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Electoral Rules and Constitutional Structures as Constraints on Corruption

JANA KUNICOVÁ AND SUSAN ROSE-ACKERMAN*

Electoral rules and constitutional structures can influence the level of political corruption. We show that proportional representation (PR) systems are more susceptible to corrupt political rent-seeking than plurality systems. We argue that this result depends on the different loci of rents in PR and plurality systems, and on the monitoring difficulties faced by both voters and opposition parties under PR. We also examine the interaction between electoral rules and presidentialism. We test our main predictions and interaction effects on a cross-section of up to ninety-four democracies. The empirical findings strongly support our hypothesis that PR systems, especially together with presidentialism, are associated with higher levels of corrupt political rent-seeking.

Elections serve two functions in representative democracies. First, they select political actors who enact public policies in the light of constituents' preferences. Secondly, they permit citizens to hold their representatives accountable and to punish them if they enrich themselves in corrupt or self-serving ways. In other words, elections provide both *incentives* for politicians to enact certain kinds of policies and *constraints* on politicians' malfeasance. In this article, we focus on the second of these two functions and investigate how different electoral systems constrain corrupt rent-seeking, holding constant other political, economic and social factors.

We study three stylized categories of electoral rules: plurality/majoritarian systems with single-member districts (PLURALITY), and two kinds of proportional representation (PR) systems: closed-list and open-list. Under a closed-list (CLPR) system, party leaders rank candidates and voters only cast votes for parties. Under an open-list system (OLPR), voters both select a party and rank candidates given the party's selection of candidates. In contrast to PR systems, voters under plurality rule both cast their ballots for specific candidates and elect a single representative from their district of residence.

We assume that politicians trade off their re-election chances against illicit personal enrichment because revelations of corrupt rent-seeking reduce re-election chances. Thus, the control of corrupt political rent-seeking depends both on the locus of rents and on whether any actors have both the incentives and the ability to monitor those politicians with access to rents. We argue that plurality and PR systems differ in two ways. First, the locus of corrupt rents differs. Under PR, the party leadership can more effectively concentrate

* Division of Humanities and Social Sciences, California Institute of Technology, Pasadena; and Law School and Department of Political Science, Yale University, respectively. The authors thank José Antonio Cheibub, Rafael DiTella, Aaron Edlin, Eduardo Engel, Philip Levy, Fiona McGillivray, Peter Ordeshook, Jonathan Rodden, Frances Rosenbluth, Peter Siavelis, Alastair Smith and Georg Vanberg for helpful discussions and comments on earlier drafts and Philip Keefer and Jessica Seddon Wallack for sharing their data. They also acknowledge benefiting from the comments of the *Journal*'s referees and editor and from those received in seminar presentations at Yale, Berkeley Law School, the Public Choice Society, the Midwest Political Science Association, the Society for Comparative Research, the World Bank, the Ohio State University and the California Institute of Technology. All remaining errors are the authors'. Rose-Ackerman's contribution was partially supported by the Center for Advanced Study in the Behavioral Sciences.

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corrupt opportunities in its own hands, so individual legislators have relatively fewer rent-seeking opportunities. Under plurality rule, party leadership does not have as much power over the individual legislators as in PR systems, so the locus of rents in plurality is more evenly divided between the party leadership and individual legislators. Secondly, under plurality, the monitoring of rent seekers is likely to be more stringent than the monitoring of rent seekers under PR.

Although our primary focus is on the methods by which the legislature is chosen, we also recognize that a complete model should include other institutional features of a political system such as the level of individual freedom, presidentialism/parliamentarism, federalism, bi-cameralism and the strength of parties. We examine the interaction between presidentialism and electoral rules and include other institutional variables, most notably federalism and individual freedom and rights, as controls in our empirical work.

Our article stands at the intersection of two broad literatures: one examining electoral rules and their effects, and the other attempting to explain political corruption. Electoral rules have been shown to affect the incentives of political actors to organize and hence the number of political parties,[1] as well as the way in which parties and politicians compete for votes, producing personalistic versus party-centred systems.[2] Theoretical arguments conclude that, in established democracies with national parties, plurality rule tends to produce two major parties; in contrast, PR produces several competing parties.[3] In addition, electoral rules are believed to affect party discipline: where politicians have incentives to cultivate a personal vote, party discipline will be low.[4] Our paper builds on these stepping stones. We argue that electoral rules help determine the interaction between voters and

[1] Maurice Duverger, *Political Parties: Their Organization and Activity in the Modern State* (New York: Wiley, 1954); Douglas Rae, *Political Consequences of Electoral Laws* (New Haven, Conn.: Yale University Press, 1971); William H. Riker, 'The 2-Party System and Duverger's Law: An Essay on the History of Political Science', *American Political Science Review*, 76 (1982), 753–76; G. Bingham Powell, *Contemporary Democracies: Participation, Stability, and Violence* (Cambridge, Mass.: Harvard University Press, 1982); Rein Taagepera and Matthew S. Shugart, *Seats and Votes: The Effects and Determinants of Electoral Systems* (New Haven, Conn.: Yale University Press, 1989); Arend Lijphart, *Electoral Systems and Party Systems: A Study of Twenty-Seven Democracies 1945–1990* (Oxford: Oxford University Press, 1994); Arend Lijphart, *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries* (New Haven: Yale University Press, 1999).

[2] John M. Carey and Matthew S. Shugart, 'Incentives to Cultivate a Personal Vote: A Rank-Ordering of Electoral Formulas', *Electoral Studies*, 14 (1995), 417–39; Matthew S. Shugart, 'Presidentialism, Parliamentarism, and Provision of Collective Goods in Less-Developed Countries', *Constitutional Political Economy*, 10 (1999), 53–88; Roger B. Myerson, 'Incentives to Cultivate Favored Minorities Under Alternative Electoral Systems', *American Political Science Review*, 87 (1993), 856–69; Alessandro Gaviria, Ugo Panizza, Jessica Seddon and Ernesto Stein, 'Political Institutions and Growth Collapses' (Washington D.C.: Inter-American Development Bank Research Department Working Paper 419, 2000); Lijphart, *Patterns of Democracy*; Jessica Seddon, Alessandro Gaviria, Ugo Panizza and Ernesto Stein, 'Political Particularism Around the World', *World Bank Economic Review*, 17 (2003), 133–43; Ugo Panizza, 'Electoral Rules, Political Systems and Institutional Quality', *Economics and Politics*, 13 (2001), 311–42.

[3] Rein Taagepera and Bernhard Grofman, 'Rethinking Duverger's Law: Predicting the Effective Number of Parties in Plurality and PR Systems', *European Journal of Political Research*, 13 (1985), 341–52; Peter Ordeshook and Olga Shvetsova, 'Ethnic Heterogeneity, District Magnitude, and the Number of Parties', *American Journal of Political Science*, 38 (1994), 100–23; O. Amorim Neto and Gary W. Cox, 'Electoral Institutional, Cleavage Structures, and Number of Parties', *American Journal of Political Science*, 41 (1997), 149–74.

[4] Carey and Shugart, 'Incentives to Cultivate a Personal Vote'; Barry Ames, 'Electoral Strategy Under Open-List Proportional Representation', *American Journal of Political Science*, 39 (1995), 406–33; Steven R. Reed, 'Democracy and the Personal Vote: A Cautionary Tale From Japan', *Electoral Studies*, 13 (1994), 17–28; Shaun Bowler, David M. Farrell and Richard S. Katz, eds, *Party Discipline and Parliamentary Government* (Columbus: Ohio State University Press, 1999).

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organized political actors as well as the dynamic among and within political parties. As a result, electoral rules affect the incentives and ability of voters and opposition politicians to organize and to monitor the corruption of incumbents.[5]

In addition to the large literature on the effects of electoral rules, a new and growing literature addresses the relationship between political institutions and corruption. This article makes several contributions to this developing field. First, it explicitly distinguishes between corrupt political rent-seeking and pork-barrel spending. The former refers to illicit efforts to increase one's personal wealth; the latter includes government programmes that benefit a narrow group of citizens often in the politician's home district. This distinction is crucial because opportunities for corruption and for pork-barrel projects may interact in complex ways. Secondly, our theoretical argument and empirical finding that PR systems are most susceptible to corrupt political rent-seeking stands in contrast to Lijphart's hypothesis that consensus democracies ought to be less corrupt,[6] as well as Myerson's theoretical model suggesting that larger district magnitudes in PR systems should reduce corruption.[7] In addition, we argue theoretically and show empirically that presidential systems, especially together with CLPR, are more corrupt, which is contrary to Persson and Tabellini's argument that presidential systems should be less corrupt due to checks and balances.[8] Our argument about the link between electoral rules and corrupt political rent-seeking leads to predictions similar to those of Holmstrom and Persson and Tabellini.[9] However, we posit a different causal mechanism that concentrates on the monitoring of incumbents and on the organizational problems that opposition parties face.

Empirically, we confirm Persson and Tabellini's basic finding that proportional elections are associated with higher corruption levels, while contradicting their results about presidential systems. We are also more attentive to other institutional factors that were assumed away or not treated thoroughly by other researchers. We differentiate between closed-list and open-list PR and control for the effects of federalism and presidentialism because they have been shown to influence corruption in several recent papers.[10] We also explore the interaction effects between electoral rules and presidentialism and show that the systems most prone to corruption are presidential systems with

[5] We assume that corrupt rent-seeking opportunities are concentrated in the hands of incumbents. We also assume that incumbents will take advantage of corrupt opportunities if they are not constrained by the risk of detection. They make a trade-off between illicit financial enrichment and re-election chances. Of course, we realize that many politicians will not take advantage of corrupt opportunities because of moral scruples. However, we do not believe that such scruples are affected by a state's constitutional structure. Thus, we focus on the opportunities facing incumbents, on the one hand, and on the monitoring incentives and abilities of voters and opponents, on the other.

[6] Lijphart, *Patterns of Democracy*.

[7] Roger B. Myerson, 'Effectiveness of Electoral Systems for Reducing Government Corruption: A Game-Theoretic Analysis', *Games and Economic Behavior*, 5 (1993), 118–32.

[8] Torsten Persson and Guido Tabellini, *Political Economics: Explaining Economic Policy* (Cambridge, Mass.: MIT Press, 2000); Torsten Persson and Guido Tabellini, *The Economic Effects of Constitutions* (Cambridge, Mass.: MIT Press, 2003).

[9] Bernt Holmstrom, 'Managerial Incentive-Problems – A Dynamic Perspective', in *Essays in Economics and Management in Honor of Lars Wahlbeck* (Stockholm: Swedish School of Economics, 1982); Persson and Tabellini, *Political Economics*, chap. 9.

[10] John Gerring and Strom C. Thacker, 'Political Institutions and Corruption: The Role of Unitarism and Parliamentarism', *British Journal of Political Science*, 34 (2004), 295–330; Jana Kunicová, 'Are Presidential Systems More Susceptible to Political Corruption?' (unpublished, Division of Humanities and Social Sciences, California Institute of Technology, 2002); Daniel Treisman, 'The Causes of Corruption: A Cross-National Study', *Journal of Public Economics*, 76 (2000), 399–457.

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closed-list proportional representation. We recognize that the level of individual freedom and the independence of the media are likely to provide crucial checks on incumbents, but we ask here whether government structure and electoral rules have an independent impact, after controlling for these and other factors. Our analysis is limited to corruption that personally enriches politicians. We do not discuss another aspect of political corruption – the use of campaign funds by politicians to purchase votes on an individual basis. Such corruption is similar to pork-barrel projects financed out of the government budget. The main differences are that such pay-offs are usually made from candidates' private campaign war chests and are part of a direct quid pro quo. Secret ballots have limited the importance of this type of political corruption, but it continues to persist in some emerging democracies.[11]

Compared with other researchers, we use a more comprehensive and up-to-date dataset covering up to ninety-four democracies. We test the robustness of our results to alternative measures of corruption, to different specifications and to the deletion of influential observations.

The remainder of this article is organized as follows. The next section clarifies what we mean by corrupt political rent-seeking and distinguishes between this type of corruption and pork-barrel spending. Then we present our basic theoretical argument about the link between electoral rules and corrupt rent-seeking followed by a section that adds presidentialism to this framework. We state our hypotheses, describe the data and methods used to test them, and present the results of the regression analysis. We discuss possible extensions of our framework to explain targeted versus broad-based government spending and conclude by placing our results in the context of recent contributions to the literature.

THE DEPENDENT VARIABLE: CORRUPT POLITICAL RENT-SEEKING

Corruption is an elusive phenomenon that is difficult to capture in a single crisp definition. Researchers have made numerous attempts to do so, but each has its own problems. Lancaster and Montinola review various definitions of corruption and discuss the relative benefits of adopting one or another definition depending on the nature of the social-scientific inquiry.[12] The definitions they review can be divided into two sets. One set conceptualizes corruption as deviation from some standard, such as the public interest, legal norms, or legal norms *and* moral standards sanctioned by the people.[13] The second

[11] For discussions that include some historical and contemporary examples, see Susan Rose-Ackerman, *Corruption and Government: Causes, Consequences, and Reform* (New York: Cambridge University Press, 1999), pp. 137–8; Susan Rose-Ackerman, 'Political Corruption and Democratic Structure', in Arvind K. Jain, ed., *The Political Economy of Corruption* (London: Routledge, 2001). Thailand is one country where vote buying continues to be common. A survey in 1999 asked about offers to buy votes in recent national and local elections. In the 1996 national elections one-third of the households reported that they were offered money for their votes. The authors consider this to be a lower bound. See Pasuk Phongpaichit, Nualnoi Treerat, Yongyuth Chaiyapong and Chris Baker, *Corruption in the Public Sector in Thailand: Perceptions and Experience of Households: Report of a Nationwide Study* (Bangkok: Political Economy Centre, Chulalongkorn University, 2000), p. 63.

[12] Thomas Lancaster and Gabriella Montinola, 'Toward a Methodology for the Comparative Study of Political Corruption', *Crime, Law, and Social Change*, 27 (1997), 185–206.

[13] For example, Stephen D. Morris, *Corruption and Politics in Contemporary Mexico* (Tuscaloosa: University of Alabama Press, 1991); Robert Klitgaard, *Controlling Political Corruption* (Berkeley: University of California Press, 1988); Robert C. Brooks, 'The Nature of Political Corruption', in Arnold J. Heidenheimer, ed., *Political Corruption: Readings in Comparative Analysis* (New York: Holt, Reinhart, and Winston 1970), pp. 56–61.

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set of definitions associates corruption with system-level attributes, such as patrimonialism (as opposed to rational legal bureaucracy), primordial notions of the public interest (as opposed to the civic notion), or systems in which bureaucrats regard public office as private business.[14] The goal then is to examine the origins or persistence of systems that promote corrupt behaviour.

Our own approach falls into the first conceptual framework, which views corruption as a moral and legal category. We emphasize the institutional roots of corruption under the presumption that changes in institutional structures will change the incentives for self-dealing. In this article, we focus on the corrupt rent-seeking of elected officials (as opposed to appointed bureaucrats) in systems that hold periodic elections with a reasonable amount of political competition and uncertainty of electoral outcome. We define such corruption as *the misuse of public office for private financial gain by an elected official*, a formulation which is now standard in systematic comparative studies.[15] Our topic covers activities that lead to the personal financial enrichment of politicians, not cases in which politicians themselves make pay-offs to get political support. Our normative view of representative democracy holds that elected officials should act as the agents of those who have elected them. Thus, by 'misuse' we mean deviation from the public official's role as an agent of voters. We think of voters and politicians as participating in a principal–agent relationship in which voters entrust their elected politicians with various control rights over public resources. Politicians as agents are expected to act on behalf of voters and in their best interests in exchange for political support. Corrupt rent-seeking occurs if politicians deviate from this ideal and renege on obligations to their principals in favour of personal financial interests.[16] An important corollary here is that a corrupt politician, if exposed, will be punished by voters in the next poll – precisely because of having reneged on his or her implicit principal–agent agreement with voters. The key aspect of our definition is that corrupt rent-seeking is an illicit and covert activity. Furthering the interests of one's constituents is not corrupt under this definition although it may have undesirable consequences for the system as a whole.

Lancaster and Montinola point out that the standard definition on which we are building suffers from the same problems as other definitions based on 'deviations from a social ideal'. Most notably, the nature and size of the 'private gain' derived from the public office by a corrupt politician is often dependent on accepted moral standards and/or laws and regulations in a particular society. Thus, accepting a gift of a moderate value may be considered corrupt in country X, but quite innocuous in country Y. In different normative/legal contexts, corruption will take different forms and refer to different types of behaviour. Reneging on an implicit principal–agent agreement obviously depends on

[14] Robin Theobald, *Corruption, Development, and Underdevelopment* (Durham, Ca.: Duke University Press, 1990); Peter P. Ekeh, 'Colonialism and the Two Publics in Africa: A Theoretical Statement', *Comparative Studies in Society and History*, 17 (1975), 91–112; Robert O. Tilman, 'Black-Market Bureaucracy', in Heidenheimer, ed., *Political Corruption*, pp. 62–4.

[15] Rose-Ackerman, *Corruption and Government*; Treisman, 'The Causes of Corruption'; Wayne Sandholtz and William Koetzle, 'Accounting for Corruption: Economic Structure, Democracy, and Trade', *International Studies Quarterly*, 44 (2000), 31–50; Johann Graf Lambsdorff, *The Transparency International Corruption Perception Index*, 4th edn, http://www.uni-goettingen.de/~uwvw.

[16] Susan Rose-Ackerman, *Corruption: A Study in Political Economy* (New York: Academic Press, 1978), introduces a similar principal–agent framework.

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the underlying form of that agreement, which differs in different societies. However, it is safe to assume that, upon gaining office, politicians know what kind of behaviour will constitute a breach of the implicit principal–agent contract into which they have just entered. In this article we ask whether some institutional structures will inhibit or induce such breaches. Our data incorporate this difference in norms to some extent. Every data-point is the result of an aggregation of surveys of 'well informed observers' of the country in question. Thus, their perceptions should reflect the legal and normative context.

An important complication arises if corrupt rent-seeking goes hand in hand with actions that favour one's constituents. One could imagine a scenario in which a politician accepts secret kickbacks from a company that, in turn, promises to build a factory in the politician's home district or that is selected as a contractor on a public works project in the district. These actions might be in the interest of the politician's electoral base compared with the case of no factory or no public works project. Notice that this example fuses two different acts with electoral implications that go in opposite directions. 'Bringing home the bacon' in the form of job creation and public works in one's district surely carries an electoral premium, but illicit payments may reduce the constituency benefits of the project. The programme may be less well tailored to local needs and overly costly because of kickbacks. Furthermore, even if some corrupt acts produce constituency benefits, the secrecy and lack of transparency involved make it hard for constituents to tell whether the overall impact of having a corrupt political representative is beneficial. We assume that if a representative's corrupt rent-seeking becomes publicly known, it decreases his or her popularity and chances for re-election. This is so not just because of the voters' taste for honesty, but also because an honest and diligent political agent is likely to be a more effective advocate for constituent interests. How these factors play out depends on the distortions introduced by corruption in pork-barrel projects, the value voters place on honesty, as well as on the availability of a challenger who promises both to ensure the well-being of the district and to stay away from illicit enrichment.

Only the acceptance of kickbacks and bribes is considered corruption under our definition; engaging in pork-barrel politics is an analytically distinct form of activity that is rewarded rather than punished by the electorate. An important question is whether a positive association between pork-barrel projects and corrupt rent-seeking is likely looking across electoral systems. Near the end of this article we suggest that the converse should be the case. We argue that the same features of the electoral systems that encourage narrow geographic targeting also enable voters and opposition politicians to monitor corrupt rent-seeking by politicians. We do not test that proposition directly in this article, but review recent empirical studies that provide evidence in support of our hypothesis. In the bulk of this article, however, we set aside pork-barrel activities and concentrate on corrupt acts that personally enrich politicians.

In the next section we present our theory concerning the effects of electoral rules and government structures on the corrupt rent-seeking of politicians, and in subsequent sections we test the predictions of this theory empirically. The data series that we will use to measure corruption is mostly based on elite perceptions of corruption, including the views of those engaged in international business. Thus, it reflects levels of illegal bribery and kickbacks, not benefits that are narrowly targeted to local constituents. We revisit the issue of pork-barrel versus corruption after presenting our empirical findings and propose an extension to our theoretical framework that yields predictions about targeted benefits versus provision of broad-based public goods under different electoral systems.

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THEORETICAL FRAMEWORK: MONITORING CORRUPT POLITICAL RENT-SEEKING

Electoral rules affect the probability of detection by shaping the incentives and ability of political actors to monitor corrupt political rent-seeking. Figure 1 depicts the oversight relations that are shaped by the electoral rules.[17] It includes four types of actors. The first are the incumbent party leaders; the second are the individual rank-and-file legislators who are not in the leadership; the third are political opponents, either individuals or parties; and the fourth are the voters themselves. The incumbents – party leaders and/or individual legislators – have opportunities to extract corrupt rents. However, they are monitored by the political opposition and by voters, and perhaps, by each other.

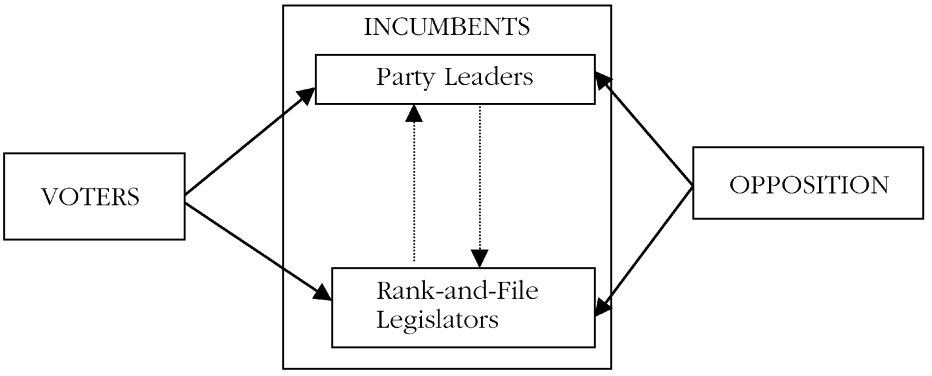


Fig. 1. Monitoring corrupt political rent-seeking

We specify the objective functions of these political actors as follows. First, incumbent politicians, both leaders and rank-and-file, care about individual wealth and re-election. They would like to maximize rents without being detected, because detection is associated with costs, both monetary (such as legal fees or even a prison term) and political (decrease in probability of re-election). Secondly, opposition candidates care about winning office. Their chances of winning increase as the chance of the incumbents' re-election decreases, so the opposition benefits from revelations of corruption involving incumbents. Finally, voters prefer honest officials to elected ones who enrich themselves through pay-offs. Voters' utility decreases when public resources are diverted for private gain. This is, of course, the reason why we assume that a corruption scandal lowers the incumbent's chance of re-election. We posit that even if bribes are paid in connection with projects that benefit voters, voters do not view corruption as a necessary cost of such projects; they prefer honestly provided 'pork' to projects whose costs have been inflated by corruption. Thus, corrupt pay-offs to politicians are not, in our framework, passed through to voters.

To understand how electoral rules affect the monitoring of corrupt illicit enrichment, we explore three interrelated issues. First, how do the *opportunities* for private gain differ in different electoral systems? Secondly, who has the *incentive* to monitor potentially corrupt groups or individuals? Thirdly, who has the *ability* to do so?

[17] An obvious monitoring device that we do not consider here is investigative journalism. We do not believe that electoral rules affect the incentives and ability of journalists to go after corrupt politicians. Because the freedom of the press appears to be exogenous, we hold it constant throughout our analysis and control for it in the empirical analysis.

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Opportunities for Private Gain

The first salient difference between voting systems is the locus of control over corrupt rents, that is, the *opportunities* for private gain. Under CLPR the party leaders are very powerful compared with the rank-and-file because they determine a candidate's ranking on the list.[18] Thus the leadership faces most of the opportunities for private gain and can determine how the spoils are divided. The rank-and-file party members in the legislature face few individualized corrupt opportunities. The situation is similar under OLPR, except that the leadership itself may be more divided and unstable. Individual members can challenge the leadership by threatening to campaign against them through direct appeals to voters.[19]

Compare the situation under plurality rule. Here, individual incumbents may gain power within the party because of the strength of their local power base or their strategic position within the legislature. Such incumbents may be able to demand a share of the rents of political power in the form of corrupt payoffs and/or in pork-barrel projects for their districts. Of course, under some conditions individual members have little bargaining power because the leadership can replace them with other members in its efforts to form a majority coalition.[20] However, at other times the majority party may have a slim margin overall or face difficulties getting sufficient votes on a particular issue. A member might also be a pivotal vote on a key committee or have enough of an independent following to launch an attack on the leadership. Individual members can then use their bargaining power against the leadership to get benefits so long as the threat to defect is credible. The legislators' own preferences for pay-offs or pork will be a function of the oversight by voters, the media and citizens groups, on the one hand, and challengers, on the other.[21]

[18] In Argentina provincial party leaders control the lists and thus the careers of rank-and-file members (see Pablo Spiller and Mariano Tommasi, 'The Institutional Foundations of Public Policy: A Transactions Approach with Application to Argentina', *Journal of Law, Economics, and Organization*, 19 (2003), 281–306). In Turkey's CLPR system the leaders 'are the emperors of their parties [with] absolute control over the all-important party lists' (see 'Shifting Coalitions', *The Economist*, 10 June 2000).

[19] In Brazil's OLPR system, representatives can easily change parties, and the parties are required to include on their lists incumbents who wish to seek re-election. See Jeff Bowen and Susan Rose-Ackerman, 'Partisan Politics and Executive Accountability: Argentina in Comparative Perspective', *Supreme Court Economic Review*, 10 (2003), 157–210; Barry Ames, *The Deadlock of Democracy in Brazil* (Ann Arbor: University of Michigan Press, 2001). In another OLPR country, Latvia, the weakness of parties is reportedly compensated for through bribery of party factions (RFE/RL, *Crime, Corruption, and Terrorism Watch*, vol. 1, no. 5, 29 November 2001).

[20] Eric Rasmussen and J. Mark Ramseyer, 'Cheap Bribes and the Corruption Ban: A Coordination Game Among Rational Legislators', *Public Choice*, 78 (1994), 305–27.

[21] Such deals are common in American politics both inside Congress and in negotiations between members of Congress and the president. The loose party discipline and the power of individual committees mean that those in the position to demand rents are not necessarily party leaders. Sometimes a member wants a benefit in return for a vote and is, in turn, threatened with a cost if he defects. For example, in order to pass the Medicare prescription drug bill in the fall of 2003 a member of the House leadership is alleged to have made clear to a retiring congressman that 'business interests' would finance his son's campaign to replace him only if he voted for the bill (see Timothy Noah, 'A Drug-Company Bribe?' *Slate Magazine*, 9 December 2003; John Bresnahan, 'Smith Probe Now Official,' *Roll Call*, 18 March 2004). During the Watergate period, a member of a key congressional committee was alleged to have helped quash an investigation in return for a Department of Justice decision to drop a bribery case against him. The case was later revived, and the congressman was convicted in July 1974 (see Webster Griffen Tarpley and Anton Chaikin, *George Bush: The Unauthorized Biography* (Washington, D.C.: Executive Intelligence Review, 1992), pp. 248–9); 'Bugging hearings rejected: House panel defeats bid by Patman', *Washington Post*, 4 October 1972; 'House panel bars pre-Nov. 7 Inquiry into bugging case', *New York Times*, 4 October 1972). Finally, on the pork-barrel side of the ledger the omnibus budget bills of recent years are full of special benefits for the districts of key supporters, and spending under programmes such as rivers and harbours legislation is especially concentrated in the districts of members in strategic positions in the committee

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This discussion suggests that in terms of uncovering corrupt rent-seeking, monitoring the leadership is relatively more important under PR, and monitoring the rank-and-file is relatively more important under plurality rule. Of course, leaders may be able to garner corrupt rents under plurality rule as well. Our claim is only that individual legislators have more opportunities for rent extraction under plurality than under CLPR. Thus, in PR systems, especially closed-list ones, the opportunities for rent extraction are vested mainly in party leaders. In plurality they are divided between the party leaders and individual representatives.

Monitoring Incentives and Abilities

Now consider the *incentives* and *ability* of political actors to engage in monitoring. The oversight relations that interest us are mainly voters' and political opponents' monitoring of both party leaders and individual politicians. We are not concerned with the overall level of oversight, but with the way the electoral system affects monitoring on the margin. In addition, we assume both that monitoring is costly and that hiding one's malfeasance is a difficult and imperfect process.[22]

Monitoring by voters. As a normative matter, rank-and-file politicians need to be more closely monitored by voters under plurality rule than under CLPR because the rank-and-file incumbents have more control over rents under plurality rule. As a positive matter, we argue that this is what we would expect to happen.

Voters' ability to monitor the relevant actors depends on the voters' ability, first, to observe malfeasance if it occurs and, secondly, to organize for oversight. Assume that corrupt rent-seeking imposes costs on citizens in terms of inflated budgets, low value public projects, etc. Hence, if voters can identify corrupt politicians, they will punish them by voting against them in the next election. Persson and Tabellini argue that voting over individual candidates, as in a plurality rule system, creates a direct link between individual performance and re-election.[23] This, in turn, gives incumbents an incentive to avoid corruption.[24]

However, so far, this argument does not distinguish well between voting systems. In CLPR systems, the leadership is also known to the voters. Because it is precisely the leadership that needs to be monitored in CLPR, voters can identify those politicians most

(F'note continued)

structure, who are not necessarily in the top leadership. See, for example, Richard D. Utt, 'Yes, Mr. President, Veto the Highway Bill', *Heritage Foundation Reports*, 13 February 2004; Paul Singer, 'Congress oks spending bill; foes can't stop $822 billion measure', *Chicago Tribune*, 23 January 2004; John Ferejohn, *Pork Barrel Politics: Rivers and Harbors Legislation, 1947–1968* (Stanford, Calif.: Stanford University Press, 1974). We are grateful to David Mayhew for pointing us towards these examples.

[22] Some claim that corruption can easily be hidden by putting pay-offs in overseas bank accounts, but this ignores three features of corrupt transactions. First, the politicians may want to enjoy their spoils. Secondly, arranging payments and providing benefits may be subject to discovery. Thirdly, corruption will usually have consequences in the form of inflated budgets, high taxes, poorly functioning programmes or fewer constituency benefits.

[23] Persson and Tabellini, *Political Economics*; see also Holmstrom, 'Managerial Incentive-Problems'.

[24] Torsten Persson, Guido Tabellini and Francesco Trebbi, 'Electoral Rules and Corruption', *Journal of the European Economic Association*, 1 (2003), 958–89.

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subject to corrupt incentives for personal enrichment. Of course, it is not sufficient to identify those who might be corrupt. In addition, voters must be able to assess whether the politicians actually are engaging in malfeasance. They need to monitor the rank-and-file under plurality and the leadership under CLPR.

Such monitoring should be easier in 'small' districts. 'Small' refers not to the mean district magnitude (the number of representatives elected per district), but rather to the voting population of the district. Correcting for other factors, such as geographical size, voters in a district with a small population are more likely to have direct contact with their representative and hence more information about the candidates they elect. In addition, as we argue below, they will have more incentives to organize for oversight. Yet it is not obvious that electoral systems are systematically related to the geographic size of districts. Many PR systems have nation-wide districts, whereas plurality systems are usually partitioned into geographically compact districts. However, the total population size of the country surely plays a role as well in determining the size of districts: large countries such as the United States or India are likely to have more populous districts than Luxembourg or Slovenia. To test the relative impact of these factors, we regressed the average district size in a country on the plurality dummy and national population. The coefficients on both the plurality dummy and population are highly significant with the expected signs: plurality systems are indeed associated with the size of the district, controlling for the effect of the total population of the country.[25] Given this empirical regularity and holding the freedom of the press constant, we would expect that information about individual kickbacks to politicians would be less readily available to voters in CLPR systems with large districts than in plurality systems with smaller districts.

The second argument concerns the incentives of voters to organize to provide oversight. Free-rider problems are ubiquitous in political life, and the monitoring of corruption is no exception. In general, collective action problems among voters should be less severe in small groups than they are in large groups.[26] This suggests that citizens in smaller districts, measured by number of voters, ought to find it easier to overcome free-rider problems than those in larger districts. Holding other factors constant, plurality rule produces districts with smaller numbers of voters than PR. Thus, overcoming free-rider problems may be easier in such systems.

Our discussion of monitoring by voters has so far left out OLPR systems. There, similar to CLPR, the leadership controls the rents. Yet OLPR shares one feature with plurality rule: voters can cast their votes for particular candidates, albeit within a party. However, the first feature of plurality systems – relatively small single-member districts – is absent in OLPR systems. This disables grass-root monitoring by voters who, in addition, are likely to face considerable collective action problems. Furthermore, individual candidates are likely to have little say over their party's rent-extraction activities. On balance, then, OLPR systems fall in between CLPR and plurality systems.

However, under any electoral system, one may doubt the importance of monitoring by voters in constraining politicians' corrupt behaviour. After all, even relatively small districts are large enough for collective action problems to arise. However, although this

[25] One of the specifications that we ran was as follows: distsize = constant − 1.37 × plurality + 1.23 × log(population) + error. The coefficients on both causal variables were significant at 99 per cent, with standard errors 0.21 for plurality and 0.14 for log(population); R^2 was 0.49.

[26] Mancur Olson, *The Logic of Collective Action* (Cambridge, Mass.: Harvard University Press, 1982).

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type of monitoring is neither a sufficient nor a perfectly efficient constraint on corrupt political rent-seeking, we believe that at the margin it will affect whether or not politicians engage in malfeasance. We claim that information about a politician's lifestyle is likely to be more easily accessible in smaller districts. Of course, besides direct contact with their representative, voters become informed through media and active anti-corruption law enforcement.[27] Although these factors account for many uncovered corruption cases, we have no reason to believe that the type of electoral system affects the freedom of the press or of the effectiveness of the prosecutorial system. In this sense, media freedom and judicial/prosecutorial competence are outside our theoretical framework, although in our empirical specifications we do control for these alternative revelation mechanisms.

Monitoring by political opponents. Because voters face collective action problems even in 'small' districts, the second piece of the puzzle is particularly important. This is the competitiveness of the political system and its impact on the monitoring of incumbents by their political opponents. As we noted above, challengers have a direct incentive to uncover the malfeasance of incumbents because they increase their probability of winning office once the incumbent is discredited. They can do this under PR systems by investigating the integrity of party leaders and under plurality rule at the district level as well. We argue, however, that it is less likely that the opposition will effectively monitor incumbents under PR. Our claim concerns the adverse effects of multiple parties and coalition politics on monitoring.

To proceed, consider, first, the opposite argument, namely that competitive pressures are higher under PR and will lead to lower corruption.[28] Under PR, entry barriers are low so that multiple parties are common; under plurality rule, when Duverger's law holds, only two major parties will compete in each district. Even if many regional parties enter the legislature, as is the case in India, most districts will have only two viable parties. Assuming that politics is multidimensional, voters will not be able to vote out corrupt rent-seekers if honest candidates, whom the voters might like on other issues as well, find it difficult to enter into the competition for public office. This is an important argument, but it ignores the incentives that all opponents have to uncover corruption, independent of their ideology. Furthermore, political institutions that entrench incumbents will lower the benefits of exposing corruption under any electoral system.

The barriers-to-entry theory is an application of economic arguments from industrial organization to the realm of politics. The basic point that a competitive political system limits corruption seems a valid one.[29] It is not obvious, however, that multi-member districts produce benefits similar to those of markets with many competing firms. True,

[27] Min Shi and Jakob Svensson, 'Conditional Political Business Cycles' (CEPR Discussion Paper No. 3352, 2002), present a related formal model in which the share of informed voters influences the politician's manipulative behaviour, be it outright diversion of funds or inflation of budgets and overspending. Their model yields an intuitive result: the lower the share of informed voters, the higher the returns from manipulative behaviour.

[28] Myerson, 'Effectiveness of Electoral Systems for Reducing Government Corruption'; Torsten Persson, Gerard Roland and Guido Tabellini, 'Comparative Politics and Public Finance', *Journal of Political Economy*, 108 (2000), 1121–41.

[29] Rose-Ackerman, *Corruption*.

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a plurality system with single-member districts will often produce only two parties. However, one opposition party with a credible chance of winning the election ought to be sufficient to give the incumbent an incentive to limit self-dealing. Under plurality rule, coalition governments are unlikely unless many regional parties exist. Because the election is an all-or-nothing affair, the stakes are high for the challenger. This gives the party out of power an incentive to undermine the incumbent's integrity. Under PR, coalitions are common, and in many countries parties do not sort themselves into two stable blocs. Instead, a party currently in opposition may expect to form a coalition with one or more of the incumbent parties sometime in the future. If this is so, opposition politicians may want to form a coalition with a party currently in power. If so, they have little incentive to expose the corruption of politicians whom they might need to collaborate with in the future. Both the Italian and the Brazilian cases appear to be consistent with that claim.[30] The lack of a clear alternation between fixed groups of parties deters inter-party monitoring. Furthermore, if a politician uncovers a scandal under plurality rule with two parties, the benefits flow to him and his party. Under PR, even if the party that uncovers the scandal is especially rewarded at the polls for its vigilance and integrity, the scandal provides marginal benefits for all opposition parties.[31] This could produce a race in which opposition parties compete to reveal a scandal, but under plausible conditions, everyone may keep quiet if the cost of uncovering malfeasance is high and/or if the scandalmonger is punished by being excluded from future coalitions.

In short, the argument that corruption monitoring will increase with the number of political opponents does not seem convincing.[32] To the contrary, the impact of competitive politics on the monitoring of corrupt rent-seekers may actually fall as the number of parties increases. The number of parties is a poor proxy for the intensity of competition, at least with respect to the control of corrupt self-enrichment by politicians.

Comparison of Electoral Systems

Table 1 summarizes our arguments about the oversight relations under three types of electoral systems holding other factors constant. The table presents our claims about the *relative* incentives and ability of political actors to monitor rent-extraction by politicians. Thus an entry that reads 'strong' means stronger relative to the other electoral systems listed.

Plurality rule scores the highest of the three stylized electoral systems on both the incentives and the ability of political actors to monitor rent-extraction. Districts with small numbers of voters somewhat mitigate the collective-action problems of voters and make

[30] On the Italian case, see Donatella della Porta and Alberto Vannucci, *Corrupt Exchanges: Actors, Resources, and Mechanisms of Political Corruption* (New York: Aldine de Gruyter, 1999); and Silvia Colazingari and Susan Rose-Ackerman, 'Corruption in a Paternalistic Democracy: Lessons from Italy for Latin America', *Political Science Quarterly*, 113 (1998), 447–70. José Antonio Cheibub raised this point with us and pointed to the case of Brazil as an example.

[31] The first round of the 2002 French election illustrates this point. With sixteen candidates, no one had much incentive to focus on the allegations of corruption against Jacques Chirac. A scandal would help all opponents and do little to benefit those who took the time and trouble to raise the issue.

[32] The main concern under plurality rule is the likelihood that some districts will be captured by members of a single party who can exploit their position for private gain. However, this problem is not well proxied by a measure of district magnitude.

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TABLE 1 *Relative Incentives and Ability to Monitor Corrupt Political Rent-Seeking*

	Voters → Incumbents		Opposition → Incumbents	
	Incentives	*Ability*	*Incentives*	*Ability*
Plurality *Main locus of rents:* individual reps. & party leaders	STRONG	STRONG	STRONG	STRONG
OLPR *Main locus of rents:* party leaders	INTERM.	INTERM.	WEAK	WEAK
CLPR *Main locus of rents:* party leaders	WEAK	WEAK	WEAK	WEAK

it easier for voters to observe the behaviour of individual legislators – likely participants in most corrupt deals in such systems. At the opposite extreme, under CLPR, collective action problems are likely to be more serious, and voters find it difficult to observe the behaviour of party leaders – the primary locus of corrupt deals in CLPR. Furthermore, plurality rule will produce opposition parties with higher incentives to unveil the corrupt rent-seeking of incumbents than in multiple party regimes. Because OLPR systems share features of both CLPR and plurality systems, they occupy an 'intermediate' category in monitoring corrupt self-enrichment.

The table omits one monitoring possibility included in Figure 1 – intra-party oversight. This can involve both rank-and-file monitoring of leaders and leadership monitoring of the rank-and-file. Such monitoring is unlikely to be a sufficient constraint on corrupt rent-seeking under any electoral system. The basic problem is collusion. If there is little outside monitoring by voters, opponents or other parts of civil society, leaders can collude with the rank-and-file to share corrupt rents. Internal party whistle-blowers can arise, but without external monitors, this is likely to be a risky role to play even under plurality rule.

To conclude, we predict that plurality rule voting will do a better job at controlling corrupt political rent-seeking than PR, especially CLPR. The cost of plurality rule may be a political system that focuses on providing benefits to narrow ranges of constituents in key districts, but that is simply the consequence of the more individualized nature of politics. Under plurality rule, corrupt opportunities for personal gain will be concentrated on just those political actors who are best able to be monitored by voters, and the two-party system that frequently results will give opponents an incentive to uncover scandals at any level.

PRESIDENTIAL AND PARLIAMENTARY SYSTEMS

Opportunities for corruption are enhanced by centralized control over government. Then those with power can, if they wish, create rent-seeking opportunities with little oversight inside government. In particular, a president who controls the executive branch has rent-creating possibilities that can be used for personal gain. In a presidential system, the leaders of the legislative parties are less powerful than under a parliamentary

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system.[33] They must negotiate with the president to pass legislation and do not control the rents that arise within the executive.[34]

Because of the president's undivided power over many sources of rents, diverting them for personal gain is likely to be easier than in a more collegial system of cabinet government.[35] The president can also create additional rents through executive action. In spite of the legislature's incentive to monitor the president, his fixed term in office gives him considerable leeway subject only to the threat of impeachment. The legislature has no instrument similar to the vote of no confidence in parliamentary systems. Of course, legislatures do try to restrict presidential freedom, but their control is less direct than that exercised by a parliament over the cabinet in a parliamentary system. In addition, in most presidential systems, US-style checks and balances are absent, and presidents tend to have extensive legislative and non-legislative powers. This is not inherent in the nature of presidential systems but is an empirical reality. Using a large cross-section of countries, Kunicová shows not only that presidentialism *per se* is associated with higher corruption, but also that the more extensive the president's powers, the more corruption.[36] Thus, monitoring of the executive by the legislature is, in principle and in practice, more difficult in presidential systems than in parliamentary ones.

Presidents frequently need to co-operate with the legislature to get policy initiatives passed.[37] A corrupt president may seek to enact statutes that incorporate rent-generating opportunities that can be exploited for personal gain. To pass such laws, however, the president needs to bargain with the legislature. In such cases, electoral rules affect the strength of legislative parties and their bargaining power in dealings with the president.

Theoretical claims about electoral rules and party strength have two prongs. First, as discussed above, parties are stronger under CLPR than under plurality rule. Secondly, parties are weaker in presidential systems than in parliamentary systems because in the former they do not need to organize themselves to form a government.[38] Taken together, these arguments imply that parties will be weakest in presidential systems with plurality-rule legislatures and strongest in parliamentary systems operating under CLPR. The other two possibilities fall somewhere between the extremes.

The relation to the expected level of corrupt rent-seeking is complex. On the one hand,

[33] Matthew S. Shugart, 'The Inverse Relationship Between Party Strength and Executive Strength: A Theory of Politicians' Constitutional Choices', *British Journal of Political Science*, 28 (1998), 1–29; Scott Mainwaring, 'Presidentialism, Multipartism, and Democracy', *Comparative Political Studies*, 26 (1995), 198–228.

[34] Gary W. Cox and S. Morgenstern, 'Latin America's Reactive Assemblies and Proactive Presidents', *Comparative Politics*, 33 (2001), 171–90; Lisa Baldez and John M. Carey, 'Presidential Agenda Control and Spending Policy: Lessons From General Pinochet's Constitution', *American Journal of Political Science*, 43 (1999) 29–55; and D. Roderick Kiewiet and Matthew McCubbins, *The Logic of Delegation: Congressional Parties and the Appropriations Process* (Chicago: University of Chicago Press, 1991), analyse the interaction between presidents and assemblies in Latin America, Chile and the United States, respectively.

[35] Russia's Boris Yeltsin 'allowed a financial-industrial oligarchy to replace formal politics by a system of informal deals', according to Richard Sakwa, 'Russia: From a Corrupt System to a System with Corruption?' in Robert Wilson, ed., *Party Finance and Political Corruption* (Basingstoke, Hants.: Macmillan, 2000), pp. 140–1.

[36] Kunicová, 'Are Presidential Systems More Susceptible to Political Corruption?'

[37] Cox and Morgenstern, 'Latin America's Reactive Assemblies and Proactive Presidents'; Lijphart, *Patterns of Democracy*; Shugart, 'The Inverse Relationship between Party Strength and Executive Strength'.

[38] Mainwaring, 'Presidentialism, Multipartism, and Democracy'; Shugart, 'The Inverse Relationship Between Party Strength and Executive Strength'; Shugart, 'Presidentialism, Parliamentarism, and Provision of Collective Goods in Less-Developed Countries'.

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we expect that presidential systems will generate more opportunities for corrupt enrichment than parliamentary systems that use similar voting rules for the legislature. On the other hand, we expect that CLPR systems will have more corrupt rent-seeking than plurality systems. The combination of CLPR and presidentialism is likely to create unfortunate synergies.

Under CLPR, the president can form an alliance with the party leaders to share rents at relatively low transaction costs because the rank and file does not have to be included. Even if the parties are somewhat weaker than under a parliamentary system, they still control their members. In contrast, if a president faces a plurality-rule legislature whose parties are weak, he may have to bargain with a multitude of individual members in order to form an alliance. Any alliance will be difficult to form in the first place because of the number of legislators involved. Furthermore, it may be difficult to sustain if marginal members threaten to defect. Even rank-and-file members of a party that is nominally allied with the president have an incentive to be 'integrity entrepreneurs' to enhance their own reputations. This discussion suggests that the greater opportunities for corrupt rent-seeking created by presidentialism should be especially evident in CLPR systems. OLPR ought to be an intermediate case.

To complete the argument, consider the possibility of monitoring by voters and opposition politicians. These groups have an incentive to monitor the president, but their ability is limited. For voters, the situation is similar to that of their monitoring of party leaders – the collective action problems are large in nation-wide districts and evidence of corruption is hidden in public contracts and individualized decisions that are hard to monitor. In contrast, legislators from parties different from the president's do have an incentive to monitor, and if they control the legislature, they may have the power to enact laws that constrain the president. The issue is then whether the role of opposition parties ought to differ between PR and plurality systems. The problem for a corrupt president is not simply to get a majority behind the corrupt initiative, but also to assure that minority legislators do not blow the whistle to enhance their own political standing with the voters. It appears that what matters in presidential bargaining with the legislature is not the number of parties that the president needs to work with, but the extent to which these parties are capable of voting as unified blocs. In this sense, CLPR seems to be most conducive to corrupt deals.

HYPOTHESES

From our discussion above, we derive the following two hypotheses:

H1: *Existence of a relationship between electoral rules and corruption. Ceteris paribus*, we expect CLPR systems to be the most corrupt, followed by OLPR, and then plurality systems.

H2: *Interaction effects. Ceteris paribus*, presidential PR systems are expected to be more corrupt than their parliamentary counterparts. We predict that CLPR presidential systems will be especially corrupt relative to other types of government structures.

DATA, MEASUREMENT AND ECONOMETRIC METHODS

Our empirical tests use cross-country data that characterize countries in terms of the level of corruption and the legislative selection mechanism. To this basic data we add

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information on whether a separately elected president exists and include other background political and economic variables.

Corruption Data

Corruption is necessarily difficult to define, systematically observe and measure. However, several indices attempt to capture the abuse of political and bureaucratic power across countries. We rely on the Control of Corruption Index (CORRWB), also known as GRAFT, compiled by the World Bank.[39] This index includes estimates for 124 countries using data similar to that used by Transparency International (TI), which has published its annual CPI ranking of countries since 1995.[40] Both TI and the World Bank aggregate surveys of perceived corruption across countries. The surveys are based on the views of business people, risk analysts, investigative journalists and the general public. Specifically, the focus is on kickbacks in public procurement, the embezzlement of public funds and the bribery of public officials. Although the two indices are highly correlated, we prefer CORRWB because it covers a larger number of countries and is a 'second-generation index' in terms of aggregation methodology. It uses an unobserved components model to aggregate up to thirty surveys in 1997–98. This model expresses the observed data as a linear function of unobserved corruption plus a disturbance term capturing perception errors and sampling variation in the indicator. The model allows one to compute the variance of this disturbance term, which is a measure of how informative the index is. The point estimate of control of corruption is the mean of the conditional distribution of CORRWB given the observed data and ranges between -2.5 (most corrupt) and $+2.5$ (least corrupt). The variance of this conditional distribution provides an estimate of the precision of the CORRWB indicator for each country.

Both datasets have been widely used among researchers conducting cross-country analyses of corruption. The TI index has, for example, been used by Fisman and Gatti, Treisman, Sandholtz and Koetzle, Persson, Tabellini and Trebbi, and Kunicová.[41] Being newer than the CPI, CORRWB has been used in fewer studies, mostly by the researchers at the World Bank and the Inter-American Development Bank.[42] We use CORRWB as our main dependent variable and check the robustness of our results by re-running the models on the TI index.[43]

[39] Daniel Kaufmann, Aart Kraay and Pablo Zoido-Lobaton, 'Aggregating Governance Indicators' (Washington, D.C.: World Bank Working Paper 2195, 1999).

[40] Lambsdorff, *The Transparency International Corruption Perception Index*.

[41] Ray Fisman and Roberta Gatti, 'Decentralization and Corruption: Evidence Across Countries' (unpublished, Washington, D.C.: World Bank, 1999); Treisman, 'The Causes of Corruption'; Sandholtz and Koetzle, 'Accounting for Corruption'; Persson, Tabellini and Trebbi, 'Electoral Rules and Corruption'; Kunicová, 'Are Presidential Systems More Susceptible to Political Corruption?'

[42] Daniel Kaufmann and Shang-Jin Wei, 'Does "Grease Money" Speed Up the Wheels of Commerce?' (Cambridge, Mass.: National Bureau of Economic Research Working Paper 7093, 1999); Gil Mehrez and Daniel Kaufmann, 'Transparency, Liberalization, and Financial Crises' (Washington, D.C.: World Bank Policy Research Working Paper 2286, 1999); Joel Hellman, Geraint Jones, Daniel Kaufmann and Michael Shankerman, 'Measuring Governance, Corruption, and State Capture: How Firms and Bureaucrats Shape the Business Environment in Transition Economies' (Washington, D.C.: World Bank Policy Research Working Paper, No. 2312, 2000); Alicia Adsera, Carles Boix and Mark Paine, 'Are You Being Served? Political Accountability and the Quality of Government', *Journal of Law, Economics, and Organization*, 19 (2003), 445–90.

[43] All the dependent variables are highly correlated (0.94–0.99). This is not surprising because both series rely on the same underlying surveys, and the annual TI indices include data from previous years. The TI results are not reported due to space limitations, but they are consistent with the results in the text.

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The data on corruption are based on perceptions, not concrete measures of pay-offs. However, with the exception of a few narrowly focused studies, no such objective data exist. This raises the possibility that corruption may be perceived to be high because people take the trouble to uncover it. Although this obviously can occur in an individual country as policy changes over time, we argue that it would not represent a stable result. We assume that politicians act strategically. If they predict that their corruption is likely to be discovered, they will engage in less of it. Then perceptions and reality would converge. Political systems that encourage corruption would be more corrupt, and those who deal with the state at high levels would also perceive corruption to be high. Thus we believe that, for our purposes, perception-based indices are satisfactory proxies for the underlying level of payoffs.

However, the indices have another weakness. They measure overall perceptions of public sector corruption in a country, but our interest is only in rent-seeking corruption by politicians. Ideally, we would prefer a more precise measure of political, as opposed to bureaucratic, corruption. Unfortunately, only one of the component surveys, the Gallup International, distinguishes between political and administrative corruption, and it has very limited country coverage. However, as reported in the Transparency International's *CPI Framework Document*, the correlation between the assessments of political and bureaucratic corruption is 0.88. Transparency International considers this a justification for 'blending political and bureaucratic corruption, because there is no strong evidence that countries differ in prevalence of one type of corruption over another' and claims that 'the extent of political corruption is well represented by this data'.[44] The same argument also can be made for CORRWB, because it shares the same substantive characteristics as the CPI. Furthermore, the survey respondents are mostly people who would be particularly familiar with high-level corruption, most of which will involve top political actors even if it occurs within the executive branch.

Institutional Data

Our theoretical model concentrates on the distinction between three broad and stylized electoral rules: plurality, CLPR and OLPR. The electoral system variables are derived from the World Bank's Database on Political Institutions (DPI 2a) as described by Beck, Clarke, Groff, Keefer and Walsh.[45] We also check the robustness of our results by using a measure of party-centrism developed by Seddon, Gaviria, Panizza and Stein[46] and by substituting for our dummies the proportion of lower-house seats elected by CLPR.

The original dummy variables for voting rules, taken from DPI 2a for a cross-section of countries in 1997, have a non-empty intersection. In most cases, this reflects the fact that some bicameral systems use PR for one house and plurality for another, or that there are mixed electoral rules in a unicameral legislature. We create mutually exclusive categories *PLURALITY, CLPR* and *OLPR*, by considering which electoral rule elects the majority of representatives in the Lower House. To see if the group of hybrid electoral systems is different from the 'pure' ones, we construct two dummy variables, *PRMIXED*

[44] Lambsdorff, *The Transparency International Corruption Perception Index*.

[45] Thorsten Beck, George Clarke, Alberto Groff, Philip Keefer and Patrick Walsh, 'New Tools and New Tests in Comparative Political Economy: The Database of Political Institutions', *World Bank Economic Review*, 15 (2001), 165–76.

[46] Seddon, Gaviria, Panizza and Stein, 'Political Particularism Around the World'.

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and *PLUMIXED*. The former takes the value 1 when a system that we have characterized as PR also has plurality elements. The latter takes the value 1 whenever a system labelled as *PLURALITY* has some PR features. There are fourteen countries in each of these categories.

We consider two alternatives to our main explanatory variables. First, we employ the index of particularism (PARTICULARISM). It is designed to be an 'indicator of the degree to which individual politicians can further their careers by appealing to narrow geographic constituencies, on the one hand, or party constituencies, on the other'.[47] The index is based on the seminal work by Carey and Shugart,[48] although the constructors of the index have not always accepted Carey and Shugart's scheme, especially with respect to plurality rule systems. The index is an average of three components: *Ballot, Pool* and *Vote*, and takes values between 0 (most party-centred) and 2 (most candidate-centred). *Ballot* describes party control over the ballot, with 0 being full control of the party, i.e. closed list; 1, limited control of the party, and 2, no control. *Pool* measures sharing of votes across candidates in a party and is 0 if votes are divided at the party level, 1 if votes are divided at the sub-party level, and 2 if votes cast for a particular candidate determine his electoral success. *Vote* codes candidate versus party-specific voting: 0 is a single vote for a party, 1 for multiple votes, and 2 for one vote for one candidate. We have based our theoretical arguments on the different monitoring constraints that stem mainly from differences in how politicians are evaluated by voters, their party bosses or opposition politicians. The *Ballot* and *Pool* scores directly describe the control of party leadership over the rank-and-file candidates, while the *Vote* score gets at the link between voters and the person who is elected. Thus this index provides an alternative proxy for the causal story we present here, but one that combines a number of different factors in an essentially arbitrary way that is difficult to interpret. Nevertheless, we report results using this variable to demonstrate that our results are not an artefact of the particular variables we use.

The second alternative to simple electoral system dummies is *CLSHARE*, a variable that first, distinguishes between systems where CLPR dominates and all others and, secondly, reflects the strength of CLPR in those systems where it is the dominant rule. Thus the variable is 0 for all systems we classify as *PLURALITY* and *OLPR* and takes on values greater than 0.5 and less than or equal to 1 for countries in our *CLPR* category, that is, those that elect at least half of their legislatures using CLPR. It is obtained by interacting PLIST from Persson, Tabellini and Trebbi with the CLPR dummy.[49] Thus, for those who have a share of CLPR that is less than half, for example, Albania and Armenia, *CLSHARE* takes the value of 0.

To test for interaction effects between electoral rules and presidentialism, we employ a presidential dummy (*PRESIDENT*). *PRESIDENT* is derived from DPI 2a and takes the value 1 if the system has a directly elected president independent of the legislature and 0 otherwise. We interact *PRESIDENT* with the electoral rule dummies to obtain mutually exclusive categories *CLPRES, OLPRES, PLPRES, CLPARL, OLPARL* and *PLPARL*.

[47] Seddon, Gaviria, Panizza and Stein, 'Political Particularism Around the World'.
[48] Carey and Shugart, 'Incentives to Cultivate a Personal Vote'.
[49] Persson, Tabellini and Trebbi, 'Electoral Rules and Corruption'.

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Control Variables

We control for other institutional and background conditions. Theoretical work on federalism is inconclusive. On the one hand, a more decentralized system might make monitoring easier for voters. On the other hand, local politicians may be able to wield monopoly power over voters, especially in systems with a history of local political or economic fiefdoms. Recent empirical work has found that, on balance, federal systems are more corrupt than unitary systems.[50] Thus, we include federal structure as a control variable. The dummy (*FEDERAL*) is taken from DPI 2a; it has the value 1 if there are autonomous regions with extensive taxing, spending and regulatory authority.

To control for economic development, we use the log of averaged gross domestic product per capita (*GDP*), 1995–97.[51] We also control for other aspects of the political system that may influence the level of corruption – such as political rights and liberties. Freedom House provides a measure of these factors. Its index (*FREEDOM*) is a composite of several aspects of personal and economic freedom including freedom of the press, an aspect of public life that is particularly relevant to the control of corruption.[52] We average the years 1992–93 through 2000–01; the index takes values from 1 (free) to 7 (least free). Because we are only interested in democracies, we exclude from our sample those countries that score 5.5 or higher on this index, even if some of these countries have formal electoral institutions.

Although we consider GDP per capita and the Freedom House index to be the most important background controls, we also experimented with a larger set of economic, cultural and social variables that were shown to influence corruption by other studies. These variables are: ethno-linguistic fractionalization (*ELF*), percentage of population Protestant (*PROT*), British colonial heritage (*BRITCOL*), democracy over the last fifty years (*STABDEMO*), openness to trade (*OPEN*), and regional dummies for Africa, East Asia, Latin America, OECD and post-Communist countries (*AFRICA, ASIAE, LAAM, OECD* and *POSTCOM*).[53] We prefer the Freedom House index and GDP per capita to this large set of controls, however, because of potential simultaneity and truncation effects. Many of these controls, such as colonial origin, ethno-linguistic fractionalization and religious background, may well have influenced the choice of electoral systems and constitutional structures. We are not trying to explain that choice. Rather, *given* that choice, we seek to discover if it has implications for the level of corruption. Thus, we do not want to include explanatory variables that are themselves part of the reason for the choice of one or another political system. In addition, these other control variables are only available for a limited number of countries and would truncate our sample in a potentially systematic way. The Appendix lists the variables that we use with their definitions and sources (Table A6) and includes a list of the countries in our dataset with their score on CORRWB and their classification according to electoral rules and the presence or absence of a separately elected president (Table A5).

[50] Treisman, 'The Causes of Corruption'.

[51] *World Development Indicators* (Washington, D.C.: IBRD, CD-ROM, 2000).

[52] At http://www.freedomhouse.org/research/freeworld/2000/methodology.htm.

[53] The results using these data are presented in Appendix A1. The sources for these variables are as follows. *ELF*: Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Sheifer and Robert Vishny, 'The Quality of Government', *Journal of Law Economics, and Organization*, 15 (1999), 222–79; *PROT*, *BRITCOL*, *STABDEMO*: Treisman, 'The Causes of Corruption'; *OPEN*: World Bank, *World Development Indicators*.

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Econometric Methods

Each country's *CORRWB*$_i$ index has a different conditional variance, which makes our dataset heteroscedastic by definition.[54] Because standard errors are reported for each country estimate, we employ weighted least squares (WLS) to correct for this problem, using the inverse of the standard error of *CORRWB*$_i$ as analytic weights. To check the robustness of our results, we also run all our models using ordinary last squares (OLS) with White-corrected standard errors.[55]

In testing H1, we use *PLURALITY* as an excluded category and examine the coefficients on *CLPR* and *OLPR* as well as the marginal impact of introducing mixed electoral elements; significant negative coefficients on *CLPR* and *OLPR* mean that these systems lead to more corruption than *PLURALITY*. *CLPR* includes many more cases than *OLPR*. Therefore, we test whether a potentially insignificant coefficient on *OLPR* means that *OLPR* is closer to *PLURALITY* than *CLPR*, or that there are simply not enough cases to determine its effect.

Testing H2 requires employing interaction terms between electoral rules and presidentialism. However, because we are dealing with categorical variables, we simply divide our sample of countries into six mutually exclusive categories (*CLPRES, OLPRES, PLPRES, CLPARL, OLPARL* and *PLPARL*) and use plurality-parliamentary systems (*PLPARL*) as a benchmark group that should be least corrupt according to our theory.[56]

Finally, although we used WLS and OLS with robust standard errors to correct for heteroscedasticity, further regression diagnostics are warranted to identify influential observations and outlying cases. For each of our three hypotheses, we select a representative model and examine influential observations that influence the intercept (studentized residuals), regression coefficient or the model as a whole.

EMPIRICAL RESULTS

The empirical results are mostly consistent with our theoretical claims. Regression diagnostics demonstrate that the results are not unduly influenced by influential observations or outlying cases.[57]

H1: The Relationship between Electoral Rules and Corruption

Table 2 reports the results of the four models that we used to test H1. Model 1 is a benchmark regression without any institutional structure. It shows that *GDP* and *FREEDOM* alone explain 68 per cent of variation in *CORRWB* on a sample of ninety-three

[54] William H. Greene, *Econometric Analysis*, 4th edn (Upper Saddle River, N.J.: Prentice Hall, 2000), chap. 12.

[55] These results are not reported due to space limitations. They are, however, consistent with the results in the text. In addition, *CORRWB*, is bounded between -2.5 and $+2.5$. However, the index does not display any particular clustering at very low or very high values, which suggests that truncation is not a major problem and maximum likelihood methods like Tobit are not necessary. We experimented with monotonic transformations of *CORRWB*, that would allow it to vary from minus infinity to plus infinity with no change in results.

[56] Robert J. Friedrich, 'In Defense of Multiplicative Terms in Multiple Regression Equations', *American Journal of Political Science*, 26 (1982), 797–833, requires that both component terms and the resulting interaction term be included in the regression equation. However, with categorical variables, this would result in over-determination of the model. Therefore, we do not include *PRES*, *CLPR*, *OLPR* or *PLUR* in our tests of *H2*.

[57] These diagnostic tests are included in Appendix Tables A3 and A4.

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countries. Adding electoral rules, presidentialism and federalism explains an additional 8 per cent of variance. Most importantly, *CLPR*, *PRESIDENT* and *FEDERAL* all have negative coefficients significant at a 5 per cent level or better. The coefficient on *OLPR* also has the right sign, is smaller than the coefficient on *CLPR*, and is marginally significant. However, a post-estimation test reveals that we cannot distinguish it from *CLPR*. Therefore, on the basis of Model 2 we can only claim that PR systems are more corrupt than plurality. In addition, mixed systems that add some degree of 'PR-ness' to plurality are also significantly more corrupt than pure plurality systems. In fact, the coefficient is similar to that on *CLPR* suggesting that the anti-corruption benefits of plurality rule only hold in relatively pure cases. In contrast, the other type of mixed system cannot be distinguished from a full-scale PR regime.

Model 3 tests the robustness of our results, replacing our electoral rule dummies by an interval measure of individual-versus-party-centrism of the electoral system, proxied by the index of particularism (*PARTICULARISM*). We find *PARTICULARISM* to be positive and significant, which is what we expect because it is inversely related to 'PR-ness'. In comparison to our attempt to distinguish different types of systems along one basic dimension (electoral rules), the *PARTICULARISM* variable includes many more features of electoral systems that make them more party-centred. Because the aggregation method of the *PARTICULARISM* index requires many judgements that make the index difficult to interpret, we prefer our electoral dummies that provide a simple, more transparent measure of electoral structure.[58] Nevertheless, we are encouraged that an alternative effort to measure the power of political parties across electoral systems produces consistent results.

Finally, Model 4 replaced the electoral dummies with *CLSHARE*. This also proves to be a good proxy for the electoral system dummies used in Model 2. Its main drawback is the fall in the number of data points from ninety-seven to sixty-seven. Running Model 2 with the countries in Model 4 produced consistent results. Thus it appears that not much additional value is added by using *CLSHARE* instead of the dummies.

On balance, these results strongly suggest that PR, federalism and presidentialism increase corruption, holding other factors constant. What can be said about the magnitude of these effects? Model 2 allows the following numeric experiments. If we compare a country using plurality rule to one with CLPR, the World Bank corruption control index would be 0.39 higher in the former; this is about 0.41 of *CORRWB*'s standard deviation. For the sake of comparison, this is about the same effect as an increase in GDP per capita to about 49 per cent of its current level.[59] Although this hypothetical experiment needs to be taken with several grains of salt, it does suggest that the relative magnitude of the effect of electoral rules on corruption is rather large when compared to the effect of economic development. Yet the effect of electoral rules seems to be smaller than that of other institutional factors such as federalism and presidentialism.[60]

[58] The additional control variable, *C-PARTICULARISM*, measures a proportion of elected legislators considered in the *PARTICULARISM*, index. Its use is recommended by Seddon, Gaviria, Panizza and Stein, 'Political Particularism around the World'.

[59] $0.54(\log Y_1 - \log Y_0) = 0.54\log(Y_1/Y_0) = -0.39$. Then, $Y_1/Y_0 = \exp(-0.72) = 0.4868$; so $Y_1 = 0.4868 * Y_0$.

[60] We also tested H1 with an extensive set of controls. These results, reported in Appendix Table A1, explain 84–90 per cent of the variation. Our institutional dummies retain significance.

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TABLE 2 *Hypothesis 1: Electoral Rules and Corruption*

	Model 1	Model 2	Model 3	Model 4
CLPR		*** − 0.39		
		[0.14]		
OLPR		* − 0.29		
		[0.18]		
PLU-MIXED		*** − 0.44		
		[0.16]		
PR-MIXED		− 0.08		
		[0.15]		
PRESIDENT		*** − 0.33	** − 0.25	* − 0.23
		[0.12]	[0.12]	[0.14]
FEDERAL		* − 0.32	*** − 0.42	** − 0.43
		[0.17]	[0.14]	[0.16]
PARTICULARISM			**0.21	
			[0.09]	
C-PARTICULARISM			− 0.30	
			[0.26]	
CLSHARE				** − 0.31
				[0.15]
GDP	***0.59	***0.54	***0.47	***0.64
	[0.07]	[0.07]	[0.07]	[0.08]
FREEDOM	*** − 0.20	*** − 0.22	*** − 0.27	*** − 0.17
	[0.06]	[0.05]	[0.06]	[0.06]
Intercept	*** − 4.31	*** − 3.28	*** − 2.8;	*** − 4.44
	[0.72]	[0.69]	[0.77]	[0.86]
Adj. R^2	0.68	0.76	0.78	0.80
Obs.	93	93	93	67

Notes: The table shows the coefficients for each variable in the four models, with standard errors in brackets.
Dependent variable: *CORRWB*. Estimation: weighted least squares. Weights: inverse of standard errors of *CORRWB*.
Significance: *** for $p < 0.01$; ** for $0.05 > p \geq 0.01$; * for $0.10 > p \geq 0.05$ (two-tailed tests).

H2: Interaction Between Presidentialism and Electoral Rules

Table 3 reports the results obtained by interacting presidentialism with electoral rules. The most important result here is that presidentialism interacts with PR to produce a particularly corruption-prone political system. Model 1 uses *PLPARL* (that is, Westminster democracy) as a benchmark category, which we expect to be the least corrupt. The tests confirm our predictions. All five remaining categories (*CLPRES, OLPRES, PLPRES, CLPARL* and *OLPARL*) have negative signs. Only *CLPRES*, however, is statistically significant, together with *PLUMIX*, federalism and the background controls. Post-estimation tests show that all coefficients, except *OLPRES*, are different from *CLPRES*. However, the coefficients on *CLPARL* and *OLPARL* are not statistically different from each other. Therefore, in Model 2, we use all parliamentary systems as a benchmark category. Post-estimation tests once again reveal that we cannot distinguish the coefficients on *CLPRES* and *OLPRES*. *PLPRES* is different from *CLPRES* (the difference is significant at 0.01 level), but it is not significantly different from the base case. Similar to H1, the same results hold when we include a large set of controls. These results suggest that the real problem is not the voting system viewed in isolation but is, instead, the interaction between

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TABLE 3 *Hypothesis 2: Interaction Effects: Electoral Rules and Presidentialism*

	Model 1	Model 2
CLPRES	*** − 0.67	*** − 0.58
	[0.16]	[0.13]
OLPRES	− 0.26	− 0.18
	[0.36]	[0.35]
PLPRES	− 0.22	− 0.17
	[0.15]	[0.14]
CLPARL	− 0.17	
	[0.19]	
OLPARL	− 0.14	
	[0.19]	
PLUMIXED	** − 0.39	** − 0.33
	[0.15]	[0.14]
PRMIXED	− 0.12	− 0.14
	[0.15]	[0.14]
FEDERAL	* − 0.30	* − 0.30
	[0.17]	[0.17]
GDP	***0.53	***0.52
	[0.07]	[0.07]
FREEDOM	*** − 0.21	*** − 0.20
	[0.05]	[0.04]
Intercept	*** − 3.33	*** − 3.44
	[0.70]	[0.68]
Adj. R^2	0.75	0.75
Obs.	94	94

Notes: The table shows coefficients for variables in the two models, with standard errors in brackets.
Dependent variable: *CORRWB*. Estimation: weighted least squares. Weights: inverse of standard errors of *CORRWB*.
Significance: *** for $p < 0.01$; ** for $0.05 > p \geq 0.01$; * for $0.10 > p \geq 0.05$ (two-tailed tests of significance).

proportional representation and presidentialism. The voting system produces powerful party leaders who are difficult to monitor and permits corrupt interactions to occur between them and directly elected presidents in systems with weak popular and political control.

EXTENSIONS: CORRUPTION VS. PORK-BARREL SPENDING

Given our distinction between corrupt acts and pork-barrel spending, a logical extension of our analysis would be to examine public spending to see if it is influenced by the nature of the electoral system. Citizens who can monitor their politicians effectively may not only demand integrity but also insist on benefits for their local communities. Consider the way electoral rules may influence public spending. In a society with no corruption, electoral rules differ in the *incentives* they give to politicians to offer broad-based public goods or narrowly focused pork-barrel spending. An electoral system based on geographic

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representation will encourage spending targeted to particular districts at the expense of more inclusive public goods. In contrast, when the competition for votes is more broad-based, candidates and political parties will find it more electorally beneficial to run on national public goods platforms.[61]

To see the logic of this argument, consider our three stylized electoral systems: plurality, CLPR and OLPR. Electoral competition in plurality systems has a local, geographic basis. National issues such as war and peace or moral issues such as abortion may, of course, sway voters, but incumbents will also want to claim that they have 'brought home the bacon' to their constituents. Unless national political parties are very strong, incumbents are likely to make a non-partisan appeal for re-election, arguing that they have been able to obtain targeted benefits. In contrast, under CLPR, politicians have an incentive to provide broad-based public goods so long as the parties' constituencies are widely dispersed, so that it is difficult to target narrow benefits to one's supporters.[62] In OLPR systems, there are no ready-made geographical constituencies as in plurality systems, but a candidate may try to appeal to a particular group of voters by becoming their advocate within the party and later touting his or her success. Thus, we would expect that there will be more targeting in OLPR than CLPR, but less than in plurality. Furthermore, the type of targeting is likely to single out different groups. Given our argument about monitoring corrupt rent-seeking politicians, it appears that the same features of electoral systems that *constrain* such political corruption also *create incentives* for pork-barrel spending. A full picture of the connection between the incentives and the constraints that voters impose on politicians can only be gained by combining the results on corrupt rent-seeking with an analysis of the work that legislatures do in designing programmes and allocating spending.

Testing this extension is beyond the scope of this article, but there are several recent empirical studies that provide evidence consistent with our hypothesis. For example, using data from forty countries, Milessi-Feretti *et al.* find that PR systems spend predominantly on transfers to specific groups of the population (based on age, unemployment, etc.), while in plurality systems government spending concentrates on purchases of goods and services that are targeted along geographical lines.[63] Furthermore, two studies concentrate on the German Bundestag, where half of the representatives are elected on PR lists and the other half in single-member districts (SMDs) under plurality rule. Lancaster and Peterson conducted an attitudinal survey of the members of the Bundestag and found that consistently higher percentages of respondents from SMDs found the provision of projects to be of high importance to their prospects of re-election when compared with members from multimember districts.[64] Strattman and Baur looked at committee assignments in the Bundestag.[65] They classified each committee into one of three groups: 'district', 'party'

[61] See Torsten Persson and Guido Tabellini, 'The Size and Scope of Government: Comparative Politics with Rational Politicians', *European Economic Review*, 43 (1999), 699–735; Alesandro Lizzeri and Nicola Persico, 'The Provision of Public Goods Under Alternative Electoral Incentives', *American Economic Review*, 91 (2001), 225–39.

[62] The exception here is a small party with a limited constituency that hopes to gain influence by being the marginal party in a governing coalition. The religious parties in Israel are an example.

[63] Gian-Maria Milessi-Feretti, Roberto Perotti and Massimo Rostagno, 'Electoral Systems and Public Spending', *Quarterly Journal of Economics*, 117 (2002), 609–57.

[64] Thomas Lancaster and Gabriella Montinola, 'Toward a Methodology for the Comparative Study of Political Corruption', *Crime, Law, and Social Change*, 27 (1997), 185–206.

[65] Thomas Stratmann and Martin Baur, 'Plurality Rule, Proportional Representation, and the German Bundestag: How Incentives to Pork-Barrel Differ Across Electoral Systems', *American Journal of Political Science*, 46 (2002), 506–14.

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or 'neutral', based on the committee's was concerned with district-based, national or mixed issues. The authors found that the representatives from SMDs picked committees that enabled them to serve their geographic constituencies, whereas the party-list representatives were much more likely to be on the committees that dealt with the broad-based issues. In sum, although the measures used in these articles are only a rough approximation of pork-barrel spending versus universalistic benefits, their results provide a useful first cut in favour of our hypothesis that plurality systems do induce more geographically-based spending and that PR systems are more concerned with broad-based public spending.

DISCUSSION AND CONCLUSIONS

The choice of electoral rules can influence the level of political corruption. Under our theoretical framework, PR systems are more susceptible to corruption relative to plurality systems because PR leads to more severe collective action problems for voters and opposition parties in monitoring corrupt incumbents. Closed party lists weaken the link between re-election and performing well in office. We have also hypothesized the existence of interaction effects between electoral rules and presidentialism. Our empirical findings support our theoretical hypothesis that PR systems, especially in conjunction with presidentialism, are associated with higher levels of corruption. The most important route by which CLPR seems to produce high levels of corruption is through its interaction with presidentialism.

How do our findings compare to those of other scholars who have explored related questions empirically? Lijphart argues theoretically that consensus democracy (a term that subsumes PR systems) should constrain corruption, but empirically he finds consensus democracies to be *more* corrupt.[66] However, the coefficients are not significant in his bivariate regression covering thirty-six countries. Our findings, with significant coefficients in the same direction, are based on a much larger sample and include relevant controls. Thus, we reject Lijphart's hypothesis with more force than his own empirical findings. However, it may well be that 'consensus democracy' is simply an overly aggregated measure. For example, although PR systems are more consensual than plurality systems, presidential systems are less consensual than parliamentary ones. Lijphart's theory would predict that presidential systems ought to be more corrupt, which we indeed find. Finally, we show that federal or decentralized systems are more corrupt, which again goes against Lijphart's expectations.

A more recent empirical study of political institutions and corruption by Persson and Tabellini has both better country coverage and more econometric sophistication than Lijphart's work.[67] Although, like them, we find that PR systems are more corrupt, we make the opposite predictions about presidentialism. Persson and Tabellini expect presidential systems to be less corrupt due to their competitive nature and to checks and balances, but they cannot confirm this prediction empirically, except on a subset of old democracies. US-style checks and balances may indeed have a constraining effect on corruption, especially in well-established democracies, but we argue that checks and balances are not a representative, let alone fundamental, feature of presidential

[66] Lijphart, *Patterns of Democracy*.
[67] Persson and Tabellini, *The Economic Effects of Constitutions*.

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systems.[68] Once new and fragile democracies are included in the sample, presidentialism becomes a significant predictor of higher corruption levels, controlling for major economic, political and social background factors. Theoretically, we have traced this relationship back to more fundamental and prevalent characteristics of presidentialism, such as fixed terms in office and legislative bargaining patterns, and we argue that these make presidential systems structurally more susceptible to corruption.[69]

Our work further differs from Persson and Tabellini in our treatment of proportionality and mixed systems.[70] Persson and Tabellini argue theoretically that the channels through which proportionality leads to higher corruption are the percentage of representatives elected on party lists and district magnitude. Their findings suggest that the systems that constrain corruption best are those that *both* have no representatives elected on party lists and have large districts. Of course, in practice, such systems do not exist.[71] The analytical problem here is that district magnitude and the percentage of legislators elected on party lists are not independent variables but rather move together in opposite directions as the system moves from proportional to majoritarian.

Our findings about mixed systems are an aid to understanding these two contradictory tendencies. We show that adding some PR to plurality systems substantially increases corruption (*PLU-MIXED*), while adding some plurality to PR systems has no effect (*PR-MIXED*) (Table 2, Model 2). *PLU-MIXED* systems increase the proportion of politicians elected on party lists, which is bad for corruption control because, we argue, it increases the power of party leaders and raises monitoring costs. *PR-MIXED* systems lower the percentage of members elected on party lists while retaining high district magnitudes. Compared to pure plurality systems, this should be good for corruption control according to Persson and Tabellini, but it has no effect according to our results.

Clearly, from the point of view of proposing reforms, more work should be done on the causal variables to discover if any of them can be treated as separate focuses of reform in an otherwise unchanged electoral system. The results reported here are essentially reduced-form econometric results that demonstrate an association that is consistent with our underlying story. An empirical exploration of the underlying causal mechanisms is a logical next step in this line of research and should be designed to help sort out the conflicting causal stories.

We have treated electoral systems and other aspects of government structure as exogenous and studied their impact on corruption. However, in practice, electoral rules are themselves chosen by political actors who may be concerned to limit or restrict corruption. In most cases, today's corrupt individuals did not design the structure of government under which they operate. Nevertheless, one can ask whether the empirical regularities we find could have been deliberately produced by politicians who are more or less concerned with

[68] See David Samuels and Kent Eaton, 'Presidentialism And, Or, and Versus Parliamentarism: The State of the Literature and an Agenda for Future Research' (unpublished, University of Minnesota and Princeton University, 2002), for a thorough treatment of this issue.

[69] Of course, the issue of endogeneity is very complicated here, and with a cross-sectional dataset it is difficult to show whether the new and fragile democracies are more corrupt because they choose presidentialism, or whether more corrupt nations choose presidentialism because it provides further opportunities for rents.

[70] Persson and Tabellini, *The Economic Effects of Constitutions*.

[71] The closest approximation would be Japan's old system based on plurality rule in multi-member districts. Empirically, however, this was not a case where low barriers to entry into political competition constrained corruption. Electoral corruption was reportedly rampant and was one of the reasons for the change in the electoral law.

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their ability to extract rents from the state. The fact that all democracies have not converged on a single equilibrium constitutional form and set of electoral rules suggests either that the goals of political actors differ or, as is likely, that the functions served by government institutions go far beyond the control (or encouragement) of corruption. For example, although the empirical part of this article dealt with corruption, we raised the possibility that there may be a trade-off between systems that provide targeted benefits to narrow constituencies and those that foster corruption. The design of constitutional structures and electoral rules is a balancing act that has produced a wide range of solutions.

APPENDIX

Regression Diagnostics

Although we used WLS to correct for the heteroscedasticity that was bound to plague our cross-sectional dataset, further regression diagnostics are warranted to identify influential observations and outlying cases. For each of our hypotheses, we selected a representative model and examined influential observations. We used the following techniques: studentized residuals to identify observations that shift the intercept; DFBETAS to identify the observations that unduly influence the coefficient on our institutional variables; and DFFITS to identify observations that influence the model as a whole.

Hypothesis 1, Model 2. We studentized the residuals to identify the outliers among the residuals. Studentized residuals correspond to the t statistic we would obtain by including in the regression a dummy predictor coded 1 for that observation and 0 for all others; i.e., we test whether the particular observation significantly shifts the intercept. Only three countries had relatively large residuals, i.e. $|t| \geq 2$: Gabon, Sierra Leone and Singapore. Under normal conditions, we should see about 5 per cent of observations in that range; three countries constitute 3.23 per cent of our sample, which was below the norm. Dropping these three countries from Model 2 produced a highly significant intercept that is slightly smaller in magnitude.

We proceeded to the analysis of the influence of outliers on the coefficient on CLPR. We computed *DFclpr* – a variable that indicates by how many standard errors the coefficient on CLPR would change if the *i*th observation were dropped from the regression. We considered an observation influential if its $|DFpr| \geq 2/n^{1/2}$,[72] which then identifies seven countries: Turkey, Paraguay, Sierra Leone, Romania, Mozambique, Mauritius and Gabon. Dropping these observations slightly increased the magnitude and the significance of the coefficient on CLPR.

Finally, we identified the observations that have a potential to influence the set of predicted values in our model as a whole by computing DFFITS. We considered the observation influential after the cutoff point suggested by Chatterjee and Hadi:[73] $|\text{DFFITS}| \geq 2[(k+1)/(n-\text{k}-1)]^{1/2}$. This led us to remove two observations, Sierra Leone and Singapore. Running Model 2 without these observations only strengthened our results further. We concluded that outliers did not influence the model as a whole.

Hypothesis 2, Model 1. After studentizing residuals, we deleted only three observations (about 3.2 per cent of all observations), which had been the culprits in the earlier model as well: Gabon, Sierra Leone and Singapore. Since this is less than the normal threshold (5 per cent of observations), we concluded that the estimation of the intercept is not influenced by outliers.

After computing *DFclpres* we noted that there were no observations unduly influencing the coefficient on *CLPRES*, since all *DFclpres* were below the cut-off point. According to DFFITS, the model as a whole was influenced by the 'usual suspects,' Gabon, Sierra Leone and Singapore. Running the model without these observations does not change our previous results.

[72] John Fox, *Regression Diagnostics* (Newbury Park, Calif.: Sage, 1991).

[73] Samprit Chatterjee, Ali S. Hadi and Bertram Price, *Regression Analysis by Example*, 3rd edn (New York: John Wiley, 2000).

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TABLE A1 *Hypothesis 1: The Existence of the Relationship Between Electoral Rules and Corruption*

	Model 1	Model 2	Model 3	Model 4
CLPR		* − 0.20		
		[0.15]		
OLPR		− 0.06		
		[0.19]		
PLUMIX		** − 0.32		
		[0.16]		
PRMIX		0.04		
		[0.17]		
PRES		− 0.07	− 0.06	− 0.05
		[0.14]	[0.15]	[0.13]
FEDERAL		* − 0.26	* − 0.26	** − 0.43
		[0.15]	[0.17]	[0.16]
PART			**0.21	
			[0.11]	
CPART			0.19	
			[0.26]	
CLPLIST			** − 0.28	
			[0.06]	
GDPLN	***0.39	***0.39	***0.47	***0.47
	[0.10]	[0.09]	[0.10]	[0.10]
FH9301	** − 0.15	** − 0.14	** − 0.17	** − 0.18
	[0.06]	[0.06]	[0.08]	[0.07]
BRITCOL	0.14	0.07	0.15	0.14
	[0.13]	[0.13]	[0.15]	[0.14]
PROT	**0.005	*0.003	*0.004	**0.005
	[0.002]	[0.002]	[0.002]	[0.002]
ETHNO	0.003	− 0.002	0.003	− 0.001
	[0.002]	[0.002]	[0.001]	[0.002]
STABDEMO	0.21	*0.31	0.25	0.25
	[0.16]	[0.16]	[0.17]	[0.17]
OPEN	***0.005	***0.005	**0.01	***0.01
	[0.001]	[0.001]	[0.003]	[0.001]
AFRICA	0.19	0.01		
	[0.21]	[0.22]		
LAAM	** − 0.37	** − 0.36		
	[0.16]	[0.17]		
OECD	0.25	*0.31		
	[0.17]	[0.19]		
ASIAE	0.32	0.15		
	[0.20]	[0.24]		
Intercept	*** − 2.84	*** − 2.77	*** − 3.98	*** − 3.44
	[0.96]	[0.93]	[1.12]	[1.03]
Adj. R^2	0.87	0.90	0.84	0.86
Obs.	56	55	54	54

Notes: The table shows the coefficients and standard errors (in brackets) of the variables used in each model.
Dependent variable: *CORRWB*. Estimation: weighted least squares. Weights: inverse of standard errors of *CORRWB*.
Significance: *** for $p < 0.01$; ** for $0.05 > p \geq 0.01$; * for $0.10 > p \geq 0.05$; p reported for two-tailed tests of significance.

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TABLE A2 *Hypothesis 2: Interaction Effects: Electoral Rules and Presidentialism*

	Model 1	Model 2
CLPRES	** − 0.43	*** − 0.48
	[0.17]	[0.13]
OLPRES	0.05	0.001
	[0.29]	[0.27]
PLPRES	0.10	0.07
	[0.14]	[0.13]
CLPARL	0.10	
	[0.20]	
OLPARL	0.09	
	[0.22]	
PLUMIX	* − 0.26	** − 0.29
	[0.15]	[0.13]
PRMIX	0.05	0.07
	[0.16]	[0.15]
FEDERAL	− 0.21	− 0.21
	[0.15]	[0.15]
GDPLN	***0.47	***0.47
	[0.08]	[0.08]
FH9301	** − 0.15	** − 0.15
	[0.06]	[0.06]
BRITCOL	0.19	0.16
	[0.14]	[0.12]
PROT	0.003	0.002
	[0.002]	[0.002]
ETHNO	0.00	0.001
	[0.00]	[0.002]
STABDEMO	***0.43	***0.44
	[0.15]	[0.15]
OPEN	***0.004	***0.004
	[0.001]	[0.001]
Intercept	*** − 3.68	*** − 3.55
	[0.90]	[0.84]
Adj. R^2	0.90	0.90
Obs.	56	56

Notes: The table shows the coefficients and standard errors (in brackets) of the variables used in Models 1 and 2.
Dependent variable: *CORRWB*. Estimation: weighted least squares. Weights: inverse of standard errors of *CORRWB*.
Significance: ***for $p < 0.01$; **for $0.05 > p \geq 0.01$; *for $0.10 > p \geq 0.05$ (two-tailed tests of significance).

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TABLE A3 *Regression Diagnostics: Dropping Influential Observations in Model 2 (H1)*

	STUDENT	DFclpr	*DFFITS*
CLPR	*** − 0.43	*** − 0.46	*** − 0.41
	[0.13]	[0.14]	[0.13]
OLPR	* − 0.30	** − 0.39	* − 0.29
	[0.16]	[0.17]	[0.17]
PLUMIX	*** − 0.45	*** − 0.52	*** − 0.42
	[0.14]	[0.14]	[0.15]
PRMIX	− 0.07	− 0.08	− 0.07
	[0.14]	[0.14]	[0.14]
PRES	** − 0.26	*** − 0.35	** − 0.29
	[0.11]	[0.12]	[0.11]
FEDERAL	* − 0.29	** − 0.35	* − 0.27
	[0.16]	[0.16]	[0.16]
GDPLN	***0.50	***0.58	***0.48
	[0.07]	[0.06]	[0.07]
FH9301	*** − 0.27	*** − 0.21	*** − 0.29
	[0.05]	[0.05]	[0.05]
Intercept	*** − 2.91	*** − 3.57	*** − 2.65
	[0.70]	[0.65]	[0.70]
Adj. R^2	0.79	0.80	0.78
Obs.	90	86	91

Notes: The table shows the coefficients used in Model 2 (H1) when certain influential observations are dropped, using weighted least squares.
Significance: ***for $p < 0.01$; **for $0.05 > p \geq 0.01$; *for $0.10 > p \geq 0.05$ (two-tailed tests of significance).

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TABLE A4 *Regression Diagnostics: Dropping Influential Observations in Model 1 (H2)*

	Dropping large STUDENT	Dropping large DFFITS
CLPRES	*** − 0.64	*** − 0.64
	[0.15]	[0.15]
OLPRES	− 0.16	− 0.16
	[0.33]	[0.33]
PLPRES	− 0.09	− 0.09
	[0.14]	[0.14]
CLPARL	− 0.13	− 0.13
	[0.17]	[0.17]
OLPARL	− 0.12	− 0.12
	[0.18]	[0.18]
PLUMIX	*** − 0.39	*** − 0.39
	[0.13]	[0.13]
PRMIX	− 0.11	− 0.11
	[0.13]	[0.13]
FEDERAL	* − 0.26	* − 0.26
	[0.16]	[0.16]
GDPLN	***0.49	***0.49
	[0.07]	[0.07]
FH9301	*** − 0.26	*** − 0.26
	[0.05]	[0.05]
Intercept	*** − 2.90	*** − 2.90
	[0.70]	[0.70]
R^2	0.79	0.79
Obs.	91	91

Notes: The table shows the coefficients used in Model 1 (H2) when certain influential observations are dropped, using weighted least squares.
Significance: ***for $p < 0.01$; **for $0.05 > p \geq 0.01$; *for $0.10 > p \geq 0.05$ (two-tailed tests of significance).

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TABLE A5 *Ranking of Countries by CORRWB*

Rank	Country	*CORRWB*	*CLPR*	*OLPR*	Plur.	President
97	Albania	−0.9851	0	0	1	0
61	Argentina	−0.2745	1	0	0	1
86	Armenia	−0.8032	0	0	1	1
15	Australia	1.6011	0	0	1	0
17	Austria	1.4571	1	0	0	0
63	Bangladesh	−0.2891	0	0	1	0
29	Belgium	0.6717	1	0	0	0
85	Benin	−0.7808	1	0	0	1
69	Bolivia	−0.4379	1	0	0	1
35	Botswana	0.5352	0	0	1	0
46	Brazil	0.0576	0	1	0	1
79	Bulgaria	−0.5572	1	0	0	1
6	Canada	2.0555	0	0	1	0
23	Chile	1.0292	0	0	1	1
75	Colombia	−0.4903	1	0	0	1
34	Costa Rica	0.5769	1	0	0	1
71	Croatia	−0.4641	1	0	0	1
10	Cyprus	1.8113	0	1	0	1
39	Czech Rep.	0.3840	0	1	0	0
1	Denmark	2.1290	0	1	0	0
84	Dominican Rep.	−0.7729	1	0	0	1
87	Ecuador	−0.8192	1	0	0	1
68	El Salvador	−0.3536	1	0	0	1
33	Estonia	0.5930	0	1	0	0
26	Fiji	0.8067	0	0	1	0
3	Finland	2.0846	0	1	0	0
19	France	1.2824	0	0	1	0
98	Gabon	−1.0151	0	0	1	1
14	Germany	1.6203	1	0	0	0
64	Ghana	−0.3015	0	0	1	1
25	Greece	0.8248	0	1	0	0
88	Guatemala	−0.8194	0	0	1	1
49	Guyana	−0.0187	1	0	0	1
77	Haiti	−0.5347	0	0	1	1
95	Honduras	−0.9381	1	0	0	1
32	Hungary	0.6141	0	1	0	0
9	Iceland	1.8306	1	0	0	0
65	India	−0.3058	0	0	1	0
16	Ireland	1.5673	0	1	0	0
20	Israel	1.2767	1	0	0	1
27	Italy	0.8023	0	0	1	0
52	Jamaica	−0.1162	0	0	1	0
28	Japan	0.7236	0	0	1	0
44	Jordan	0.1390	0	0	1	1
92	Kazakhstan	−0.8687	0	0	1	1
31	Kuwait	0.6190	0	0	1	1
60	Latvia	−0.2636	0	1	0	0
43	Lesotho	0.1876	0	0	1	0
47	Lithuania	0.0341	0	0	1	1
13	Luxembourg	1.6713	0	1	0	0
76	Macedonia	−0.5171	0	0	1	1
73	Madagascar	−0.4693	0	0	1	1
56	Malawi	−0.1945	0	0	1	1

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TABLE A5 *Continued*

Rank	Country	*CORRWB*	*CLPR*	*OLPR*	Plur.	President
30	Malaysia	0.6334	0	0	1	0
74	Mali	−0.4759	0	0	1	1
36	Malta	0.4974	0	1	0	0
41	Mauritius	0.3364	0	0	1	0
62	Mexico	−0.2771	0	0	1	1
54	Mongolia	−0.1452	0	0	1	1
45	Morocco	0.1252	0	0	1	1
78	Mozambique	−0.5349	1	0	0	1
40	Namibia	0.3819	1	0	0	1
7	Netherlands	2.0264	1	0	0	0
4	New Zealand	2.0749	0	0	1	0
89	Nicaragua	−0.8361	1	0	0	1
99	Niger	−1.5668	0	0	1	1
12	Norway	1.6865	1	0	0	0
83	Pakistan	−0.7688	0	0	1	0
90	Papua N.G.	−0.8537	0	0	1	0
96	Paraguay	−0.9584	1	0	0	1
57	Peru	−0.1995	1	0	0	1
58	Philippines	−0.2281	0	0	1	1
37	Poland	0.4919	1	0	0	1
21	Portugal	1.2179	1	0	0	0
70	Romania	−0.4570	1	0	0	0
50	Sierra Leone	−0.0187	1	0	0	1
8	Singapore	1.9475	0	0	1	0
48	Slovak Rep.	0.0300	0	1	0	0
24	Slovenia	1.0228	0	1	0	0
42	South Africa	0.2989	1	0	0	1
22	Spain	1.2140	1	0	0	0
53	Sri Lanka	−0.1239	0	1	0	1
51	Suriname	−0.0187	1	0	0	0
2	Sweden	2.0853	1	0	0	0
5	Switzerland	2.0717	0	1	0	0
94	Tanzania	−0.9239	0	0	1	1
55	Thailand	−0.1648	0	0	1	0
59	Togo	−0.2421	0	0	1	0
67	Turkey	−0.3489	1	0	0	0
72	Uganda	−0.4659	0	0	1	1
11	United Kingdom	1.7065	0	0	1	0
18	United States	1.4068	0	0	1	1
38	Uruguay	0.4296	1	0	0	1
82	Venezuela	−0.7249	1	0	0	1
91	Yemen	−0.8537	0	0	1	1
80	Zambia	−0.6143	0	0	1	1
66	Zimbabwe	−0.3187	0	0	1	0

Note: Only countries with Freedom House score >5.5 included. Electoral rules reported in exclusive categories; if mixed system, the rule that elects the majority in the lower house is reported. Ukraine and Russia are excluded from the dataset because they each have exactly half of their lower house elected by plurality rule and half by CLPR. *CORRWB* has a possible range from -2.5 to $+2.5$ with $+2.5$ representing zero corruption. The 'rank' column shows the country's rank on *CORRWB* for the entire dataset including Ukraine and Russia which rank 93 and 81 respectively.

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TABLE A6 *List of Variables and Sources*

Variable	Source	Description
AFRICA		Dummy for Africa
ASIAE		Dummy for East Asia
BRITCOL	Treisman	British colonial heritage
CLSHARE	DPI	Percentage of representatives elected on closed-party lists in systems with CLPR = 1, equal to 0 otherwise
CLPR	DPI	Closed list PR systems
CORRWB	WB	Control of corruption (from −2.5 for most corrupt to +2.5 for least corrupt)
CPART	SGPS	Control variable for PART (proportion of legislators considered in index)
ETHNO	Treisman	Ethnolinguistic fractionalization
FEDERAL	DPI	Federalism
FH9301	FH	Average of Freedom House scores for 1993–2001
GDPLN	WB/WDI	Log of GDP per capita, PPP adjusted (average 1993–97)
LAAM		Dummy for Latin America
OECD		Dummy for OECD countries
OLPR	DPI	Open-list PR systems
OPEN	Treisman	Openness to trade (sum of exports and imports as % of GDP)
PART	SGPS	Particularism index (lower values are for less particularistic/party-centrist; higher values for more particularistic/individual-centrist systems)
PLUMIX	DPI	Plurality with some PR
PLUR	DPI	Plurality rule
POSTCOM		Dummy for post-communist countries
PR	DPI	Proportional representation
PRMIX	DPI	PR system with some plurality elements
PRES	DPI	Presidentialism
PROT	Treisman	% Protestant
STABDEMO	Treisman	Dummy that takes value 1 if the country has been a stable democracy for the last 50 years; 0 otherwise.

DPI: Authors' calculations from data in 'Database of Political Institutions 2a' in Thorsten Beck, George Clarke, Alberto Groff, Philip Keefer and Patrick Walsh, 'New Tools and New Tests in Comparative Political Economy: The Database of Political Institutions', *World Bank Economic Review*, 15 (2001), 165–76.
FH: *Freedom House* index of civil and political liberties; from www.freedomhouse.org.
SGPS: Jessica Seddon, Alessandro Gaviria, Ugo Panizza and Ernesto Stein, 'Political Particularism Around the World', *World Bank Economic Review*, 17 (2003), 133–43.
Treisman: Daniel Treisman, 'The Causes of Corruption: A Cross-National Study', *Journal of Public Economics*, 76 (2000), 394–457.
WB/WDI: *World Development Indicators*, from World Bank CD ROM 2000.

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