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Party System, Electoral Systems and Constraints on Corruption

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Abstract:

This article explores the relationship between the party system, electoral formula and corruption. Previous research has focused on the various incentives for political actors to monitor, or engage in corruption based on variations in the electoral formula. However, the electoral formal has mainly served as a proxy for the party system – whether multiparty or two-party. In this analysis, I test directly the relationship between party systems and corruption and in addition, add a degree of nuance to the established line of thinking within this literature. I argue that two-party systems in countries with predominantly single-member district (SMD) electoral formulas will demonstrate lower corruption on average than multiparty systems in SMD countries. However, I argue that this effect does not play out in countries with proportional representation (PR). I test this hypothesis on 70 democratic and semi-democratic countries from 1987-2006 and find strong empirical support for the claim that multipartism in SMD countries is associated with higher levels of corruption, while the party system's relationship with corruption plays no role in PR countries.

Key Words: party systems, corruption, electoral formula, proportional representation, single member districts

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INTRODUCTION

During the past decade, much scholarly attention has been devoted to understanding the determinants and consequences of corruption. While admittedly somewhat problematic to operationalize, corruption, defined as “the abuse of government authority for private benefit” (Tanzi 1998: 564) has been consistently demonstrated in the literature to have a negative impact on a country’s economic growth, efficiency, ability to obtain revenues, and overall trust among citizens in the society (Mauro 1995 and 1998; Kaufmann et al 2007; Rothstein and Stolle 2009). The importance of understanding this critical concept thus has major practical and theoretical implications for a country’s growth and development.

In democratic states, elections serve as a critical component to ensure that corrupt behaviour will be held accountable. That a country’s electoral rules and constitutional structure have significant impact on levels of corruption has been established empirically by a number of recent studies. Some scholars have analyzed the differences between plurality-majority (PM) and proportional representation (PR) (Persson et al 2003; Kunicova and Rose-Ackerman 2005; Rose-Ackerman 2005; Birch 2007) or differences between closed and open-list proportional systems (Chang and Golden 2006). In this analysis, I argue that the electoral system has a more nuanced impact on corruption than compared with previous studies. I build on the existing literature by demonstrating that the electoral system – broadly, whether single member district (SMD) or PR - impacts corruption in a conditional way. More specifically, the electoral formula creates different incentives for opposition parties to monitor, politicize and/or make a campaign issue out of corruption by incumbents, depending on the party system (multiparty or two-party).

Countries vary with respect to the number of parliamentary parties, and both SMD and PR systems can lead to two-party dominant as well as multi-party systems, with of course PR leading to a greater number of the latter (Duverger 1972). However, I posit that the impact of the number of parties on corruption is conditioned by the electoral formula – whether SMD or PR. I argue theoretically and demonstrate empirically that multipartism leads to more corruption in SMD countries, yet not in PR states.

While the literature on electoral systems and corruption has generally tended to focus on only the electoral rules themselves, it has surprisingly ignored the impact of the make-up of the key actors within such systems, or in other words, how the party system affects corruption. What is demonstrated in this study is that the ‘winner take all’ aspect of an SMD system produces much different incentives for incumbents and the opposition in multi-party systems, when there are two or more viable candidates seeking to oust the incumbent, than in PR systems, where multiple winners come out of each district.

As Susan Rose-Ackerman (2005) points out, in SMD systems where an opposition party has a credible chance of winning a seat in the next election, such an occurrence is sufficient to rein in the incumbent’s misconduct. The ‘winner take-all’ element of single member districts creates a competitive environment, such that the challenger’s gains equate to the incumbent’s losses. The incentive for the opposition to monitor incumbent behaviour is thus greater in SMD systems because the electoral gains will not be potentially diffused among multiple parties, as might be the case in PR systems (Rose-Ackerman 2005). The implication is thus that two party systems should be better at reigning in corruption. Yet not all SMD countries are two-party systems, and what of the effects of multipartism within this group of countries? The literature mainly relies on

electoral formulas as proxies to test this hypothesis (see Rose Ackerman 2005; Persson, Tabellini and Trebbi 2003), rather than the party system itself. A key implication from the literature is thus directly tested in this study. The main proposition of this analysis is that in SMD countries with multi-party systems - most often, but not exclusively found in run-off systems – are more corrupt on average than two-party dominant systems in SMD countries. Yet this relationship between the party system and corruption does not hold in PR countries, meaning the electoral formula modifies the impact of the party system on corruption. In investigating this claim, I employ the widely used Political Risk Service's (PRS), *'International Country Risk Guide'* (ICRG) measure of corruption and test the hypothesis on 70 democratic and semi-democratic¹ countries from 1987 to 2006. I find strong and robust support for the claim that the impact of party systems on corruption is significantly conditioned by the electoral formal, controlling for a number of additional factors, with the key finding being that multipartism has a strong and negative impact on corruption in SMD countries while the party system plays no role in PR countries.

The remainder of this analysis is designed as follows. First, the main findings in the literature on electoral systems and corruption are briefly summarized. Next, building on this existing literature, I add the element of party systems to the equation and elucidate the theoretical underpinnings of the hypothesis. In the following section, the data and research design are presented. The subsequent section presents the empirical findings of the analysis. The final section makes several concluding remarks about the theory and empirical findings.

THE EFFECT OF ELECTORAL SYSTEMS ON CORRUPTION

¹ All countries that receive a score of '5' or lower in the Freedom House data are used in the sample.

Theories on the impact of electoral systems on corruption view the relationship between politicians and voters through a classic *principle agent model* (see Kunikova and Rose Ackerman 2005). In democratic systems, politicians, serving as agents, are voted into office by the electorate, which serves as the principle. The preference of the agents is to stay in power, while the voters – along with electing politicians of ideological similarity - prefer a certain degree of competence and integrity from their representatives. However, given the control over various resources and the level of asymmetric information in this principle-agent relationship, politicians have opportunities to extract rents, either for their own personal prosperity or to pay for costly campaigns. On average, it is assumed here that, if exposed, a corrupt politician is less likely to win an election than a politician that is perceived to be clean. Politicians thus face a trade-off between the gains that rent-seeking can bring in terms of their political war chest, and appearing incorrupt and honest to their constituents (Persson, Tabellini and Trebbi 2003). In terms of opportunities for rent-seeking, we would expect that *incumbent* politicians have more access to those willing to pay bribes in exchange for permits, licences, avoiding punishments or simply jumping ahead of a queue (Birch 2007: 1536). Therefore corruption is most likely to occur when an incumbent is relatively certain that her rent-seeking will go undetected.

Scholars have looked broadly at differences in three institutions regarding a country's electoral system, the electoral formula, district magnitude and the electoral threshold. Relevant to this article is the electoral formula and the first theoretical article to link electoral systems to corruption was Myerson (1993), in which he elucidates that a PR system, on average, should produce less corruption than FPTP or majoritarian systems

because among many reasons, it is more likely to produce a multiparty system. However, several recent comparative studies have maintained that PR systems produce *more* incentives for corruption than SMD systems (Persson et al 2003; Kunikova and Rose-Ackerman 2005; Rose-Ackerman 2007), because of the more competitive ‘winner take-all’ aspects of the SMD system which simultaneously constrain incumbents while also giving voters a clear alternative when malfeasance by sitting politicians are exposed because of the expected two-party system produced in SMD countries (Duverger 1972).

As regards to the detection of corrupt behaviour, Kunikova and Rose-Ackerman (2005) argue, “Electoral rules affect the probability of detection by shaping the incentives and ability of political actors to monitor corrupt political rent-seeking” (ibid: 579). According to the literature, the electoral rules of a system impact two aspects of rent-seeking – 1) the *opportunities* for such behaviour, and 2) the incentives for competing parties to *monitor* (and expose) corrupt incumbents. Among such reasons as to why the electoral formula has an impact on the incentives for opportunities and monitoring are the nature of competition in the party system and the clarity of the alternative and thus the gains for opposition parties when making a strong political issue of incumbent malfeasance. It is argued essentially that SMD countries provide highly competitive elections which offer voters a clear choice, often between two dominant parties, while PR tends to offer more party choices. The highly competitive atmosphere of the two party systems thus reins in incumbents and all but guarantees the opposition party parliamentary gains if they effectively inform voters of corrupt incumbent behaviour. In PR systems with multiple parties such gains for opposition parties are unclear and moreover, several scholars maintain that the choices for voters are less clear as well in

countries using this electoral formula, thus higher levels of corruption are expected (Persson and Tabellini 2003; Rose Ackerman 2007).

Many of the central claims from this relatively new literature thus implicitly focus on the number of viable parties rather than the electoral formula itself, using the latter as a proxy variable for the former. In the next section, I address party systems specifically (whether two-party or multiparty) and how the strategic incentives for monitoring and campaigning on corruption depend on the number of parties, however, I argue that such incentives are conditioned by the electoral formula.

THEORY AND HYPOTHESIS

It is quite clear from the recent empirical and theoretical literature on the impact of electoral systems on corruption that the party system, or in other words the ‘number of effective parliamentary parties’, is at the heart of the issue rather than the electoral rules themselves. However, this central part of the theory has surprisingly gone untested. In this section I elucidate why the party system plays a major role in impacting levels of corruption, yet explain why this variable is conditioned by the electoral formula – whether a majority of seats are won by PR or SMD.

I begin with two assumptions. First, monitoring an incumbent’s behaviour and informing the public about malfeasance is costly for all opposition parties. Second, based on the finding of many empirical studies in the field of political behaviour, I assume that most voters would prefer candidates who are more or less honest to those that are corrupt, all things being equal (see Peters and Welsh 1980; Fackler and Lin 1995). I argue that it is the difference in the electoral formula that impacts the incentives for opposition parties to *monitor* corrupt incumbent politicians and for voters to sufficiently penalize corrupt

incumbents. By *monitor*, I mean that challengers can lead their own investigations, take the information of other actors (citizen complaints, firms, etc.) and use such information to expose and bring to the forefront charges or potential wrongdoings on the part of the incumbents.

The parties in opposition have a trade-off between using limited resources on investigating/campaigning on incumbent behaviour, or informing voters of their own political agenda. Further, they could find themselves ‘in the mud’ so to speak, by setting into effect a game of ‘tit for tat’ and thus face retaliation themselves by the accused party in future elections. Based on these trade-offs, a critical claim made by several studies has been to point out that *the number of effective parties in a political system is inversely related to incentives for monitoring incumbents* (Persson et al 2003; Rose-Ackerman 2007). Yet while this is a logical claim within SMD countries it is rather unclear as to why this would be the case in PR countries. Therefore, what is overlooked by this statement and other implicit ideas about the impact of the party system on corruption is how the party system is conditioned by the electoral formula. Moreover, this claim has yet to be tested directly.

Party Systems in SMD Countries

There are several reasons as to why SMD countries that are dominated by two-parties might have lower corruption than multi-party SMD systems on average, yet broadly, they fit into one of two camps. The first deals with the incentives/ rewards for challengers to uncover/ publicize a scandal. The second is the ability of the voters to punish the rent-seeking incumbent in favour of the ‘cleaner’ challenger. Of course a free and

independent media is an additional and effective source of monitoring incumbents, but the concern here is how the electoral rules affect the monitoring incentives of the opposition and voters at the margins².

SMD countries dominated by two strong political parties are expected to have lower corruption on average than multiparty SMD countries for a number of reasons. First, if a rival opposition politician in a two-party system uncovers, or draws greater attention to, some type of corrupt action on the part of the incumbent, the electoral benefits would most likely transfer directly to her party (Rose Ackerman 2007). Because of the limited party options, voters have a clear alternative to the corrupt incumbent, and the opposition candidate challenging the corrupt incumbent would thus stand a better chance of winning a seat. Conversely, in multi-party systems, the uncertainty of where the electoral benefits would go is greater. Expending the resources and time necessary in either uncovering incumbent corruption or taking information on the incumbent's malfeasance from elsewhere - such as accusations from citizens, firms or media - and then informing the public might not even benefit the party or challenger candidate that uncovers the malfeasance, or spends resources trying to inform the public about it (Rose-Ackerman 2007). Since multiple rival parties are competing, the benefits could plausibly be distributed equally among all opposition parties, and possibly giving none of the opposition parties enough votes to defeat the incumbent. In two-party systems however, the challenger party has stronger incentives to uncover and/or bring to bear malfeasance by the governing party.

² The media and other actors outside the principle actors in a party system are not of primary concern in the theory, yet the strength of the press freedom in each of the countries in the sample is controlled for in the empirical section of the analysis.

Second, and following from the first point, a collective action problem, due to the uncertainty of which opposition candidate or party would benefit from exposing the incumbent, is thus present in systems with three or more viable parties. Parties have much less incentive to expend their own resources on corruption detection knowing that the fruits of their labour could be reaped by other parties. Theoretically in a three party system, if party 'B' expends valuable resources investigating, or bringing attention to, a corrupt incumbent politician from party 'A', the mere fact that party 'C' could gain electorally from 'A's losses without spending any resources to expose the incumbent serves as a deterrent for party 'B' to monitor such actions. There is also a chance that party 'B' could get 'dragged into the mud' so to speak, while 'C', could look like the most honest alternative to the accused, corrupt incumbent. In a more concrete example in an SMD country, the French national election of 2002 serves this point well. In the first round 15 rival candidates ran against Jacques Chirac, the sitting incumbent, yet none of them had the incentive to draw particular attention to the corruption claims against the sitting president because the gains of exposing such events were not certain to go to any particular candidate (Rose-Ackerman 2007: 54). Whereas an opposition party would surely be interested in exposing the incumbent's malfeasance in the second round of voting in a majoritarian system for example, by that time it could be too late to get such a message out to the voters. This collective action problem has been pointed out when comparing PR to SMD systems (Persson et al 2003), essentially because PR serves as a proxy for multi-party systems, yet I directly test this idea empirically rather than relying on the electoral formula as a proxy for the party system.

Third, there is a feedback mechanism to the issue of opposition monitoring as regards to the strategy of the incumbent. The politician holding the seat desired by the opposition candidate in a two-party system knows it is a zero-sum contest and this keeps her in check. Incumbents in this type of system are thus expected to be more constrained and know that if exposed for personal rent-seeking, the consequences of such public action will most likely mean losing to the rival party and they will not receive much help from any third party candidate to split the opposition vote. In the multi-party system, the incumbent is aware that there are most likely multiple rivals in the next election to possibly distract voters from her misbehaviour.

Finally, in multi-party systems, the likelihood of serving in a coalition with another competing party is greater than in two-party system. Drawing attention to an incumbent's malfeasant behaviour can be a costly strategy for a challenger because it will most likely sever possibilities for cooperation in the future and provoke retaliation. The prospects of such future cooperation may deter opposition parties from necessary monitoring and exposure of incumbent misbehaviour relative to stronger two-party systems, where the chief rival party knows that there is virtually no chance of a coalition government with the sitting party in power. Based on these reasons, I test the following hypothesis:

H1: Within SMD countries, corruption is expected to be relatively higher in systems with a multiparty system.

Party systems in PR states

I presented four possible reasons as to why SMD countries with two dominant parties will on average lead to lower levels of corruption than countries with multiple

parliamentary parties. However, the logic is based on the fact that only one winner will come out of each district, thus creating a 'zero-sum'-type situation between the two main parties. In PR systems this is of course not the case. Whereas the collective action problem still might persist among the multiple parliamentary parties in the PR countries, in that opposition party 'A' might simply allow opposition party 'B' to expend its resources campaigning/ monitoring the incumbent party if corruption occurs, party 'B' does not share the same fear of a third (or fourth, fifth, etc.) party will win the only seat, as is the case in PR countries. If the incumbent is defeated in the SMD system, only one opposition party can take the seat, however, a smaller party can increase its share in a certain district from 10% to 20% if it runs a successful anti-corruption campaign against the sitting party in power, increasing its seats more or less proportionally to its vote share. In this context, multiple opposition parties in PR system do not share the same risks of losing the political benefits of monitoring/campaigning on incumbent corruption as they do in SMD systems. Therefore it is quite unclear as to why the logic of multipartism, as argued by Persson and Tabellini (2003) would apply to PR countries.

In addition, in multiple party PR systems, insurgent parties making corruption of incumbents or the system itself their central platform have a much better chance of reaping the benefits of such a campaign strategy in terms of winning parliamentary seats than they would in SMD systems, for example, Law and Justice party in Poland in 2005 and National Movement Simon II in Bulgaria in 2001 (Bågenholm 2009). The lack of a 'zero-sum' game creates better monitoring and conditions for multiple opposition parties – established or insurgent – in PR than in SMD systems. However, the collective action problems of coordinating around corruption as a central issue of a campaign for

opposition parties along with the fact that that coalitions are much more likely in PR systems, might reduce the likelihood that a small or medium opposition party will try to accuse an incumbent government party of corruption because this would reduce the likelihood of governing with such party in the future. Therefore, as opposed to a clear hypothesis derived in SMD countries in the previous section, I argue that there is no clear relationship between party systems and corruption in PR states; however there is of course the opportunity to build on the theoretical relationship between these variables in PR countries in further research. Figure 1 summarizes this section by demonstrating the expected empirical relationship between the party system and corruption depending on the electoral formula as elucidated in this section. In sum, a multiparty system is expected to be associated with higher levels of corruption in SMD countries, while the number of parties in a PR system – whether two or three-plus – is not expected to have any impact on levels of corruption³.

****Figure 1 about here****

SAMPLE, DATA AND METHODS

The analysis employs a sample of only democratic and semi-democratic countries, which includes all available state-years that are coded as free or semi-free according to the ‘Political Rights’ democracy measure provided by Freedom House⁴. The decision to exclude non-democracies stems from the fact that the theory underlying H1 depends on a relatively competitive political system, in which the opposition candidate has a chance of

³ Figure 1 is for simplification purposes to demonstrate the interaction effect between the party system and the electoral formula. While the figure implies that two party systems in SMD countries are the ‘lowest’ in terms of corruption and that multiparty systems in SMD countries are the ‘most corrupt’, the theory itself does not imply this – only that the number of parties only has an impact on corruption in countries with and SMD electoral formula and not PR.

⁴ <http://www.freedomhouse.org/>

winning a seat in parliament. If there is a complete lack of legitimate competition in the political system, then the theory does not apply. Moreover, I include both SMD and PR states in the analysis instead of only SMD countries. This is of course to test the predicted interaction effect between the electoral formula and the party system – e.g. if the party system (multi or two-party) has the same impact on corruption irrespective to the electoral formula, then H1 would be rejected.

The Dependent Variable

Unfortunately, within the comparative, quantitative literature on corruption, there is no perfect indicator to capture this concept. In particular, trying to measure corruption in the public sector across space and time is particularly difficult due to its clandestine nature and difficulty to observe. Two approaches have been taken in the recent literature. One approach is to use a ‘hard measure’, employing indicators such as conviction rates or reports of corruption cases (Alt and Lassen 2003; Goel and Nelson 1998). The second and much more common approach uses perception indicators to measure corruption. There are several advantages of the perception measures relative to the so called ‘hard measures’. First the ‘hard measure’ might be a better test of a country’s legal system or in fact its ability to detect corruption in the media – not actual corruption - if used in a cross-section. Thus these types of measure could lead to biased results. Second, the perception-based measures, which are either built on surveys or based on the risk-assessments of country experts, are much more widely available and thus attractive to scholars seeking to maximize the number of countries in their analyses. Finally, as Kaufman et al (2007:3) argue “perceptions matter because agents base their actions on their perceptions, impression, and views”, thus if citizens believe their public services are

inefficient or corruption, they are less likely to use their services, likewise with foreign firms and investment in countries perceived to be plagued with problems of rent-seeking and public sector mismanagement. Of course, in the end we are left with an imperfect estimate and therefore the results should be observed and interpreted with a certain degree of caution.

In recent decades, several empirical corruption indicators have emerged. Yet no two data sources measuring this concept do so in exactly the same way, thus there are always trade-offs based on which data one employs. The selection of the data in this study is based on the following criteria: 1) The time frame of availability and country coverage - variation of the key independent variables (number of parties, electoral system reform) is also taken into consideration thus the more available years, the more useful the data. 2) The precision and reliability with which the researchers that provide the data can define and measure the desired concept and 3) how accepted the measures are in the contemporary academic literature, and the frequency of publication in top journals⁵. Based on these criteria, I employ a standard measures of *CORRUPTION*, from the *International Country Risk Guide* (ICRG), published by the PRS Group⁶. These data have been widely used by scholars of political science and economics and published in top journals in both disciplines (see for example Knack & Keefer 1995; Keefer 2007; Adsera, Boix & Payne 2003; Persson, Tabellini & Trebbi 2003).

⁵ Due to space constraints, the following is admittedly a limited discussion of the pros and cons of the data sources to be employed in the analysis, for a more thorough discussion of debates on such sources of QoG, see Knack (2007) and Pellegrini & Gerlagh (2008).

⁶ While the spatial coverage is not quite as wide as the World Bank Governance Indicators (WGI - Kaufmann et al 2007), the ICRG data on corruption (for purchase only) dates back from 1987, giving much better temporal coverage than the WGI or Transparency International's Corruption Perceptions Index (CPI). However, the ICRG measure correlates at 0.90 with the CPI and 0.91 with the WGI.

The advantages to the ICRG data are that the time frame and country coverage are the most comprehensive of all available indicators. The precision with which the researchers can define and measure the desired concept is potentially higher due to the rankings being decided upon by a small number of country experts who base scoring decisions on similar criteria annually. This implies greater internal consistency which in turn implies that comparisons over time may be more reliable than surveys or composite indices. For example, the World Bank Governance Indicators (Kaufmann, Kraay and Mastruzzi 2009) is standardized each year (world mean of '0') and thus adding or subtracting countries and/or questions from year to year can alter a country's score regardless of whether it actually improved or worsened, which is not the case for the ICRG data. The disadvantages of the ICRG measure include that such a measure is of course similar to that of all expert assessment measures, such as Freedom House, in that they are less transparent in their construction, which means the researcher might be expecting to capture something significantly different than what the organization is actually measuring, potentially leading to bias in the results. Finally, the data is aimed at mainly international investors seeking to profit in potentially new countries, not academics, which could imply that QoG is more geared toward less 'red tape' and business friendly environments, not necessarily providing quality government to its citizens⁷.

Key Explanatory Variables

Information on electoral systems (*ELECTORAL SYSTEM*) here are coded from multiple sources to maximize the sample size, including Golder (2005), *IDEA* (Reynolds

⁷ However, we are doubtful that this is the case, as Kaufmann et al (2007) show that there are insignificant differences in household perceptions compared with those of expert opinions catering to businesses.

et al 2005-6), the *ACE Project* and *Inter-Parliamentary Union Online*. For the sake of parsimony, all states which use SMD to elect the majority of members in the lower house are coded as ‘1’ and all PR systems are coded as ‘0’ and thus the two types of electoral formulas are coded as mutually exclusive from one another, making interpretations of their effect on the dependent variable relatively simple. Countries like the Philippines and Thailand, which employ a mixed-system – allowing for some seats to come from PR, but the majority of the members of parliament come from FPTP, single member districts - are coded as ‘1’. Other ‘mixed-system’ cases such as Germany, Hungary (from 1998 on) or New Zealand (after 1996) that award at least 50% of the lower house seats by PR methods or award more seats to the PR lists are coded as ‘0’ for *ELECTORAL SYSTEM*.

On the party system (*PARTY SYSTEM*), this variable is also coded dichotomously – as either a relative two-party or multiparty system. The hypothesis does not predict a linear effect with respect to the number of parties in an SMD or PR system, meaning that three or four viable parliamentary parties would produce more or less the same effect as six or seven, thus a dichotomous coding seems more appropriate than a continuous one for *PARTY SYSTEM*⁸. I follow the standard coding from the recent literature (see Martin and Swank 2008) and code all country-years with less than ‘3’ effective number of parliamentary parties as ‘two-party’ and all those with three or more as ‘1’ for *PARTY SYSTEM*. The ‘effective number of parliamentary parties’ is taken from two sources to maximize the number of the observations – from Golder (2005) and Gallagher and Mitchell (2008) - with Golder’s data being employed from for all possible cases up until 2000, while Gallagher and Mitchell’s data is used from 2001.

⁸ I would like to thank one of the anonymous reviewers at *Electoral Studies* for this suggestion.

To test H1 in the most strait-forward and easily interpretable way, I generate four mutually-exclusive groups of country-years based on the two key independent variables - *ELECTORAL SYSTEM* and *PARTY SYSTEM*. The four groupings are self-explanatorily labelled - *MULTI-PR*, *MULTI-SMD*, *TWO-PR* and *TWO-SMD*. Each state-year available in the study is thus coded as one of these according to the coding above for *PARTY SYSTEMS* and *ELECTORAL SYSTEMS* (see appendix for further details and specific state codings). In all regressions, the omitted comparison group is *MULTI-SMD*, thus all coefficients for the other three combinations are expected to be positive and significant, in particular *TWO-SMD*. Further, there is expected to be *no significant difference* between *MULTI-PR* and *TWO-PR*, as the negative impact of multipartism predicted by H1 is only in SMD countries. I thus test the difference in the coefficients of these two PR groups with a t-test after each regression.

Additional Variables

In modelling corruption, I seek to be as parsimonious as possible yet based on a number of recent studies I also control for additional, significant determinants of corruption in the empirical models to avoid omitted variable bias. It stands to reason that countries with more economic resources at their disposal have more opportunities to build state capacity and fight the economic distortions of corruption (Mauro 1995). The level of economic development has been found to be a strong determinant of corruption or quality of government institutions in general, with wealthier countries exhibiting less corruption on average (La Porta et al 1999; Treisman 2000; Charron and Lapuente 2010) and hence I include the standard measure of *GDP per capita* (logged). Next, there is reason to believe that the stronger the democratic institutions in a country – e.g. strong

support for political and civil liberties and the presence of an independent judiciary — the more likely corrupt behaviour among politicians and public servants will be constrained, as either corrupt politicians will be justly tried in court or average citizens will have greater protections to speak out against malfeasance. In many cases, as demonstrated in the data, some of the strongest, long-term democracies such as Denmark, Sweden and Canada and are also the least corrupt. I control for the level of *DEMOCRACY* using the Political Rights measure from Freedom House (inverse). Both *GDP* and *DEMOCRACY* are lagged by one year. In addition, neither electoral systems nor corruption are distributed equally across the globe. Further, taking even a brief look at the data will show that certain regions, such as sub-Saharan Africa or Latin America exhibit collectively higher levels of corruption in the data while the North American and European countries show collectively lower levels in general. Several empirical studies have also found this to be the case, with certain regions being associated with lower corruption on average, including Africa, South East Asia and Latin America (Triesman 2000). I thus test the impact area dummies in several regressions⁹.

RESEARCH DESIGN

To test the primary hypothesis in the analysis, panel data is used. While much of the recent literature on corruption has employed cross-sectional analyses, the advantages of the time series cross-sectional (TSCS) approach are numerous. For one, the models capture values of the dependent variable in this sample that vary over time, along with a number of control variables, such as press freedom and economic development.

⁹ In addition to these variables, several other standard controls from the corruption literature, including population(log), ethno-linguistic fractionalization, imports/GDP, presidentialism and federalism were tested. Most were insignificant determinants of corruption and none altered the results in any meaningful way and to maximize the number of observations, they were dropped from the final analysis, yet can be obtained by request from the author.

Additionally, some states in the sample made significant changes in their electoral system and/or their number of parliamentary parties changes over time. Two, selecting one year or a group of years to average in a cross-sectional analysis can only show correlation (not causality) and could lead to misleading results in that the snap-shot one selects might misrepresent a larger picture. Further, several states, including Pakistan, Nigeria and all former Communist Eastern/Central European countries move from above to below (or vice versa) the democracy threshold level during certain years throughout the time period. Time series is much better suited to capture these effects than simple cross-section analyses. Three, the sample size increases significantly with panel data, leading to greater degrees of freedom in each of the models and thus lower standard errors. Therefore while the time-span available here is admittedly limited to only 20 years, it is superior in many ways to simple cross-section analysis.

Several specifications are employed to test H1. However, I proceed with a level of caution because there is ample reason to suspect that the observations of the dependent variable are not independent of one another from one year to the next, meaning that if country 'k' was highly corrupt at time 't' it was also most likely corrupt at time 't-1'¹⁰. Problems associated with such serial correlation can of course lead to biased estimates. I thus account for this in a two ways. One, H1 is tested using a Prais Winston estimation with panel corrected standard errors (PCSE), and two, several models are run using a lagged dependent variable by one year.

To account for any systematic shifts in the dependent variable from year to year, a time count is included (*COUNT*), starting in the first year of the analysis. In addition, I

¹⁰ After running the panel data using standard OLS, the Durbin Watson statistic demonstrated autocorrelation in the dependent variable.

control for unobserved characteristics within each country by running several fixed country-effects models. Finally, several regressions are shown taking out certain SMD states to show that the results are robust to changes in the sample.

A brief note on missing data

Based on the sample criteria discussed above and the years available for the dependent and key independent variables, there are 20 years and 70 eligible countries, for a total of 1,400 observations. However the number of observations in the regressions is roughly half of that figure for several reasons. One, several models lose one year because of concerns with autocorrelation (e.g. use of a lagged dependent variable). Two, some states drop out of the sample due to decreases in their democracy scores below the threshold over time. For example, Pakistan and Russia drop out after 1998 and 2003 respectively. Three, the availability for *CORRUPTION*, *PARTY SYSTEM* and *ELECTORAL SYSTEM* for the same state-year is somewhat limited. When taking these factors into consideration, there are a total of 768 possible observations.

RESULTS

Table 1 reports the results for the test of H1 using several different model specifications, accounting for autocorrelation and regional and/or country effects. The dependent variable is such that higher numbers equal lower levels of perceived corruption. The heart of the hypothesis is that mutlipartism will lead to more corruption, yet only in SMD states. Therefore, I also test the difference between *MULTI-PR* and *TWO-PR* coefficients with a t-test between the two coefficients after each regression. To corroborate H1, the coefficient for *TWO-SMD* will have to be positive and significant and the difference between *MULTI-PR* and *TWO-PR* must be negligible.

The first model is a simple, baseline regression testing for differences among the four different combinations of electoral systems and party systems on *CORRUPTION* (model 1) with *MULTI-SMD* serving as the comparison group.¹¹ With no controls, we observe that each of the three groupings is significantly less corrupt than the *MULTI-SMD* group according to the ICRG data. The constant in this case is the estimated average of *CORRUPTION* in *MULTI-SMD* states (3.26) and each of the other three groups is significantly higher than the omitted comparison group, at least the 90% level of confidence. Further, according to the post-regression t-test between the two coefficients, the difference between the two types of PR groupings is negligible, demonstrating baseline support for H1. Models 2 and 3 continue the Prais Winston estimation, yet add controls. In both models, two-party SMD countries are estimated to have lower corruption on average in comparison with *SMD* states with three or more parliamentary parties, while the difference between two-party and multiparty systems in PR countries is indistinguishable from zero. With respect to the control variables, as anticipated, both GDP and *DEMOCRACY* have a positive relationship with the dependent variable, yet the later is only significant when controlling for area dummies. Moreover, none of the coefficients of three groups in the model (*MULTI-PR*, *TWO-PR* and *TWO-SMD*) are distinguishable statistically from one another, yet in model 3 for example, all three exhibit significantly higher scores (lower corruption) than multiparty SMD countries on average. Thus any significant overall differences in corruption between SMD and PR countries appear to be driven solely by multiparty-SMD countries.

****Table 1 about here****

¹¹ I would like to thank an anonymous reviewer at *Electoral Studies* for this suggestion

In model 4 a lagged dependent variable is included in the regression instead of using a Prais Winston estimation to account for the first order autocorrelation. Naturally, the size of all other coefficients are smaller than in models 2 or 3, however, the difference between *TWO-SMD* and *MULTI-SMD* is stronger than in model 2 or 3 (now 99% significant), demonstrating strong robustness for H1. Even when accounting for the first order trend of the dependent variable, two-party SMD countries have a 0.14 higher ICRG corruption score than multiparty SMD countries on average, *ceteris paribus*. Both *MULTI-PR* and *TWO-PR* are again estimated to be significantly less corrupt on average than multiparty SMD countries, yet as shown in the post-regression t-test, their coefficients (0.09 and 0.10 respectively) are far from distinguishable from one another, lending more support that party systems only play a role in SMD countries in explaining levels of corruption.

Models 5 and 6 employ fixed effects to account for country-specific effects outside of models 1-4. Model 5 returns to a simple baseline, yet also includes a lagged dependent variable and *COUNT*, the later of which has shown a small but significant negative trend over time in *CORRUPTION* in models 2-4. When controlling for fixed country effects, the difference between two-party and multiparty SMD countries becomes even more pronounced. The average two-party SMD country compared with a multiparty SMD country has a 0.30 higher ICRG score (roughly 23% of a full standard deviation of *CORRUPTION*) and this difference is significant in both models 5 and 6 at the 99% level of confidence. Interestingly, while the party system continues to play no role in distinguishing levels of *CORRUPTION* among PR countries, the coefficients *MULTI-PR* states in models 5 and 6 are now indistinguishable from *MULTI-SMD*, with *TWO-PR*

being 0.19 higher than the comparison group and just significant at the 90% level of confidence. However, whether the party system is two-party or multiparty in PR countries still does not play a role in predicting levels of *CORRUPTION* as it clearly does within the SMD countries.

****Table 2 about here****

How robust are these findings? Using the specifications from models 4 and 6 in Table 1 respectively, select states are removed from the sample in order to elucidate whether the results are dependent on one or two salient countries. This is done in ten different scenarios using the aid of the list of countries in the appendix. For the sake of space, only the coefficient for *TWO-SMD* (with p-value in parentheses) is reported in Table 2 along with the t-test between *MULTI-PR* and *TWO-PR* and the number of observations.

First, one might suspect that the results could be driven by a few two-party SMD countries that have high ICRG scores. The US and the UK for example, both coded as *TWO-SMD* countries throughout the 20 years in the sample, have relatively low corruption and are thus removed individually in scenarios 1 and 2. However, in neither the PCSE regressions nor the fixed effects models do the results change in any substantive way. In model 3, both the UK and US are removed simultaneously and the results still hold, in fact the coefficients and significant levels are nearly identical to the results in Table 1. Next, in scenarios 4 and 5, the sensitivity of the results are tested by removing two OECD countries that have multiple years coded as both *MULTI-SMD* and *TWO-SMD* – Canada and France. The coefficient of *TWO-SMD* is slightly reduced when Canada is removed, yet remains significantly higher than multiparty SMD countries as

evidenced by the significance of the positive coefficient. The same with the exclusion of France, and in the fixed effects estimation the gap between multiparty and two-party SMD states increases by 0.06 from the original estimation.

Finally, one might suspect that certain developing countries that are coded as *MULTI-SMD* are driving the results due to lower corruption scores on average. In models 6-10, four developing countries that are coded for long periods as '1' for *MULTI-SMD* are removed individually - India, Thailand, Papua New Guinea and the Pakistan. Moreover in scenario 10, all sub-Saharan African states are removed. First, in none of the fixed effect or PCSE models do the results change in any meaningful way in scenarios 6-10. The removal of India, Papua New Guinea, Thailand and the Pakistan more or less produce the same results in the original model 4 in Table 1. When sub-Saharan African states are removed in scenario 10, the coefficient in the PCSE model falls -0.13 and drops to a 95% level of confidence yet remains significantly different than the *MULTI-SMD* group. Further, in none of the 10 robustness scenarios were the coefficients for the two types of PR groups distinguishable – as was the case in all regressions in Table 1. Overall, Table 1 and 2 demonstrate rather strong and robust evidence in support of H1 both within and across countries.

CONCLUSIONS

Previous studies testing the impact of electoral systems on corruption were essentially using the electoral formula as a proxy for the party system, as most of the main tenets of past theories discuss the varying incentives for corruption based on the number of viable parliamentary parties. While Duverger's Law is generally quite accurate, there are indeed a number of exceptions in that there are more or less two party

systems in PR countries, while a number of SMD states, in particular those with a majoritarian run-off formula, have multiple parliamentary parties. This study thus clearly makes a contribution to the literature by directly testing the notion that it is that party system specifically – not necessarily the electoral formula in and of itself – that influences corruption. Moreover, I add the element of the conditional effect of the electoral formula and demonstrate clear empirical differences between multiparty and two-party-SMD countries, while showing that the party system plays no role in PR countries in determining levels of corruption. Because of the single candidate, ‘winner take all’ element of the SMD system, parties have different incentives in when they are faced with only one clear opponent as opposed to multiple opponents, just as the opposition parties have different incentives for monitoring. In PR systems with multiple winners, the opposition parties need only to receive a proportion of the vote over the electoral threshold to gain parliamentary seats and thus do not face the same risks in bringing to the forefront corruption as a major campaign issue as parties in SMD systems do. I therefore have conditional empirical hypothesis with respect to the affect of party systems on corruption.

There are of course a number of shortcomings in this analysis and therefore a couple of caveats need to be addressed before any further discussion of the results. First, the dependent variable used is based on a perception measure of corruption, not a so-called ‘hard measure’, such as conviction rates, or the number of corruption cases annually. However, this is the standard operating procedure in the literature on corruption, since alternative cross-country data is not available. Second, in an attempt to be parsimonious and obtain clearly interpretable results, the measures of the two key independent

variables- *PARTY SYSTEM* and *ELECTORAL SYSTEM* - are indeed quite broad. There are few 'pure' two party systems, and thus this study needed to rely on a cut-off point established in the literature when coding country-years as either two or multi party. Moreover, many countries do not have purely PR or SMD electoral formulas but a mix of the two. In order to avoid the endless sample divisions one can undergo on this point, I simply coded a country's electoral formula dichotomously based on whether a *majority* of the seats are obtained from PR or SMD. Third, the 20-year time period in question is limited – from 1987 to 2006. Claims that such institutions *cause* changes in the dependent variable are called into question. Such studies can only inform policy-makers and scholars about which type of institutional designs that are *most likely associated* with higher or lower levels of corruption due to a change in incentives for behaviour on the part of the politician.

That being said, this analysis explains some of the variance in the levels of perceived corruption by distinguishing not only between party systems, but elucidates how such party systems are conditioned by electoral formulas in relation to corruption. I began with the assumption that monitoring and 'outing' corrupt incumbent behaviour can be costly for opposition candidates. Two party systems were expected to give more incentives to rival candidates to monitor the potentially corrupt behaviour of incumbent politicians in SMD systems, whereas multiparty systems create more collective action problems for opponents in this type of electoral formula. Again, while few countries are pure two-party states, those that are more dominated by two parties give opposition candidates more incentive to monitor and report malfeasance on the part of the incumbents because of the more zero-sum aspect of the political gains. In a system that

more closely resembles a multi-party state, opposition candidates face greater collective action problems with respect to monitoring incumbents due to the uncertainties of which party or candidate will reap the political spoils. Additionally, the clarity of the two-party system gives voters an unambiguous alternative to any rent-seeking incumbent, whereas the multi-party election can ‘cloud the waters’, yet only in a winner take all context. The relationship between multipartism and corruption in PR states is unambiguously different than in SMD countries. This aspect of the SMD countries has been noted in the literature (Persson, Tabellini and Trebbi 2003; Kunicova and Rose-Ackerman 2005), yet never explicitly tested.

Empirically, I find that the party system plays no significant role in determining the level of corruption in PR countries. Moreover, in none of the regressions are two-party-SMD countries statistically distinguishable from two-party PR countries. Yet in all specifications in both Tables 1 and 2, two-party systems outperform multipart systems in SMD countries with respect to corruption and in most models, both types of PR groups were on average significantly less corrupt than multipart-SMD countries as well. Thus according to the empirical results, only in the unique combination of SMD and multipartism do we find a significant and negative determinant of corruption relative to the other groupings. Employing a sample of 70 semi-democratic and democratic countries from all areas of the world, I find strong support for the hypothesis that multipartism in SMD systems is associated with higher levels of corruption, *ceteris paribus*.

The obvious policy implication for developing countries designing their constitutions is that electoral systems which most likely produce a limited, two-party system are

optimal for monitoring potential rent-seeking by sitting MP's. While this might limit the scope of ideas from the parties in parliament by severely reducing the chance for small parties to enter parliament, it might be worth the sacrifice for states that have experienced high levels of rent-seeking and poor overall government quality. However, in no way does this study seek to imply that a change in the electoral formula can serve as a 'quick fix' to solving any problems associated with high levels of corruption and low levels of trust in a country. Such changes are most likely associated with a number of additional complex factors that might accompany such change over time.

SOURCES

ACE Project: The Electoral Knowledge Network: <http://aceproject.org/copyright>

Adserà, Alícia, Carles Boix, and Mark Payne. 2003. Are You Being Served? Political Accountability and Quality of Government. *The Journal of Law, Economics, & Organization* 19 (2):445-490.

Ades, A. and R. Di Tella, 1999. Rents, Competition and Corruption, *American Economic Review* 89: 982-993

Alt, J. and D. Lassen. 2003. 'The political economy of institutions and corruption in American States', *Journal of Theoretical Politics* 15 (3): 341–365

Birch, Sara, 2007. Electoral systems and the manipulation of elections, *Comparative Political Studies* 40 (12): 1533–1556.

Blais, A. and L. Masicotte, 1996. Electoral Systems, in LeDuc, L., R. Niemi, and P. Norris (eds.), *Comparing Democracies*, Sage.

Bågenholm, Andreas. 2009. Politicizing Corruption – The Electoral Impact of Anti-corruption Discourse in Europe 1983-2007. *The Quality of Government Institute Working Paper Series* - 2009:10

Chang, E. and M. Golden. 2007. Electoral Systems, District Magnitude and Corruption. *British Journal of Political Science* 37 (1): 115 – 37

- Charron, Nicholas and Victor Lapuente. 2010. Does Democracy Produce Quality of Government?. *Journal of European Political Research*. 45 (4): 443-470.
- Cox, G. W, 1997. *Making Votes Count: Strategic Coordination in the World's Electoral Systems*, Cambridge University Press.
- Duverger, Maurice, 1972. Factors in a Two-Party and Multiparty System, in *Party Politics and Pressure Groups* (New York: Thomas Y. Crowell)
- Fackler, Tim and Tse-min Lin. 1995. Political Corruption and Presidential Elections, 1929-1992. *The Journal of Politics*, Vol. 57, (4): 971-993
- Fauvelle-Aymar, Christine and Michael S. Lewis-Beck. 2008. TR versus PR: Effects of the French Double Ballot. *Electoral Studies* 27 (3): 400-406.
- Gallagher, Michael, and Mitchell, Paul, eds. 2008. *The Politics of Electoral Systems*. New York: Oxford University Press.
- Gerring, John and S.C. Thacker, 2004. Political institutions and corruption: the role of unitarism and parliamentarism. *British Journal of Political Science* 34 (2): 295–330
- Golder, Matt, 2005. Democratic Electoral Systems around the World, 1946-2000. *Electoral Studies* 24: 103-121.
- Inter-Parliamentary Union* online: <http://www.ipu.org/english/home.htm>
- Kaufmann, Daniel, Aart Kraay and Massimo Mastruzzi. 2007. "Growth and Governance: A Reply". *The Journal of Politics* 69 (2): 555-562.
- Kaufmann, Daniel, Kraay, Aart and Mastruzzi, Massimo, 2008. Governance Matters VI: Governance Indicators for 1996-2006 July. World Bank Policy Research Working Paper No. 428
- Keefer, Philip. 2007. "Clientelism, Credibility, and the Policy Choices of Young Democracies." *American Journal of Political Science* 51 (4) , 804–821
- Knack, Stephen and Philip Keefer 1995. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics*, 7(3), 207-27.
- Kunicova and Rose-Ackerman, 2005. Electoral Rules as Constraints on Corruption. *British Journal of Political Science* 35(4): 573-606
- Kurtz, Marcus J. and Andrew Schrank. 2007. "Growth and Governance: Models, Measures, and Mechanisms". *The Journal of Politics*, 69:538-554
- La Porta, R., F. Lopez-De-Silanes, A. Shleifer, and R. Vishny, 1999. The Quality of Government, *The Journal of Law, Economics and Organization* (15): 222-79.
- Martin, Cathie Jo and Duane Swank. 2008. 'The Political Origins of Coordinated Capitalism: Business Organizations, Party Systems, and State Structure in the Age of Innocence.' *American Political Science Review* (2): 181-198

- Mauro, P., 1995. Corruption and Growth. *Quarterly Journal of Economics* CX (3), 681–712.
- Myerson, Roger, 1993. Effectiveness of Electoral Systems for Reducing Government Corruption: A Game-Theoretic Approach. *Games and Economic Behavior* (5):118-132
- Olson, M. 1965. *The Logic of Collective Action*, Harvard University Press, Cambridge, MA.
- Persson, Torsten, and Guido Tabellini, 2003. *The Economic Effects of Constitutions*. Cambridge, MA: The MIT Press.
- Persson, T., G. Tabellini, and Trebbi, 2003. Electoral Rules and Corruption. *Journal of the European Economic Association* (1): 958-89
- Peters, John G. and Susan Welch. 1980. The Effects of Charges of Corruption on Voting Behavior in Congressional Elections. *The American Political Science Review*, Vol. 74, (3): 697-708
- Reynolds, Andrew, Ben Reilly, and Andrew Ellis. 2005. *Electoral System Design: The New International IDEA Handbook*. Stockholm: International IDEA.
- Rose-Ackerman, Susan. 2005. “Political Corruption and Reform in Democracies: Theoretical Perspectives,” in Junichi Kawata, ed., *Comparing Political Corruption and Clientalism*, Aldershot: Ashgate
- Rothstein, Bo and D. Stolle, 2009. The State and Social Capital: An Institutional Theory of Generalized Trust. *Comparative Politics*. Vol. 40 Issue 4: 441-467
- Taagepera, R., Shugart, M.S., 1989. *Seats & Votes. The Effects and Determinants of Electoral Systems*. Yale University Press, New Haven, CT
- Teorell, Jan, Nicholas Charron, Marcus Samanni, Sören Holmberg & Bo Rothstein. 2009. The Quality of Government Dataset, version 17June09. University of Gothenburg: *The Quality of Government Institute*, <http://www.qog.pol.gu.se>
- Treisman, Daniel, 2000. The Causes of Corruption: A Cross-national Study. *Journal of Public Economics* (76):399-457.

Figure 1: The Effect of The Number of Parties on Corruption Conditioned by the Electoral Formula

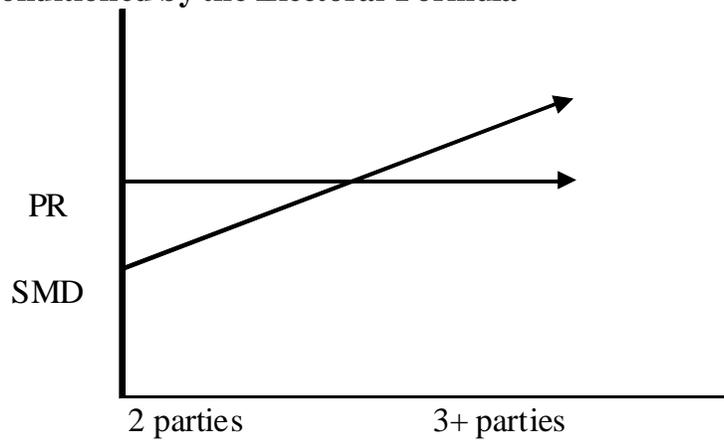


Table 1: The Impact of Party Systems & Electoral Formals on Corruption

	Prais Winston ⁿ			Lagged DV ⁿ	Fixed Effects	
	Baseline	2	3	4	5	6
<i>MULTI-PR</i>	0.41*** (0.001)	0.21* (0.08)	0.32*** (0.004)	0.09** (0.05)	0.17 (0.17)	0.18 (0.16)
<i>TWO-PR</i>	0.32** (0.05)	0.14 (0.32)	0.23* (0.08)	0.10** (0.08)	0.19* (0.10)	0.19* (0.10)
<i>TWO-SMD</i>	0.21* (0.09)	0.28* (0.07)	0.20* (0.08)	0.14*** (0.001)	0.30*** (0.000)	0.29*** (0.000)
<i>GDP per capita (log)</i>		0.87*** (0.000)	0.67*** (0.000)	0.04 (0.22)		0.09 (0.58)
<i>Democracy</i>		0.04 (0.17)	0.32** (0.000)	(0.01) (0.39)		0.001 (0.93)
<i>Year Count</i>		-0.03** (0.02)	-0.04*** (0.003)	-0.02*** (0.001)	-0.02*** (0.000)	-0.02*** (0.000)
<i>Corruption (t-1)</i>				0.89*** (0.000)	0.75*** (0.000)	0.75*** (0.000)
<i>Constant</i>	3.26*** (0.001)	-2.80*** (0.000)	-4.07*** (0.000)	0.31 (0.17)	1.01*** (0.000)	0.24 (0.42)
<i>T-test: (MultiPR – TwoPR = 0)</i>						
prob. > X ² (1-4); prob. > F (5-6)	0.38	0.19	0.43	0.71	0.78	0.79
Area dummies	no	no	yes	yes	no	no
Obs.	768	768	768	731	731	731
years	20	20	20	19	19	19
Countries	70	70	70	69	69	69
Rsq. (within)					0.59	0.62
Rsq. (Between)					0.97	0.97
Rsq. (overall)	0.41	0.55	0.57	0.93	0.93	0.94

note: (p-values in parentheses). Comparison group is 'MULTI-SMD'

Only states codes as a 5 or lower on the Freedom House index of political rights included in the sample.

Dependent variable, ICRG corruption (0-6), coded so that higher scores indicate less corruption.

ⁿ models run with panel corrected standard errors (xtpcse)

T-test: the H₀ is that MultiPR – TwoPR=0, thus a prob. > X² (or F) statistic of 0.05 or less indicates a significant difference of 95% confidence or greater between the two coefficients. T-test for models 1-4 uses a X² distribution while models 5-6 use an F-statistic.

*** = p<.01, ** = p<.05, * = p<.10

Table 2: Robust Checks Cont. - Removal of Individual Countries

		<u>PCSE w/ Lagged DV ⁿ</u>			<u>Fixed Effects w/ Lagged DV ^a</u>		
<u>Sample Alteration</u>	<u>B(TWO-SMD)</u>	<u>Obs. ^o</u>	<u>T-test (PR groups)</u>	<u>B(TWO-SMD)</u>	<u>Obs. ^o</u>	<u>T-test (PR groups)</u>	
1 No US	0.15*** (0.001)	712, 68	0.69	0.29*** (0.000)	712, 68	0.79	
2 No UK	0.14*** (0.001)	712, 68	0.70	0.29*** (0.000)	712, 68	0.80	
3 No US & No UK	0.13*** (0.002)	693, 67	0.69	0.29*** (0.000)	693, 67	0.80	
4 No Canada	0.12*** (0.005)	712, 68	0.73	0.26*** (0.001)	712, 68	0.80	
5 No France	0.12*** (0.002)	712, 68	0.68	0.35*** (0.001)	712, 68	0.69	
6 No India	0.13*** (0.005)	712, 68	0.70	0.31*** (0.000)	712, 68	0.79	
7 No Thailand	0.14*** (0.005)	719, 68	0.71	0.29*** (0.000)	719, 68	0.79	
8 No Papua New Guinea	0.15*** (0.001)	717, 67	0.72	0.29*** (0.000)	717, 68	0.81	
9 No Pakistan	0.14*** (0.001)	721, 68	0.70	0.31*** (0.000)	721, 68	0.78	
10 No S.S. Africa	0.13*** (0.005)	668, 61	0.43	0.31*** (0.000)	668, 61	0.76	

Note: . *B(TWO-SMD)* is the coefficient for two-party SMD country-years against the *MULTI-SMD* comparison group (p-values in parentheses).

'T-test(PR) groups' refers to the post-regression t-test between the *TWO-PR* and *MULTI-PR* coefficients, distributed as X^2 for PCSE models and F-statistic for fixed effects models. Figures less than 0.05 indicate that the two coefficients are statistically distinguishable at the 95% level of confidence. (Ho: *TWO-PR* - *MULTI-PR* = 0)

^o Obs. Is the number of total observations followed by the number of states in the model.

ⁿ PCSE models are calculated using the same specifications as Model 4 in Table 1, with area dummies, full controls and a lagged value of *CORRUPTION* (t-1).

^a Fixed effects are the same specifications as Model 6 in Table 1, with a lagged dependent variable

*** = $p < .01$, ** = $p < .05$, * = $p < .10$

Appendix: Data, Sources and Sample

Dependent variables:

ICRG Corruption – Political Risk Services (PRS) Group (*CORRUPTION*)

“This is an assessment of corruption within the political system. Such corruption is a threat to foreign investment for several reasons: it distorts the economic and financial environment; it reduces the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability; and, last but not least, introduces an inherent instability into the political process... (the measure) is concerned with actual or potential corruption in the form of excessive patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business.” (0 to 6, with *greater numbers equalling lower perceived corruption*).

http://www.prsgroup.com/ICRG_Methodology.aspx

Independent variables:

PARTY SYSTEM – This is a dichotomous variable (multiparty or two-party, author’s construction) based on Golder’s (2005) data on the ‘effective number of electoral parties’ based on formula from Laakso and Taagepera (1979). After 2000, the data is updated using Gallagher and Mitchell (2008). Based on criteria from Martin and Swank (2008) this is equal to ‘1’ when ENP is ‘3’ (multiparty) or greater and ‘0’ when less than ‘3’ (two-party) for any given year.

ELECTORAL SYSTEM, Teorell et al (2008) – Classification, based on Golder’s (2005) underlying data constructed by the authors of the *Quality of Government* dataset (Teorell et al 2009), indicating the type of electoral formula used in legislative elections. It is a dummy variable in which ‘0’ indicates a PR and ‘1’ indicates an SMD system.

Additional sources for coding the electoral formula and FPTP: *IDEA, ACE Project* and *Inter-Parliamentary Union*

Four groupings:

1. **MULTI-PR** – equals ‘1’ when PARTY SYSTEM=1 and ELECTORAL SYSTEM=0
2. **MULTI-SMD** – equals ‘1’ when PARTY SYSTEM=1 and ELECTORAL SYSTEM=1
3. **TWO-PR** – equals ‘1’ when PARTY SYSTEM=0 and ELECTORAL SYSTEM=0
4. **TWO-SMD** – equals ‘1’ when PARTY SYSTEM=0 and ELECTORAL SYSTEM=1

GDP per capita (logged) – World Bank

Freedom House – *DEMOCRACY* (Political rights)

Ranges from 0 (most democratic) to 7 (most autocratic), the inverse is taken in the analysis for easier interpretation (however, actual figures are reported in the summary statistics). This captures the extent to which people can participate freely in the political process, including the right to vote freely for distinct alternatives in legitimate elections, compete for public office, join political parties and organizations, and elect representatives who have a decisive impact on public policies and are accountable to the electorate.

<http://www.freedomhouse.org/template.cfm?page=1>

Area dummies - Hadenius & Teorell (2005)

Time Count (COUNT) – intended to pick up systematic trends in the dependent variable from year to year. Is equal to ‘1’ in year ‘1’ in the data (1987) ‘2’ in 1988, up to 20 in the year 2006.

Summary Statistics	Obs	Mean	St. Dev	Min	Max
<i>Corruption</i>	1606	3.56	1.39	0	6
<i>party system (1=multi)</i>	1354	0.47	0.499	0	1
<i>electoral system (1=SMD)</i>	1411	0.44	0.496	0	1
<i>multi-PR</i>	1288	0.25	0.43	0	1
<i>multi-SMD</i>	1288	0.13	0.34	0	1
<i>two-PR</i>	1288	0.24	0.48	0	1
<i>two-SMD</i>	1288	0.38	0.36	0	1
<i>GDP per cap. (Log)</i>	2314	8.69	1.06	5.81	10.83
<i>Democracy</i>	2318	2.38	1.43	0	5

note: all statistics from 1987-2006. Only state-years where countries are 'free' or 'partially free' according to Freedom House are included.

Country Codings by State-Years by Group

<i>Multi-SMD</i>	<i>Two-SMD</i>	<i>Multi-PR</i>	<i>Two-PR</i>
Bangladesh (1991-95)	Australia	Belgium	Albania (1996-04)
Canada (1997-99, 2004-06)	Bahamas	Bolivia	Argentina (1987-00)
France (1987-92, 97-02)	Bangladesh (1996-06)	Czech Republic	Austria (1987-92)
India (1989-)	Canada (1987-96, 00-03)	Denmark	Botswana (1994-)
Japan (1993-95, 2000-02)	Philippines (2001-02)	Ecuador (1987-94)	Bulgaria (1996-01)
New Zealand (1996)	Congo (1997-06)	Germany	Colombia (1987-97)
Pakistan (1988-96)	Ethiopia (2003-04)	Hungary	Costa Rica (1987-00)
Papua New Guinea (1987-01)	France (1993-96, 03-)	Iceland	Croatia (2002-03)
Philippines (1987-00)	Ghana (1993-)	Israel	El Salvador (1987-90)
Sudan (1987-88)	Haiti (1995-)	Italy	Greece (1993-00)
Thailand (1987-00)	India (1987-88)	Latvia	Guyana (1996-)
Ukraine (1994-97)	Jamaica (1987-00)	Netherlands	Honduras (1991-00)
Zambia (2001-04)	Japan (1987-1992, 96-99, 03-)	Norway	Ireland (1987-91, 97-00)
	Malawi (1994-)	Panama (1989-92)	Korea, South (1992-94)
	Malaysia (2003-06)	Korea, South (1988-91)	Mexico (2000)
	Mali (1992-)	Romania	New Zealand (2005-06)
	Mongolia (1991-00)	Peru (1990-)	Nicaragua (1992-00)
	New Zealand (1987-95)	Russia (1995-00)	Peru (1987-89)
	Nigeria (1999-00)	Turkey (1991-)	Portugal (1987-00)
	Pakistan (1997)	Slovakia	Singapore (1993-)
	Papua New Guinea (2002-06)	New Zealand (1997-04)	South Africa (1996-)
	Trinidad and Tobago	Venezuela (1993-96)	Spain
	United Kingdom	Slovenia	Suriname (1987-00)
	United States	Sweden	Turkey 1987-90)
	Zambia (1991-00)	Switzerland	Venezuela (1997-)
		Ireland (1992-06, 01-)	
		Ukraine (1998-)	
		Albania (2006)	
		Argentina (1997-98)	
		Austria (1993-)	
		El Salvador (1991-00)	
		Colombia (1998-00)	

note: (years available and coded as such) in parentheses. States with no years are coded as only this group as long as they qualify as ‘free’ or ‘partially free’ and data corruption, party systems and electoral system are available.

States that are not coded for the entire 20 years either drop out due to lack of data, fall below the democratic threshold or underwent electoral reform.

A lack of years in this category does not necessarily imply that the country is available for all 20 years - only that it is only coded as MULTI-PR for each state year in any regression where it has data and meets the democratic criteria.

