067 and the coefficient size is -.60); while in OECD countries the effect is much smaller (coefficient size of -.21) and fails to reach standard levels of statistical significance (“p-value” of .61). Thus, the results from column 6 provide suggestive evidence in favor of hypothesis **H2**.<sup>28</sup>

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<sup>28</sup> As for distinct interactive hypotheses, I also investigated Chang and Golden’s (2007) hypothesis that OLPR systems with large districts should be plagued by corruption. Recall from above that this prediction did not stand up to game-theoretic analysis (see Figures 1 and 2). When turning to the data, one does uncover a moderately positive correlation between GRAFT and district magnitude within the sample of OLPR cases ( $r = .18$ ). When included as an interaction term, the variable MAGN\*OLPR yields somewhat imprecise results. Putting aside the fact that conditional coefficients often fail to reach standard significance levels, the substantive findings can be summarized as follows: in line with Chang and Golden’s hypothesis, intraparty voting seems to more effectively constrain corruption in countries with small electoral districts; however, the results also suggest that intraparty voting will have at least a minimally reductive effect on political corruption regardless of a country’s district magnitude.

I repeated the same analysis with the interaction term OPEN\*COL\_UK, and obtained identical results (omitted for reasons of redundancy). On the other hand, the direct interaction between economic development (LYP) and intraparty voting yielded less clear results. For exploratory purposes, I then created a dummy variable LYP2 which equals 1 for all countries at or above the 75<sup>th</sup> income percentile and 0 for all countries below the 75<sup>th</sup> income percentile. When interacted with intraparty voting, this categorical variable yielded results with implications identical to those above: intraparty voting has a strong reductive impact on GRAFT in countries below the 75<sup>th</sup> income percentile but not in those above it. These findings suggest the possibility of a “threshold effect,” i.e., that what matters most with regards to national income is whether or not a country falls into the population of upper-income states as opposed to the population of middle- and lower-income states, and not a country’s relative income ranking within the relevant population. Taken together, these results lend strong support to the current paper’s theoretical framework, and cast doubt on the driving hypothesis from previous research that MAJ systems should outperform both OLPR and CLPR in constraining corruption.<sup>29</sup>

### **Regression Analysis: Fiscal Policy**

Persson and Tabellini’s empirical analyses of fiscal policy concentrate on one particular parameter: the electoral formula as captured by their variable MAJ. With one key difference noted below, Columns 1 and 2 from Table 2 replicate the analyses from which they draw conclusions as to the relationship between electoral formula and fiscal policy (Persson and Tabellini 2003, 159 and 170). The control variables largely overlap with those from Table 1 above.

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<sup>29</sup> While my comparative emphasis here is on Persson and Tabellini’s research (2003), these results also differ substantially from those put forward in Kunicova and Rose-Ackerman (2005). The most important difference between their analysis and that presented here is the sample size: their sample contains a non-negligible number of countries that are excluded from Persson and Tabellini’s analysis due to their lack of democratic credentials (e.g., Jordan, Kazakhstan, Kuwait, Sierra Leone, Zimbabwe, Yemen). Behind our contradictory results thus lies an unresolved question, which exceeds my current scope, as to the consequences of electoral institutions in semi-democracies and/or nondemocracies.



TABLE 2

## OLS RESULTS FOR FISCAL POLICY

N=88	SSW	CGEXP	SSW	CGEXP	SSW (+ %65)	SSW (+ %65)
<b>MAJ</b>	2.582 * (1.497)	--5.010 ** (2.148)			-2.014 (1.265)	
<b>PR</b>			2.860 * (1.596)	4.640 ** (2.327)		1.638 (1.382)
<b>OPEN</b>			.053 (1.316)	-2.616 (2.161)		.449 (1.121)
<b>PRES</b>	-1.245 (1.848)	-4.864 * (2.526)	-.835 (1.774)	-3.501 (2.533)	-1.798 (1.559)	-1.383 (1.512)
<b>GASTIL</b>	-1.113 (.760)	-2.740 ** (1.114)	-1.274 (.799)	-3.114 *** (1.162)	-.438 (.655)	-.477 (.700)
<b>AGE</b>	-.905 (3.510)	-4.061 (5.188)	-1.759 (3.394)	-6.107 (5.202)	1.336 (2.989)	.512 (2.926)
<b>LYP</b>	.920 (1.322)	-.104 (1.976)	1.062 (1.326)	.009 (1.996)	.151 (1.123)	.313 (1.138)
<b>TRADE</b>	.009 (.013)	.024 (.019)	.012 (.013)	.033 (.020)	.005 (.011)	.007 (.011)
<b>OECD</b>	1.772 (2.162)	1.582 (3.461)	1.393 (2.205)	.317 (3.494)	-1.194 (1.290)	-1.296 (1.962)
<b>FEDERAL</b>	-.037 (1.556)	-3.297 (2.331)	.350 (1.601)	-3.055 (2.389)	.122 (1.309)	.290 (1.360)
<b>PROP_65</b>					1.268 *** (.262)	1.252 *** (.271)
<b>PROP_1564</b>	.072 (.175)	-.132 (.258)	.048 (.178)	-.081 (.267)	-.093 (.151)	-.120 (.156)
<b>COL_UK</b>	-2.081 (1.554)	1.968 (2.321)	-2.032 (1.561)	1.815 (2.372)	-.138 (1.368)	-.276 (1.380)
<b>COL_ESPA</b>	4.741 (5.323)	3.773 (8.321)	3.656 (5.290)	2.449 (8.404)	5.339 (4.479)	4.474 (4.499)
<b>AFRICA</b>	-1.529 (3.188)	-2.066 (4.200)	-1.782 (3.107)	-3.409 (4.170)	3.347 (2.865)	2.607 (2.805)
<b>LAAM</b>	-5.215 ** (2.059)	-10.611 *** (3.182)	-5.715 *** (2.020)	-12.509 *** (3.215)	1.308 (2.196)	.834 (2.225)
<b>ASIE</b>	-6.142 ** (2.285)	-8.863 ** (3.489)	-5.722 ** (2.378)	-9.327 ** (3.593)	.192 (2.327)	.021 (2.372)
<b>CONS</b>	1.221	50.956 ***	-.805	44.267 **	2.285	1.218

Standard Errors in Parentheses;  
 p>(.10) → \* ; p>(.05) → \*\* ; p>(.01) → \*\*\*

In support of their primary hypothesis, MAJ has a significant negative effect in both regressions: moving from a MAJ system to a non-MAJ system leads to a 2.6 percent increase in spending on social policy and to a 5 percent increase in the size of the public

sector. Note among controls the strong reductive effect of the geographic dummy variables for Latin America (LAAM) and East Asia (ASIE), along with the fact that presidentialism (PRES) has a negative effect public sector size, while democracy levels (GASTIL) have a positive effect on public sector size.<sup>30</sup> Importantly, these analyses do not include PROP65 on the right-hand side, which measures the percentage of a country's population over 65 years of age. The authors themselves note the strong effect this variable has on social spending, an empirical fact whose importance is further emphasized in what follows.

Columns 3 and 4 replace MAJ with the variable PR and introduce the variable OPEN, thus allowing us to simultaneously assess the effect of electoral formulae and ballot structures on fiscal policy. Once again, the electoral formula has a strong and significant impact on fiscal policy: moving from a plurality-rule to a nonplurality-rule system leads to a 2.9 percent increase in spending on social policy and a 4.6 percent increase in the size of the state. On the other hand, and in contradiction to hypotheses **H3** and **H4**, which suggested that intraparty voting should reduce spending, the variable OPEN has little discernible impact on fiscal policy. The results for control variables in columns 3 and 4 are identical to those in columns 1 and 2 in all but one case: PRES no longer significantly impacts the size of the state.

This first battery of results supports the hypothesis that PR systems should generate more social policy and larger public sectors than their plurality-rule counterparts. None of these analyses included the variable PROP65 as an independent variable. Doing so does little to change the core results from columns 2 and 4 where CGEXP was the dependent variable: although coefficient sizes are lower, PR systems still have larger states than plurality-rule systems, and the effects of PRES and GASTIL are parallel (results omitted for reasons of space and redundancy).<sup>31</sup> On the other hand, as demonstrated in columns 5 and 6 from Table 2, the overwhelming explanatory capacity of PROP65 in regressions with SSW as the dependent variable wipes out any and all remaining effects, institutional and other. These analyses suggest that social spending, or

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<sup>30</sup> Higher scores on the variable GASTIL indicate lower levels of democracy.

<sup>31</sup> The regional dummies LAAM and ASIE still exert the same reductive effect, although their statistical significance becomes a bit more tenuous.

at least the measure of social spending chosen here, is almost entirely driven by the age of a country's population.

The mechanism driving PR's tendency to generate higher tax rates is its greater emphasis on the provision of broadly conceived social policies as opposed to geographically targeted "pork." This subsection's empirical results provide partial support for these hypotheses: PR systems do have larger public sectors than plurality-rule systems. However, this distinction does not seem to be driven by differences in redistributive emphasis, which are largely determined by population demographics. Indeed, the lack of evidence in favor of this paper's original hypotheses **H3** and **H4** provides additional reason to revisit the mechanisms pertinent in past studies. More specifically, this nonfinding suggests that the geographic policy orientation incentivized by systems with intraparty voting need not undermine a country's capacity to redistribute. This line of reasoning is consistent with recent research by Long Jusko (2009), who suggests that PR systems may be *less* redistributive than plurality-rule systems when low-income voters are geographically concentrated in particular regions.

Of course, the lack of a significant relationship between PR systems and social policy in columns 5 and 6 should not be taken as definitive evidence. The above analyses apply to a single time point, and the overwhelming effect of the variable PROP65 suggests the need to develop more fine-grained measures to capture the "nondeterministic" aspects of social policy. Furthermore, it should be noted that a large majority of past research on the redistributive consequences of PR was intended to explain outcomes in the set of advanced industrialized countries, where time series data provide fairly robust support for the hypothesis for the relationship between PR and redistribution (Iversen and Soskice 2006). However, what the findings do imply is the need to reinvestigate the redistributive consequences of PR outside of the developed world.<sup>32</sup> Furthermore, they hint that other aspects of economic policy under PR systems may be responsible for their relatively larger public sectors.<sup>33</sup> The study of

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<sup>32</sup> Turkey, for example, is a country in which PR, in place since the 1960s, has coexisted with one of the world's most regressive and inegalitarian fiscal systems.

<sup>33</sup> It may be that PR systems stimulate a greater state role in economic production and coordination, generating higher levels of public investment and state ownership than nonplurality-

nonredistributive fiscal dynamics that contribute to PR systems' larger overall states should constitute an important element of future research.

### CONCLUDING DISCUSSION

This paper presents an original theoretical framework relating a country's legislative electoral institutions, and in particular its electoral formula and ballot structure, to rent-seeking and fiscal policy patterns. The game-theoretic model in the second section demonstrates the unique capacity of electoral systems with intraparty voting to generate personal vote seeking among incumbents. The third section then develops a series of hypotheses relating personal vote seeking to the incidence of political corruption, a country's emphasis on redistributive social policy, and the overall size of the public sector. Regression analysis provides strong evidence in favor of the original hypothesis that intraparty voting rules should exert a reductive effect on political corruption, especially in countries where corruption is not constrained by alternative elements of the social or political environment. On the other hand, I find no evidence that the geographic orientation of intraparty voting systems dampens incentives for either redistributive spending or fiscal spending more generally. Indeed, this nonfinding, along with the absence of a significant relationship between PR systems and social policy, suggest the need to revisit the mechanisms in past arguments linking proportionality to large public sectors.

It is important to highlight two important empirical limitations faced by this and other research on the economic consequences of electoral rules, along with the challenges and opportunities these limitations present for future research. First, as already mentioned, this paper investigates the direct relationship between electoral institutions and policy patterns without providing explicit analysis of the *mechanism* by which institutions exert their impact, namely legislators' incentives to engage in personal vote seeking. This absence of causal mechanisms is in fact pervasive in research on the economic consequences of electoral rules. For example, past studies arguing that personal accountability in MAJ systems should reduce rent seeking examine the direct relationship

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rule systems. It may be that multiparty competition in PR systems generates coalition governments that overspend due to common-pool problems.

between electoral formulae and political corruption, without an explicit analysis of personal accountability patterns. Similarly, arguments linking PR to large public sectors patterns, via its effect on the ratio of geographically as opposed to broadly targeted policies, generally examine the direct relationship between electoral formula and the size of the state, without providing explicit data on the policy ratio itself.<sup>34</sup>

Without multiplying the list, suffice it to say that studies of electoral rules and their economic consequences nearly unanimously examine the bivariate relationships between institutions and policies, without explicitly confirming that the relevant causal mechanisms are in fact operative. This lacuna arises in large part due to the absence of reliable cross-national data on differing cross-national patterns of democratic accountability or, more precisely, on the various *linkage mechanisms* that politicians may use to consummate their relationship with the voting public. A newly emerging data set on patterns of democratic accountability in 88 contemporary democracies will help to mitigate this oversight in future work (Kitschelt and Kselman 2011). The information generated by this project will help researchers to identify the extent to which politics revolves around the personalistic representation of geographic constituents as opposed to broader social categories, along with the extent to which electoral campaigns turn on more affective considerations of symbolic partisanship or candidate charisma. By embedding these new data in empirical analyses, scholars will soon be able to more completely test all links in the causal chain connecting institutional configurations to policy outcomes.

A second limitation faced by this and other studies of electoral rules' economic consequences is the lack of serial variation. Those studies that employ pooled cross-sectional research designs have had to contend with the marked lack of institutional

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<sup>34</sup> In Austen-Smith (2000) and Iversen and Soskice (2006), the authors assume that all politics is "national," i.e., that politics revolves solely around the choice of a collective tax rate and a universal redistributive transfer rate. In the spirit of integrating causal mechanisms into empirical analysis, a more complete test of their models would first identify the countries in which this assumption is met, i.e., places where geographically oriented politics are largely nonexistent and, second, would analyze their predictions regarding PR and redistribution on only this subset of cases.

change within particular country units.<sup>35</sup> While such designs allow one to multiply the number of observations in a way that makes statistical analysis possible, they do so at the risk of artificially inflating the sample population without generating real variance on the relevant independent variable. This is an especially pressing problem given the importance of counterfactual reasoning in institutional analysis: to convincingly demonstrate that electoral rules have their predicted effects, it would be ideal to show that changing the matrix of institutions in a *single country* has the expected effect on that country's policy mix. In this vein it is important to note that, in contrast to the stability that generally characterizes countries' electoral formulae, both intraparty voting rules and district magnitudes, two of the institutional parameters emphasized in the current paper, are in fact subject to more frequent temporal variability.<sup>36</sup> I am currently in the process of generating, case by case, a database that documents temporal changes to district structures and ballot structures in the 84-country sample examined here, which will allow me in future research to more completely subject the above hypotheses to exhaustive counterfactual inquiry.

These qualifications notwithstanding, the current paper's findings speak to broader debates about the normative and empirical status of decentralized and personalistic forms of democratic accountability. Critics of clientelism and other forms of targeted public policy often suggest that such practices are conducive to rent-seeking practices; at the extreme the concepts of "particularism" and "corruption" are used almost interchangeably. At the very least, such criticism highlights the failure of such "perverse" forms of accountability to generate both public goods and citizen satisfaction with democratic processes (note 19). In contrast, a growing body of recent research offers a more nuanced normative and empirical appraisal of particularistic forms of accountability. Keefer and Vlaicu (2008) argue that targeted public policies often

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<sup>35</sup> Thus, for example, evidence of the relationship between proportional representation and redistribution in the advanced world comes from analyses in which countries' electoral formulae remain essentially fixed over the entire period under investigation.

<sup>36</sup> To use another example from modern Turkish politics, since 1960 the average district magnitude in Turkey has varied quite a bit over time, impacted by the elimination of a national electoral tier in 1969 and the creation of numerous small electoral districts that have decreased mean district size since 1983. As well, between 1990 and 1995 Turkey conducted a five-year experiment with OLPR in which intraparty voting allowed a number of candidates without organizational support to gain access to party lists based on their personal vote-seeking efforts.

improve aggregate social welfare when politicians cannot credibly commit to the provision of public goods. Fernandez and Pierskalla (2009) find that countries with high levels of political particularism in fact *outperform* their counterparts on select dimensions of economic and human development (e.g., infant mortality and literacy). In demonstrating first of all that personalistic electoral systems in fact help to constrain political corruption and, second, that they need not undermine the provision of nontargeted and broadly applicable social policies, the current paper shares with this research the undertone that particularistic accountability may serve as a “second-best” policy alternative when the exogenous environment is not conducive to more normatively palatable forms of governance.

#### DATA APPENDIX

\* Figure A1 contains all countries’ values for the variables FPTP, CLPR, OLPR, and HYBRID. Countries are placed in four separate columns depending on their predominant system (see text page 21). For countries with mixed systems, their values on the distinct institutional variables are labeled in parentheses. These measures were coded using a variety of different sources for the sake of cross-checking, including but not limited to: Golder (2004); Seddon et al. (2002); the data Appendix in Cox (1997); and the Inter-Parliamentary Union’s online database, which can be found at <http://www.ipu.org/english/home.htm>.

FIGURE A1

## ELECTORAL FORMULA AND BALLOT STRUCTURE

<u>FPTP</u>	<u>CLPR</u>	<u>OLPR</u>	<u>HYBRID</u>
Bahamas	Argentina	Brazil	Australia
Bangladesh	Austria	Chile	Cyprus
Barbados	Belgium	Denmark	Malta
Belize	Bolivia	Czech Republic	Mauritius
Botswana	Bulgaria	Estonia	Taiwan (HYBRID=.58; CLPR=.42)
Canada	Colombia	Finland	Thailand
Fiji	Costa Rica	Greece (OLPR=.94; FPTP=.006)	
France	Dominican Republic	Latvia	
Gambia	Ecuador	Luxemburg	
Ghana	El Salvador	Poland (OLPR=.85; FPTP=.15)	
India	Germany	Slovak Republic	
Jamaica	Guatemala	Sri Lanka	
Japan (FPTP=.6; CLPR=.4)	Honduras	Switzerland (OLPR=.975; FPTP=.025)	
Malawi	Hungary CLPR=.54; FPTP=.46)		
Malaysia	Iceland		
Mexico (FPTP=.6; CLPR=.4 )	Israel		
Nepal	Italy		
Pakistan	Nambia		
Papua New Guinea	Netherlands		
Philippines	New Zealand		
Singapore	Nicaragua		
South Korea	Norway		
St Vincent	Paraguay		
Trinidad	Peru		
USA	Portugal		
UK	Senegal (CLPR = .583; FPTP=.417)		
Ukraine	South Africa		
Zambia	Spain		
Zimbabwe	Sweden		
	Turkey		
	Uruguay		
	Venezuela		

\* In keeping with the dependent variable's time point, countries are coded according to the electoral system present during the years 1994–97. Four countries undertook major



institutional reforms in 1993: New Zealand went from an FPTP system to a mixed FPTP-PR system in which the upper tier serves as a *corrective* tier for any disproportionality introduced in the FPTP tier (see discussion of corrective tiers immediately following); Italy went from an OLPR system to a mixed FPTP-CLPR system, also with a corrective PR tier; Venezuela went from a pure CLPR system to a mixed FPTP-CLPR system with a corrective upper tier; and Japan went from using the SNTV in multimember districts to a mixed FPTP-CLPR system in which the two tiers are independent (i.e., the PR tier is not corrective). I have rerun all of the paper's empirical analyses on a sample in which these three cases are coded as intermediate, i.e., their values are weighted equally by the system in place before 1993 and that in place after 1993. The paper's empirical results are completely unaffected. Bolivia and the Philippines both experienced institutional change in 1996, but these changes did not become effective for electoral competition until after 1997.

\* A number of countries that use ostensibly mixed systems are here coded as pure system types: Germany, New Zealand, Italy, Venezuela, and South Korea. This is due to the fact that a party's seat allocation in one tier is not *independent* from its performance in the alternative tier (all cases can be recoded as mixed without changing the paper's empirical results). The first four cases use a corrective, national-level PR tier to correct for any disproportionality in vote shares that arise in the lower FPTP tier. Political parties thus have every incentive to engage in vote seeking as *if* the system were purely proportional, since in the end seats will be allocated on a purely proportional basis. Similarly, the small upper tier in South Korean elections serves to amplify the seat majority of whichever party wins a plurality of FPTP seats, such that parties' real emphasis will be on the lower tier (i.e., South Korea is coded as pure FPTP).

## FIGURE A2

## DATA FROM PERSSON AND TABELLINI (2003)

\* All of the data in the following table come directly from the publicly available dataset that accompanies Persson and Tabellini (2003) and is available at <http://people.su.se/~tpers/>. All of the individual variable coding descriptions come directly from the Data Appendix in Persson and Tabellini (2003).

-GRAFT: point estimate of 'Graft', the sixth cluster of Kaufman et al.'s *Governance Indicators* focusing on perceptions of corruption, with a possible range of 0-to-10, where lower values correspond to better outcomes.

-PIND: continuous measure of ballot structure, defined as  $[1 - (\text{List Seats}/\text{Total Seats})]$ , where the second term represents the percentage of legislators elected on party lists divided by the total number of seats in the legislature. As such, PIND measures the percentage of legislators elected independent of party lists.

-PINDO: continuous measure of ballot structure, defined as  $[1 - (\text{Closed List Seats}/\text{Total Seats})]$ , where the second term represents the percentage of legislators elected on *closed party lists* divided by the total number of seats in the legislature.

-MAJ: dummy variable that equals 1 for countries whose lower house is elected by plurality rule and equals 0 otherwise.

-MAGN: inverse district magnitude, defined as the number of electoral districts inside a particular country divided by the number of seats in the country's legislature.

-PRES: dummy variable equal to 1 in presidential regimes and 0 otherwise. Only regimes where the confidence of the assembly is not necessary for the executive are excluded among presidential regimes.

-FEDERAL: dummy variable equal to 1 if the country has a federal political structure and 0 otherwise.

-GASTIL: average of indices for civil liberties and political rights, where each index is measured on a one-to-seven scale with one representing the highest degree of freedom and 7 the lowest.

-AGE: age of democracy, defined as  $(2000 - \text{DEM\_AGE})/200$  and varying between 0 and 1, where the USA is the world's oldest democracy with a value of  $\text{AGE} = 1$ .  $\text{DEM\_AGE}$  is coded as the first year of democratic rule, corresponding to the first year of an uninterrupted string of positive yearly values on the variable POLITY until the end of the sample.

-COL\_UK: dummy variable equal to 1 if the country was a former British colony and 0 otherwise.

-PROT80: percentage of the population in each country professing the Protestant religion in 1980.

-CATHO80: percentage of the population belonging to the Roman Catholic Church in 1980.

-CONFU: dummy variable equal to 1 if the majority of a country's population is Confucian/Buddhist/Zen and equal to 0 otherwise.

-AVELF: index of ethno-linguistic fractionalization, approximating the level of ethnic and linguistic fragmentation within a country, ranging from 0 (homogeneous) to 1 (strongly fractionalized) and comprising an average of five different indices.

-LPOP: natural log of total population.

-EDUGER: total enrollment in primary and secondary education, as a percentage of the relevant age group in the population.

-LYP: natural log of per capita GDP, where real GDP is defined as per capita GDP in constant dollars expressed in international prices (base year 1985).

-TRADE: sum of exports and imports of goods and services measured as a share of GDP.

-LAAM: regional dummy variable equal to 1 if the country is in Latin America, Central America, or the Caribbean and equal to 0 otherwise.

-OECD: dummy variable equal to 1 for all countries that were members of the OECD before 1993 and 0 for all other countries (except for Turkey, which is assigned a value of 0 despite having been a member nation prior to 1993).

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