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Political Decentralization and Corruption: Exploring the Conditional Role of Parties

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Abstract

This paper investigates how national levels of corruption are influenced by the interaction of two factors in political decentralization: the presence of local elections and the organizational structure of national parties. Previous studies have focused primarily on the role of fiscal decentralization on corruption and have mostly ignored the institutions of political decentralization. We argue that corruption will be lower when local governments are more accountable to and more transparent towards their constituents. This beneficial arrangement is most likely when local elections are combined with non-integrated political parties, where party institutions themselves are decentralized from national control. Such an institutional arrangement maximizes local accountability by putting the decision to nominate and elect local leaders in the hands of those best in a position to evaluate their honesty – local electors. In our empirical analyses, using new data in a series of expansive models across multiple countries and years, we find strong and consistent support for our arguments.

Keywords: corruption; decentralization; political parties; local government

JEL Codes: D72; D73; H20; H77;

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1. Introduction

Corruption, generally defined as the misuse of public resources for personal gain, has been found to hinder economic growth (Mo, 2001) and labor force participation (Cooray and Dzhumashev, 2018). More than that, controlling corruption is a key indicator of good governance and is closely tied to a country's basic political stability (Guerrero and Castaneda, 2019). Because of its importance, scholars have devoted considerable attention to identifying the key causes of corruption, pointing to such factors as development (Triesman, 2000) and economic freedom (Buehn and Schneider, 2009).

One institutional feature which has received considerable attention in the corruption literature is fiscal decentralization, by which we mean the devolution of authority to tax and spend from central to sub-national governments (Oates, 1972). Decentralization has become, among other things, a primary vehicle to increase government accountability through the distribution of powers to regional and (especially) local governments. One might expect that corruption should be lower when the local governments are empowered. After all, corrupt acts should be more visible at the local level, and voters can more easily filter out corrupt candidates. On the other hand, decentralization implies many more public transactions and a larger government size, which may create opportunities and incentives for corruption (Goel and Nelson, 1998; Goel and Nelson, 2010; Arvate et al., 2010).

Thus, the relationship between decentralization and corruption is not a simple one. Many scholars do find that decentralization improves government accountability and reduces corruption (Seabright, 1996; Fisman and Gatti, 2000; Arikan, 2004). Others, however, contend that corruption increases with the number of tiers of government (Triesman, 2000; Fan et al., 2009), since the opportunity for misuse of public resources becomes, in a sense, democratized.

In this paper, we endeavor to move this deadlocked debate forward by incorporating the institutional structures through which decentralization (and indeed corruption) operate. Such an approach has not yet been applied to the question of sub-national governments and corruption, but it is very much in keeping with recent research in fiscal decentralization. In the "second generation" fiscal federalism literature, scholars have shifted their focus from normative and technical issues such as the design of the vertical fiscal system to identifying which political and institutional conditions are necessary for decentralization to improve governance.

In this spirit, we draw on recent work on the role of political decentralization and the performance of fiscally decentralized systems to analyze how political institutions, and in particular local elections and integrated versus non-integrated political parties, can mediate how decentralization impacts corruption. We build especially on the arguments of Hankla et al. (2019), who develop and test an expansion of Oates' (1972) decentralization theorem. They find that the combination of democratic decentralization and party integration is especially conducive to the efficient provision of local public goods even in the presence of large externalities. For these authors, democratic decentralization means that local government officials are chosen through local elections, while integrated party systems occur when power (such as local nomination authority) flows upward through well-structured institutions towards the national party headquarters. The basic idea is that local elections create incentives for subnational leaders to provide quality public goods, while integrated parties introduce strong incentives for them to efficiently provide even those public goods with interjurisdictional spillover effects. The result is the achievement of a "fine balance" between the benefits of local accountability and the exigencies of national coordination.

In this paper, we explore the role that these critical institutional features – local elections

and party integration – play in incentivizing or deterring corruption among local officials. Following much of the previous literature, we argue that local elections are critical to promoting the accountability necessary to penalize corrupt officials. However, we also emphasize the role of party integration in mediating the actual functioning of decentralized institutions.

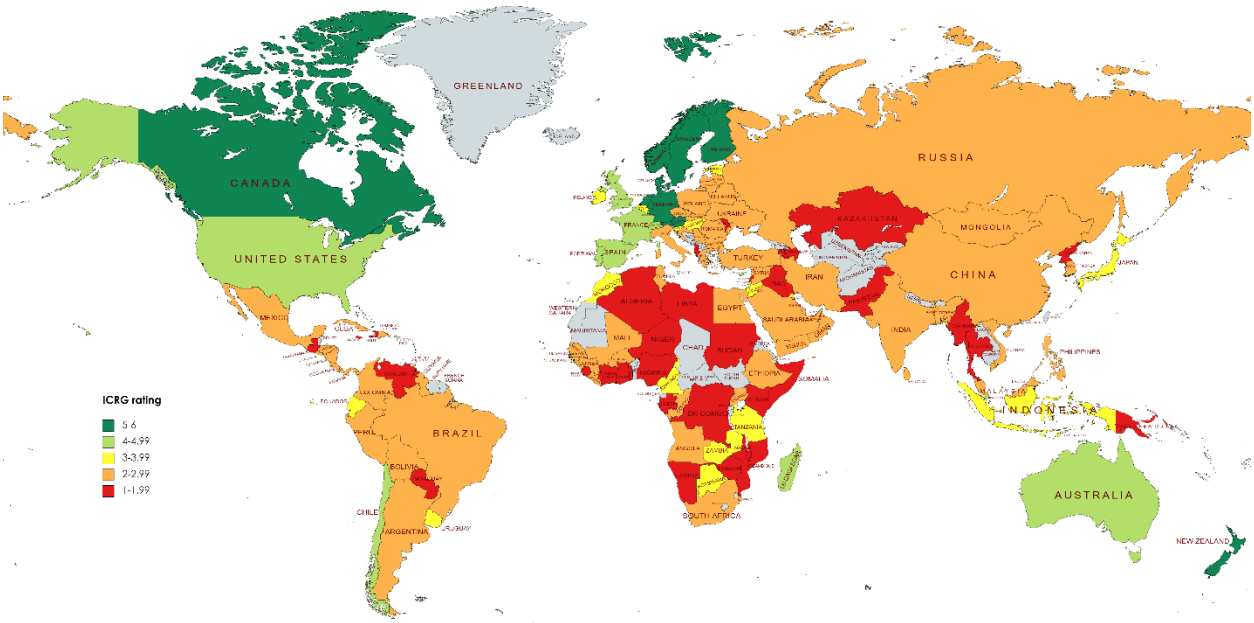
How party integration – predicated as it is on greater centralized control of candidate nominations – impacts corruption will depend on the answers to two critical questions. Are voters in a small constituency in a better position than national party leaders to identify candidates who may be inclined to abuse their office or to penalize elected officials who engage in corruption? Or are the benefits that familiarity may provide trumped by the incentives of integrated national parties to punish members who sully the party name with their corrupt behavior?

On the one hand, the presence of corruption in any locality can be thought of as producing negative externalities for an entire integrated national political party through loss in voter support in other localities. Thus, it would be in the interest of the national party to be vigilant and repress any corruption among its affiliated local public officials. On the other hand, when parties are non-integrated and candidates to local public office are therefore nominated and selected by way of local mechanisms, those candidates may be subject to greater scrutiny for corruption potential than when they are nominated by the national party headquarters. These observations give us every reason to suspect that such a critical institutional feature as party integration, one which ties central and subnational governments together, will matter for the relationship between decentralization and corruption. The only question is how.

Bearing all of this in mind, we hypothesize, first, that democratically decentralized countries – those with local elections – will experience lower levels of corruption. Second,

among such democratically decentralized countries, we explore whether those with integrated or non-integrated parties will have lower level of corruption, other things equal. As we have noted, the previous literature suggests that party integration may be beneficial for public goods distribution by promoting national coordination and the provision of goods with interjurisdictional spillovers. In the domain of corruption, however, maximizing accountability may be more critical than internalizing spillovers. Non-integrated parties could make local officials even more dependent on the votes of their constituents, who can then reward and punish them for their honesty in office.

Figure 1. ICRG Rating in 2007



We test the impact of both our key institutions on corruption using a large cross-national time-series model that considers 135 countries over 24 years. We make use of the new dataset developed by Hankla et al. (2019) to measure party integration and decentralization, while we use *International Country Risk Guide (ICRG)* as our indicator of corruption (Figure 1). Our results show that democratic decentralization – the presence of local elections – is more conducive to lowering corruption than democratic centralization. Furthermore, when local

elections are combined with non-integrated parties, corruption drops significantly to even lower levels. This finding is important not only for our understanding of the roots of corruption, but also as a warning that political institutions can have disparate impacts. The same institutions that may promote public good distribution may also be associated with higher levels of corruption. Scholars and policymakers will need to be more sensitive to the complex and contradictory ways in which institutions can mediate specific policy outcomes.

We structure the rest of the paper as follows: section 2 provides the literature review and discusses the decentralization theorem, section 3 lays out our theory and hypotheses, section 4 discusses the data, section 5 presents our estimation strategy and results, section 6 provides additional checks, and section 7 concludes.

2. Literature Review

2.1 Decentralization and Corruption

The literature on fiscal decentralization has evolved in two primary waves. While the first-generation assumed a benevolent government (Oates, 1972), second-generation scholars recognized that government officials do not always maximize the welfare of their constituents (Weingast, 1995; Seabright, 1996; McKinnon, 1997; Tommasi and Weinschelbaum, 2007). Efforts to understand corrupt behavior within the context of decentralization emerge from this second scholarly tradition.

Corruption has attracted significant attention in the literature, with most scholars seeing it as a significant impediment to good governance. In general, corruption fosters an environment of distrust towards public officials and uncertainty in business activities, and it generates negative externalities in the allocation of resources between firms. Moreover, corruption stifles the entry of new firms, including foreign direct investment (FDI), and its negative effects disproportionally fall on small firms (Giannetti et al., 2021). Evidence also indicates that

corruption hurts economic growth (Mo, 2001) and increases income inequality (Gupta et al., 2003).

While scholars are mostly united in their belief that decentralization has an impact on levels of corruption, there remains some disagreement as to the direction of the effect. For instance, Shleifer and Vishny (1993) contend that decentralization leads to a lack of coordination between bureaucrats due to the greater dispersion of government decision-making powers. This can result in local officials seeking bribes as part of rent-seeking behavior. Furthermore, they argue, local governments might have to rely on low-quality, potentially corrupt bureaucrats because the rewards for working in the central government are generally higher. Along the same lines, Triesman (2000) shows that an increase in the total size of government, which may accompany decentralization, can lead to a higher level of corruption. Compatible with this argument is Fan et al. (2009), who find that an increase in the number of government tiers also increases the level of corruption. As the number of public officials increases, so the argument goes, there is more potential for bribery.

One of the few papers that has considered how politics might interact with decentralization and corruption is Lessmann and Markwardt (2010). They find that decentralization is beneficial in reducing corruption only when effective monitoring is in place. Using freedom of the press as a proxy of effective monitoring, they provide cross-country evidence that decentralization reduces corruption in countries with high degrees of press freedom. Another is Gerring and Thacker (2004), who argue that "unitary and parliamentary systems" are more conducive for reducing corruption. They identify multiple causal mechanism that could influence corruption from both unitary and federalist point of view.

A prominent set of decentralization skeptics has argued that devolving power to lower

tiers could lead to the elite capture of local governments, a position with clear implications for the study of corruption. These scholars contend that local governments are more susceptible to pressures from local elites who can mobilize resources for their own benefit at the expense of the community (Bardhan and Mookherjee, 2000; Lucas, 2016). Additionally, they have argued, corruption tends to thrive when politicians are engaged in clientelism, seeking to stay in office by offering material incentives to their voters. Even when there is no grassroots clientelism, special interest groups may curry favor with bribes, and politicians in return may offer them public work contracts. The penalty for corruption, unfortunately, declines over time due to receding memories and as politicians consolidate power and make it difficult to remove them from office (Bicchieri and Duffy, 1997).

Taking the opposite position, other scholars have pointed to decentralization's ability to enhance the accountability of local governments as a force against corruption (Seabright, 1996; Weingast, 1995). For example, Lockwood (2005) posits that greater local accountability can be achieved through decentralization, while Hankla (2009) and von Braun and Grote (2000) emphasize the critical role of local elections in promoting this accountability. The logic is that, in their efforts to be reelected, local officials have reason not to engage in behavior that hurts their constituents, and, moreover, local officials should be easier to catch and sanction than those at higher tiers.

Decentralization may also limit the extent of rent extraction. On this question, Arikan (2004) examines the relationship between decentralization and corruption under a tax competition framework. She finds that, as jurisdictions try to reduce capital flight by lowering taxes, corruption becomes less remunerative. Such a political competition framework likewise suggests that when multiple politicians are competing to win office, corruption is lower under

decentralization than under centralization (Albornoz and Cabrale, 2013). And, more broadly, several papers have provided empirical evidence of a negative relationship between fiscal decentralization and corruption (Fisman and Gatti, 2000; Arikan, 2004; Ivanyna and Shah, 2012).

Some recent studies have focused on examining the effect of decentralization on corruption in specific countries. Generally, these studies use the number of corruption cases as their dependent variable. Alfada (2019) investigates the causes of corruption in Indonesia, finding that a higher degree of expenditure decentralization yields an increase in the number of corruption cases. Similarly, Fatima et al. (2016) use water theft from irrigation basins in Pakistan as a proxy for corruption. They find that delegating the irrigation authority to locally elected leaders, in fact, increased the level of corruption. The results from Ferraz and Finan (2011) suggest the possibility that re-election serves as a significant incentive for corrupt politicians to lower rent extraction. Their findings highlight the importance of re-election as an incentive to fight corruption, to which Gamalerio (2020) lends further supporting evidence from Brazil.

Furthermore, it is plausible that corruption exhibits cross-boundary spillover at the subnational level, as neighboring regions tend to have higher degree of economic, political, and sociocultural exchange (Borsky and Kalkschmied, 2019). Such regions are also more likely to engage in trade and are closer with respect to shared history, language, ethnic diversity, and culture (Limao and Venables, 2001; Disdier and Head, 2008). In this context, one can presume that exchange of ideas happens at greater frequency at the subnational level than at the cross-national level. If the level of externality is high, then decentralization alone might not produce effective results. If we consider heterogenous jurisdictions, however, decentralization is effective, as an empowered central government could over or under allocate resources to fight corruption (Villalonga, 2018).

2.2 Corruption and ballot choice

A final area of research relevant to our argument concerns the relationship between corruption and different electoral systems.[1] Most of the debate in this area has focused on national governments. For example, Sung (2004) and Kolstand and Wiig (2016) have shown that democracy is effective in decreasing corruption, while Drury et al. (2006) have presented evidence that elections provide an incentive for government officials to lower corruption for the sake of their political survival.[2] Additionally, Kunicova and Rose-Ackerman (2005) have made the argument that monitoring for corruption by voters is easier under the plurality rule. This is because, in a plurality system, there is less possibility of coalition governments, so political opponents have more incentives to keep other parties in check.

In his seminal work, Myerson (1993) argues that while voters prefer honest candidates, they might vote a dishonest candidate into office if they could not find a good substitute candidate. Following this argument, Persson et al. (2003) provide empirical evidence that a larger district magnitude is associated with lower corruption. Having more seats per district, they argue, lowers the *barrier to entry* and increases the representation of the voters. Thus, an increase in the number of players in the election field leads to lower rent extraction and lower corruption.[3]

More than that, how candidates are nominated for the ballot may also make a significant difference in the resulting corruption. Verardi (2004) distinguishes between the effects of different forms of candidate selection on corruption. He shows that a larger district magnitude is

[1] An electoral system is defined as a set of rules upon which voters' preferences are aggregated and representative seats are allocated (Dzionek-Kozlowska, 2014).
[2] Though temporary upsurges in government corruption may occur during the early stages of the process of political liberalization (Sung, 2004).
[3] Verardi (2004) also achieves a similar result. His main dependent variable is the International Country Risk Guide, which is the same variable we use in this paper.

associated with lower corruption and that the closed-list nomination process is associated with higher corruption. In a plurality electoral system, voting over individual candidates gives the elected officials strong incentives to perform well while in office. However, when the nomination list is closed, and voters cannot choose their preferred candidates, a government official's chance of re-election depends on other factors that could be uncorrelated to her competence, such as party loyalty (Persson and Tabellini, 2003). This could dilute the incentives for the elected officials to perform well while in the office.

Past research suggests that political institutions are likely to matter in mediating the relationship between decentralization and a variety of outcomes, especially local public goods provision (Riker, 1964; Enikolopov and Zhuravskaya, 2007). While some debate persists, this research has broadly shown that political institutions – especially particular electoral systems – can also dampen, or exacerbate, levels of corruption. The link between decentralization and corruption, however, remains uncertain, with scholars finding effects in both directions. Moreover, there is little work considering how political institutions might mediate this relationship.

One important exception is Ivanyna and Shah (2012), who create a decentralization index which considers both the political and fiscal independence of low government. They use this index to predict corruption levels in nearly every country in the world and find clear evidence that decentralization reduces corruption. This is an important finding, but our paper takes the analysis a step further. We make use of a variable measuring whether local governments are elected, which Ivanyna and Shah (2012) also considered, but we interact it with a new variable measuring party integration. Using an interactive approach with a new and important institutional variable, how political parties arrange the nomination of local candidates, allows us

to better consider the conditions under which political decentralization might promote or impede corruption.

3. Theory

It is our hope to resolve, at least partially, the mixed findings produced by past studies examining how decentralization impacts corruption. One possibility may be that the mixed findings we highlight above are due to the omission of critical institutional variables that affect how unethical public behavior plays out in centralized versus decentralized systems. When we consider the institutional context of decentralization in more detail, we may find clearer relationships.

We argue here that an incorporation of political institutions – and especially party integration – can shed light on the decentralization-corruption nexus, as it has already on the connection between decentralization and local public goods. As we have already discussed, the literature on decentralization has recently expanded to include an analysis of the political conditions necessary for the provision of public goods with spillovers. In particular, Hankla et al. (2019) provide a theoretical framework that incorporates increased through democratic decentralization with the role of political parties in internalizing the externalities of public goods.

For these authors, democratic decentralization occurs when sub-national governments are popularly elected.[4] Party integration, for its part, is present when the following three conditions are met: i) national parties are the primary competitors in sub-national elections, ii) they are institutionalized and have coherent decision-making structures, and iii) national party leaders have authority over the nomination of candidates for subnational office. With these definitions in mind, Hankla et al. (2019) argue that local leaders want to win the next election and so must

[4] Note that we focus our analysis here on local governments, but that the theoretical arguments should apply to other sub-national tiers as well.

provide their constituents with the local public goods that they desire. But local officials – when operating in the context of integrated parties – are also answerable to national party leaders, who have the power to nominate them for local office and to make or break their careers at higher tiers. Under the assumption of free and fair competition in the elections, national parties have the incentive to provide optimal levels of local public goods with spillovers because they want to win local elections in multiple jurisdictions. The dual loyalties of local elected officials mean that they will provide local public goods that meet the local preferences even when their benefits spillover outside their jurisdictions. Hankla et al. (2019) formalize this concept with what they call the "strong" decentralization theorem, which suggests that, even in the presence of interjurisdictional spillovers, decentralization is more efficient than centralization when parties are integrated. Ponce-Rodriguez et al. (2018) empirically show that democratically decentralized countries with integrated parties provide more efficient levels of health and education services.

Our current paper parallels this discussion to investigate the impact of democratic decentralization and party integration on corruption. Democratic decentralization gives local constituents a greater role in monitoring the performance of elected officials. It incentivizes the government officials to improve their chances of getting re-elected by tending to the needs of local constituents. Therefore, we argue, a democratically decentralized system leads to lower corruption than a democratically centralized system, *ceteris paribus.*

The question is how party integration might interact with democratic decentralization to impact corruption. First, it is worth pointing out that when there are no local elections (and countries are therefore democratically centralized), the issue of party integration across tiers in meaningless since there are no lower tier candidate nominations. Among democratically decentralized countries, as noted above, we define non-integrated parties as those where central

party leaders do not have the authority to nominate candidates for sub-national elections. Instead, local constituents nominate a candidate for each political party. In addition, when a national party does not win a majority of seats in the local assembly, we categorize it as a non-integrated party as well. Indeed, non-integrated parties are generally regional parties that compete in specific regions and do not compete outside their regions.

On the other hand, we define integrated parties as national parties that dominate local elections, with central party leaders – concerned about improving their electoral chances in multiple jurisdictions – having the authority to nominate local candidates. For their part, candidates seeking re-election to local office must get nominated by the party leaders and get elected by the constituents. Thus, elected officials under an integrated party system serve both their constituents and also their party leaders.

How do these different forms of party integration play into levels of corruption? From one perspective, corruption may be understood as a "public bad," which damages institutions and outcomes in the specific place where it occurs, but which may also generate (negative) spillover effects in other jurisdictions. From this perspective, we can argue that integrated parties have strong incentives to combat any localized corruption within their ranks. After all, a bad reputation for probity may negatively affect a party's electoral outcomes throughout the country (Graetz and McAllister, 1987; Davies and Mian, 2010). That is, the electoral costs of localized corruption could be more extensive when political parties are integrated and national. Therefore, party leadership or party reputation could potentially serve as a strong motivation to improve subnational fiscal performance and combat any resource abuse (Benton, 2018).

Another perspective, however, would emphasize that under party non-integration, there is a direct link between an individual candidate's re-election and performance in office.

Furthermore, as non-integrated parties are limited to specific regions, they may have more at stake in terms of electoral outcomes and the local nomination process of candidates. Therefore, they have the incentive to nominate a less corrupt candidate to the office to improve their chances of re-election, especially when national parties are also competing in local elections.

Additionally, a considerable literature suggests that there exists an information gap between voters and party elites (Hertel-Fernandel et al., 2018). Even if party leaders care about voters' preferences, this information gap could lead to the selection of less-than-ideal candidates at the local level. New democracies are more susceptible to such problems, as the party linkage with voters are not well-established (Schneider, 2019; Gulzar et al., 2020). Evidence for the United States also shows that advanced democracies may also suffer from the information-gap problem between voters and party leaders (Hertel-Fernandez et al., 2018).

With this perspective in mind, it could be that, in contrast to public goods provision (where local accountability and national coordination carry equal weight), efforts to deter corruption will lean more heavily on the strength of local accountability. It is true, as noted above, that integrated parties which operate in democratically decentralized settings have an incentive to protect their reputations by nominating honest local candidates. It is also true that local elections can promote effective local accountability even in the presence of integrated parties and strong central control. All the same, such coordination across tiers may be less critical in combatting corruption than in providing public goods.

If what is needed to minimize corrupt incentives on the part of local leaders is strong accountability to constituents, that is produced first and foremost by elections. If these conjectures are right, non-integrated parties, whatever their negative repercussions for public goods, would tend to generate stronger local accountability than integrated parties. That may be

correct for three primary reasons. First, in the absence of central nomination, local candidates in non-integrated systems must be selected locally, often through a primary election, nomination by a local party, or the collection of signatures. Such a selection process creates additional local checks on candidate suitability for office that may more than offset the additional scrutiny by national party officials in the case of integrated parties.

Second, candidates for local office in systems with non-integrated parties are more likely to be local. When parties are integrated, national party leaders may reward non-local loyalists with nomination tickets to local office. But when these central leaders lack power over candidate selection, notables with local reputations are more likely to present themselves for office. Again, this dynamic would allow voters to weed out candidates known in advance as corrupt.

Last, in non-integrated party systems, strong national parties do not play a central role in local elections. For this reason, party identification is less likely to be determinative of local voting decisions. Instead, local personalities and issues will play a larger role. Of course, less programmatic and more personalistic elections may be costly for many elements of governance quality, but they could make it more likely that voters will withhold their support from candidates with a history of corrupt behavior.

These considerations lead us to these two hypotheses:

H1: Democratically decentralized countries (i.e., those with local elections) will have lower levels of corruption than democratically centralized countries, other things equal.

H2: Among democratically decentralized countries, party-integration versus non-integration will likely constitute another layer of corruption control, although it is a priori unclear the direction of the effect.

4. Data Description

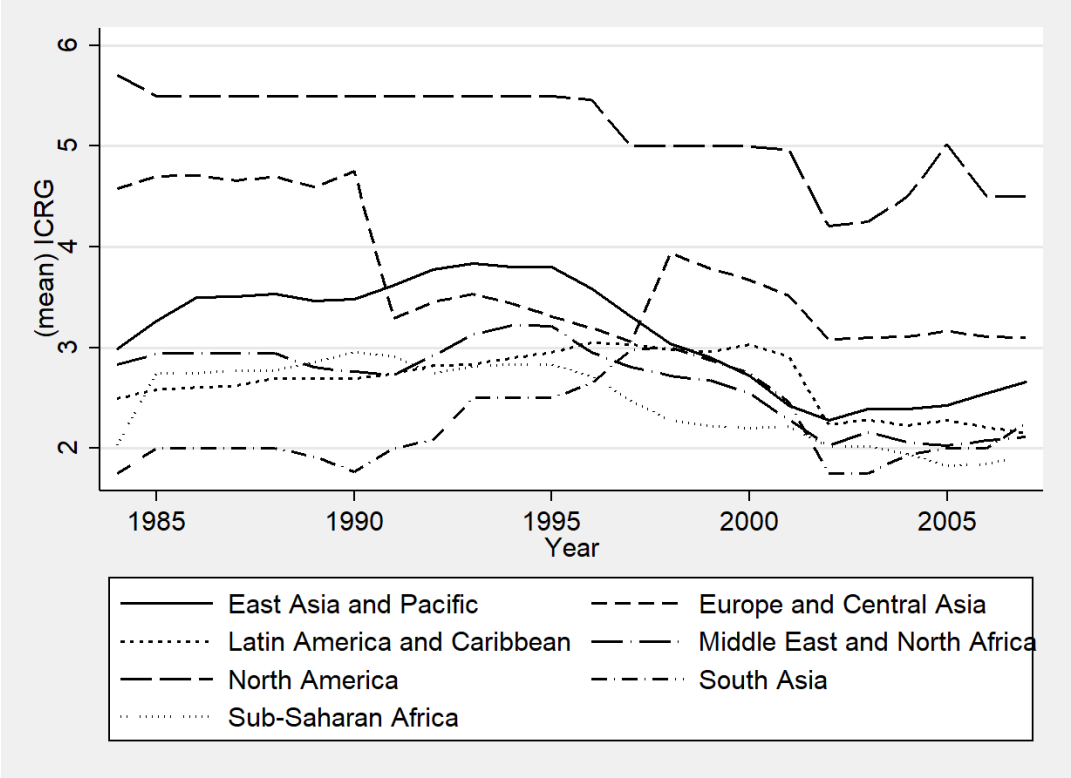
In this section, we briefly describe the data that we use for our empirical analyses.

4.1 Corruption measures

The corruption index, coded as part of the International Country Risk Guide (ICRG) by Political Risk Services, is our main dependent variable. The data are based on surveys of country experts and measure actual and potential corruption in the form of favors and patronage to politicians.[5] The ICRG index considers both "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." The ICRG corruption indicator is a good proxy based on two assumptions: i) corruption negatively affects foreign investment and ii) corrupt officials do not discriminate between foreign and domestic firms to extract bribes (Swaleheen, 2011).[6] In addition, the variable not only covers a longer time period than other available indexes but is also highly correlated with them.[7] The ICRG is measured on a scale of zero to six, with six indicating the least corrupt countries. For this reason, a positive coefficient sign indicates lower corruption. We use the data covering the period 1984 to 2007 (Figure 2).

[5] Other notable papers that use the "International Country Risk Guide" as a corruption measures are, among others, Fisman and Gatti (2002), Gupta et al. (2003), and Lessmann and Markwardt (2010).
[6] Nevertheless, ICRG has its limitations. In some cases, more expert resources might be allocated to assess large economies and less to small economies leading to measurement error especially for smaller countries.
[7] The correlation coefficient between ICRG and World Bank's Control of Corruption is 0.67 and between ICRG and the Corruption perception index is 0.82.

Figure 2: ICRG Rating Variation over time for Seven World Regions



4.2 Decentralization and political institutions variables

The data for local elections and legislative-executive relations are based on Hankla et al. (2019) and cover 135 countries from 1975-2007. We code dummy variables *DDPI* for "Democratic Decentralization and Party Integration" and *DDPN* for "Democratic Decentralization and Party Non-integration." *DDPI* is coded "1" when (1) municipal elections are held, (2) municipal executives are not appointed by a higher tier, (3) at least half of parties have a permanent organization, (4) more than 75 percent of municipal council seats are held by national parties, and (5) national party leaders have the authority to nominate candidates in local elections. Our other variable, *DDPN* is coded "1" when (1) municipal elections are held, (2) municipal executives are not appointed by a higher tier, and when any one or more of the following conditions are met: (1) fewer than half of the political parties have a permanent organization, (2) national parties hold 75 percent or fewer seats in municipal councils, or (3)

central party leaders do not have the authority over party nomination in local elections. The reference category for this analysis consists of democratically centralized countries, i.e., those countries which do not hold local elections.[8] Table 1 shows the total observation numbers for DDPI, DDPN, and democratic centralization.

Table 1. Observation Count

	Count
DDPN = 1 (Democratically Decentralized and Party Non-integration)	882
DDPI = 1 (Democratic Decentralization and Party Integration)	1,123
Democratic Centralization	1,615
Total Observations	3,620

4.3 Other institutional variables

The focus of the analysis for this paper is on municipalities, defined here as the lowest tier of sub-national government. In many systems, these local governments hold significant policy and fiscal powers, and so it is reasonable to assume that corruption measured at the national level will reflect in part an aggregation of corruption at the local level.

To account for municipal level office holding, we include the following institutional variables from Hankla et al. (2019): *municipal directly elected executive* and *municipal plurality.* Municipal directly elected executive is coded "1" when municipal executives are directly elected and cannot be removed by the local council, and "0" when they are council elected or hybrid. Following findings in previous literature, we expect the presence of directly elected executives to have a negative impact on the corruption level, as their re-election is a direct function of their performance. Municipal plurality is coded "1" when the local elections are majoritarian as opposed to proportional or mixed. We expect majoritarian elections to be associated with lower corruption, *ceteris paribus,* though this could be offset by the relatively larger size of

[8] Note that, while these structures are at the party level, individual countries tend to share the same sorts of partisan structures. Our coding methods allow us to aggregate reasonably to the country-year unit of analysis.

proportional electoral districts (Verardi, 2004; Kunicova and Rose-Ackerman, 2005; Persson et al., 2003).

The variable *polity* indicates the level of democracy and the extent of political participation in a country. The *polity* score ranges from -10 (full autocracy) to +10 (full democracy) and comes from Marshall et al. (2016). Following the previous literature, we expect a negative relationship between *polity* and corruption. In a democratic system, elections incentivize government officials to reduce corruption, all else equal.[9] We also control for an independent judiciary. The data for judicial independence comes from the Global State of Democracy Indices and measures the extent to which the courts (both lower and high) are free from undue influence from other branches of government (Tufis, 2020).

4.4 Social and economic control variables

Our model also includes additional control variables that are based on the relevant theoretical and empirical literature. These variables control for the potential effect of a country's economic and social characteristics on corruption. They are *population size*, *surface area*, *GDP per capita (logged)*, and *trade openness*. These variables are available from World Bank (2020). Trade openness is operationalized as the ratio of total imports and exports to a country's GDP.

Furthermore, we include a series of other variables that consider a variety of country specific factors: *Ethnic Fractionalization* (Drazanova, 2020), *government consumption* (as a percent of GDP [World Bank, 2020]), *legal origin* (Treisman, 2000), *government effectiveness index* (World Bank, 2020)*, clean election, local offices relative power,* and *party linkages* (all from Coppedge et al., 2017). We summarize all of these, along with our other dependent and independent variables, in Table 2.

[9] Polity scores ranges from -10 to 10. From -10 to -6 is autocracy, -5 to +5 is anocracy, +6 to +10 is democracy.

Table 2. Summary Statistics

	Definition	Source	Obs.	Mean	S. Dev.	Min	Max
Corruption							
ICRG	Corruption index from ICRG Table 3B. It ranges from 1 (High corruption) to 6 (Low corruption).	Political Risk Service Group (2019)	3,024	2.93	1.43	0.00	6.00
ICRG, DDPI=1			1,048	3.14	1.40	0.00	6.00
ICRG, DDPN=1			789	3.35	1.43	0.00	6.00
Subnational corruption index	Corruption index built from several surveys. Cross-sectional data for 2005	Brosky and Kalkschmied (2019)	1,232	-0.06	0.74	-5.66	2.99
Decentralization and political party variables							
DDPI (Democratic decentralization and party integration)	Coded "1" when (1) municipal elections are held, (2) municipal executives are not appointed by a higher tier, (3) at least half of parties have a permanent organization, (4) more than 75 percent of municipal council seats are held by national parties, and (5) national party leaders have the authority to nominate candidates in local elections.	Ponce-Rodriguez et al. (2016), Coppedge et al. (2017)	3,620	0.31	0.46	0.00	1.00
DDPN (Democratic decentralization and party non-integration)	Coded "1" when (1) municipal elections are held, (2) municipal executives are not appointed by a higher tier, and when any one or more of the following conditions are met (3) fewer than half of the political parties have a permanent organization, (4) national parties hold 75percent or fewer seats in municipal councils, or (5) central party leaders do not have the authority over party nomination in local elections.	Ponce-Rodriguez et al. (2016), Coppedge et al. (2017)	3,620	0.24	0.43	0.00	1.00
Institutional variables							
MDEE (Municipal directly elected executives)	Coded "1" when municipal executives are directly elected and cannot be removed	Ponce-Rodriguez et al. (2016)	3,620	0.24	0.43	0.00	1.00
Municipal Plurality	Coded "1" when an election is based on Plurality system, "0" otherwise	Ponce-Rodriguez et al. (2016), Hankla et al. (2019)	3,620	0.20	0.39	0.00	1.00
Polity Score	Polity score, -10=pure authoritarian, 10=full democracy.	Marshall et al. (2016)	3,618	1.74	7.10	-10.00	10.00
Freedom House Index	Press freedom (1=Higher press freedom, 7=lower press freedom)	Freedom House Index	3,620	3.91	2.20	0.00	7.00
Legal origin	1-British origin; 2-French origin; 3-Socialist origin; 4-German origin; 5-Scandinavian origin	Triesman (2000)	3,467	2.05	0.92	1.00	5.00
Judicial Independence	Measures the extent to which the courts are free from undue influence from other branches of government	Tufis (2020)	3,475	0.47	0.21	0.00	1.00
Socio-Economic Control Variables							
Trade Openness	Degree of a country's openness to international trade: ratio of total imports and exports divided by GDP	World Bank (2020)	3,216	72.68	43.74	0.02	425.36
Logged GDP per Capita		World Bank (2020)	3,439	7.53	1.57	4.55	11.35
Gov. Consumption	Government consumption as a percent of GDP	World Bank (2020)	3,116	15.72	6.96	0.00	135.81
Oil rent	Oil rent as a % of GDP	World Bank (2020)	3,433	4.055	9.65	0.00	66.71
Mineral rent	Mineral rent as a % of GDP	World Bank (2020)	3,443	0.65	2.18	0.00	23.15
Population size	Population in millions	World Bank (2020)	3,617	36.86	128.80	0.26	1.33k
Surface area		World Bank (2020)	3,619	8.32k	1.99m	680	17.1m
Ethnic Fractionalization	Probability that two randomly selected individuals from a population belong to different groups	Drazanova (2020)	3,475	0.45	0.26	0.002	0.89
V-Dem Variables							
Clean election	To what extent are elections free and fair?	Coppedge et al (2017)	3,548	0.49	0.35	0.00	0.99

Local offices relative power	0 – All elected offices are subordinate to non-elected offices at the local level. 1 - Some elected offices are subordinate to non-elected offices at the local level. 2 – Elected and non-elected offices are approximately equal in power at the local level 3 – Most non-elected offices are subordinate to elected offices at the local level. 4 – All non-elected offices are subordinate to elected offices at the local level.	Coppedge et al. (2017)	3,572	2.21	1.51	0.00	4.00
Party linkages	0 – Clientelistic, 1 – Mixed Clientelistic and local collected, 2 – Local collective, 3 – Mixed local collective and policy/programmatic, 4 - Policy/programmatic	Coppedge et al. (2017)	3,572	2.05	1.26	0.00	4.00

5. Estimation Strategy and Results

As noted above, our dependent variable (ICRG) ranges from 0 to 6, and so we make use of the Tobit estimator to account for its constrained values (Brusca et al., 2018). Tobit allows us to estimate a linear association when there is a left- or right-censoring in the dependent variable. Standard errors are clustered at the country level. The empirical specification is as follows:

$$y_{it}^{*} = \beta_0 + \beta_1 ddpi_{it-1} + \beta_2 ddpn_{it-1} + \beta_3 \boldsymbol{X}_{it-1} + \boldsymbol{\delta_1}\mathbf{T}_t + \boldsymbol{\delta_2}\boldsymbol{W}_i + \epsilon_{it} \quad (1)$$

y_{it}^{*} : dependent latent variable for country 'i' in year 't,' which is observed for values greater than τ

DDPI and DDPN are dummy variables for *'democratic decentralization and party integration'* and *'democratic decentralization and party non-integration'*

$\boldsymbol{X}_{it-1}$: Institutional variables (municipal directly elected executive, municipal centrally appointed executive, and municipal plurality) and control variables (government consumption, trade openness, (logged) GDP per capita, population size, country area, legal origin, polity, Freedom House index, free and fair election, and party linkages)

$\boldsymbol{T_t}$ *and* $\boldsymbol{W_i}$ are year dummies and country dummies

We have lagged the explanatory variables by one period to account for the delayed effect of election decisions and policies on corruption.

As a reminder from our discussion in section 3, we argue that democratically decentralized countries – those with local elections – should have lower corruption, other things equal. We also test the proposition that, among such countries, those with non-integrated parties may also experience more honest politics.

We present the estimation results from Equation (1) in Table 3 below:

Table 3. Regression Results for Democratic Decentralization

	No Control Variables (CVs)	Demographic and Economic CVs	Demo., Econ., and Institutional CVs
Democratic Decentralization [L]	0.568*** (0.067)	0.493*** (0.074)	0.441*** (0.090)
Logged GDP per Capita [L]		0.264*** (0.063)	0.232*** (0.066)
Government Consumption [L]		0.003 (0.005)	0.004 (0.006)
Trade Openness = Trade, % GDP [L]		-0.000 (0.001)	-0.002 (0.001)
Oil rent as a % of GDP [L]		0.002 (0.005)	0.004 (0.005)
Mineral rent as a % of GDP [L]		0.018 (0.016)	0.026 (0.017)
Population [L]		-0.003** (0.001)	-0.003* (0.001)
Surface Area [L]		-0.000 (0.000)	-0.000 (0.000)
Ethnic Fractionalization [L]		-7.650*** (1.041)	-8.43*** (1.053)
Municipal Directly Elected Exec. [L]			0.071 (0.102)
Municipal Plurality [L]			-0.028 (0.090)
Polity Score [L]			-0.017 (0.008)
Legal origin (British) - Base			
Legal origin (French)			0.500 (3.058)
Legal origin (Socialist)			-0.989 (2.085)
Legal origin (Germany)			2.031 (2.122)
Legal origin (Scandinavian)			1.331** (0.587)
Clean Election [L]			0.439*** (0.144)
Judicial Independence [L]			0.711* (0.396)
Constant	1.974*** (0.210)	0.956* (0.545)	1.777 (2.236)
Pseudo-R Square	0.3759	0.4143	0.423
Observations (No. of Countries)	2,892 (132)	2,422 (119)	2,270 (111)

Robust standard errors in parentheses [L] Lagged *** p<0.01, ** p<0.05, * p<0.1

Column (1) in Table 3 presents out estimates from the basic model showing the impact of democratic decentralization on corruption. The results show that democratic decentralization has a significant positive impact on the corruption index, meaning that countries with elected local governments are associated with lower levels of corruption.[10] These results are in-line with

[10] In addition to the Tobit model, we also use a fixed effects model (following a Hausman Test) to crosscheck the

previous decentralization literature that has identified a negative relationship between fiscal decentralization and corruption, but they reflect our greater focus on the political structures of decentralization.[11] The results are robust to the addition of demographic and economic control variables as shown in column 2 and institutional control variables in column 3.

Table 4. Regression Results

	No CVs	Socio-Econ. CVs	Inst. And Socio-Econ. CVs	Inst., Socio-Econ, and V-Dem CVs
Democratic Decen. and Party Integration^{L}	0.430***	0.251***	0.190**	0.247***
	(0.074)	(0.076)	(0.091)	(0.095)
Democratic Decen. and Party Non-Integration^{L}	0.777***	0.693***	0.831***	0.902***
	(0.092)	(0.105)	(0.117)	(0.120)
Significant Difference?	Yes	Yes	Yes	Yes
Logged GDP per Capita^{L}		0.242***	0.213***	0.184***
		(0.062)	(0.066)	(0.064)
Government Consumption^{L}		0.002	0.002	-0.001
		(0.005)	(0.006)	(0.005)
Trade Openness = Trade, % GDP^{L}		-0.000	-0.002	-0.002**
		(0.001)	(0.001)	(0.001)
Oil rent as a % of GDP^{L}		0.001	0.001	0.002
		(0.005)	(0.005)	(0.005)
Mineral rent as a % of GDP^{L}		0.018	0.027*	0.037***
		(0.015)	(0.014)	(0.014)
Population^{L}		-0.004***	-0.003**	-0.003**
		(0.001)	(0.001)	(0.001)
Surface Area^{L}		0.000**	0.000***	0.000
		(0.000)	(0.000)	(0.000)
Ethnic Fractionalization^{L}		-6.846***	-7.130***	-7.737***
		(1.018)	(1.027)	(1.021)
Municipal Directly Elected Exec.^{L}			0.066	0.093
			(0.101)	(0.104)
Municipal Plurality^{L}			-0.106	-0.163*
			(0.087)	(0.089)
Polity Score^{L}			-0.008	-0.009
			(0.008)	(0.009)
Legal origin (British)				

results. Results from the fixed effects models support the findings presented in the paper.

[11] See Ivanyna and Shah (2011) and Fisman and Gatti (2000).

Legal origin (French)			-9.150**	-5.203
			(3.671)	(4.728)
Legal origin (Socialist)			6.242**	4.376
			(2.588)	(3.293)
Legal origin (Germany)			8.517***	6.928**
			(2.548)	(3.224)
Legal origin (Scandinavian)			0.952	2.103***
			(0.591)	(0.732)
Clean Election^{L}			0.521***	0.467***
			(0.144)	(0.140)
Judicial Independence^{L}			0.113	0.702*
			(0.405)	(0.397)
All elected offices are subordinate to non-elected offices at local level (Base)				
Some elected offices are subordinate to non-elected offices at the local level				-0.422***
				(0.131)
Elected and non-elected offices are approx. equal in power at local level				-0.239
				(0.156)
Most non-elected offices are subord. to elected offices at local level				-0.435***
				(0.158)
All non-elected offices are subordinate to elected offices at the local level				-0.964***
				(0.211)
Party linkages = 0 (Clientelistic - Base)				
Party linkages = 1 (Mixed Clientelistic and local collective)				0.449***
				(0.108)
Party linkages = 2 (Local collective)				0.355**
				(0.156)
Party linkages = 3 (Mixed local collective and policy/programmatic)				0.549***
				(0.157)
Party linkages = 4 (Policy/programmatic)				0.199
				(0.229)
Constant	2.059***	0.768	-5.594**	-2.980
	(0.200)	(0.537)	(2.745)	(3.521)
Pseudo-R Square	0.3776	0.4171	0.4284	0.4367
Observations (No. of Countries)	2,892	2,422	2,270	2,270 (112)
	(132)	(119)	(112)	

Next, Table 4 presents the main results for the Tobit model considering DDPI and DDPN. Column 1 presents the results with only year and country dummies included. Both explanatory variables show a statistically significant impact on corruption, providing further support for our argument on the role of democratic decentralization. We gradually add control variables in

columns 2-4. With additional control variables, the results continue to show that democratically decentralized systems that are both party integrated and non-integrated are conducive to lowering corruption vis-à-vis democratically centralized systems. Furthermore, the results indicate that when democratic decentralization is combined with party non-integration there is a statistically significant positive impact on the corruption index. This result suggests that, when constituents have more control over the nomination process for local elections, their ability to select more honest candidates reduces corruption as compared to when local candidates are first nominated by their national parties.

A comparison of the two coefficients provides interesting insights regarding the effect of party structure on corruption in a democratically decentralized system. Table 4 shows that both *DDPI and DDPN* have a positive effect on the corruption index (indicating lower corruption). In columns one through four, the effect of *DDPN* is more pronounced and more significant than that of *DPPI*. While both coefficients are statistically significant at the one percent level, the coefficient of *DDPN* is larger in magnitude than that of *DDPI*. Moreover, the differences in the coefficients of the two independent variables are statistically significant, providing further support for our findings.

The results also show a positive relationship between income (measured by GDP per capita) and the corruption index, indicating that as income rises corruption tends to decline. This result has significant support in the literature (Gundlach and Paldam, 2009; Iwasaki and Suzuki, 2012; Jetter et al., 2015; Brusca et al., 2018). By contrast, trade openness and ethnic fractionalization exhibit a negative relation with the index. This finding is compatible with Torrez (2002) and Majeed (2014), who both point to a negative relationship between trade openness and ICRG corruption index. As to ethnic fractionalization, Alesina and Ferrara (2005)

suggest three possible reason for a negative causal relationship with corruption: (i) people, in general, prefer others from their ethnicity, (ii) when there are market failures or when legal contracts cannot be enforced due to weak institutions, ethnic affiliation is used as a reputation mechanism and to resolve legal disputes, and (iii) the cost of production increases with ethnic diversity as a result of difficulties in communication over lingual or cultural lines.

To test the robustness of these models, we also estimate them for non-authoritarian regimes only (with polity scores greater than -5) and for democracies only (with polity scores greater than 5). There is an assumption of at least some political competition in our theory, so we expect the results to hold, and perhaps be stronger, for this subset of cases. As the models shown in Table 5 indicate, these expectations are borne out, with our primary independent variables being statistically significant, differing statistically from one another, and possessing generally higher coefficients than in the baseline models.

Table 5: Excluding Autocratic Regimes

	(1) Tobit Model Excluding Authoritarian Regimes (Polity IV >-5)	(2) Tobit Model Only Including Democratic Regimes (Polity IV >5)
Integration (DDPI-Lagged),	0.320* (0.110)	0.765** (0.151)
Non-Integration (DDPI-Lagged)	0.898*** (0.133)	1.104*** (0.166)
Significant Difference	Yes	Yes
Institutional Control Variables	Yes	Yes
Socio-Econ Control Variables	Yes	Yes
V-Dem Variables	Yes	Yes
Year Dummies	Yes	Yes
Country Dummies	Yes	Yes
Observations (Countries)	1,816 (105)	1,454 (85)

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

In summary, democratically decentralized systems with either kind of party structure are effective in reducing corruption compared to democratically centralized systems. Within the decentralization framework, however, party non-integration is more effective than party integration at reducing corruption. In the next section, we present estimation results from

alternative identification strategies to ensure the robustness of these results.

6. Robustness Checks

6.1 Quantile Regression

We use quantile regression as a robustness check on our main results. Conventional OLS regression reports the conditional mean (E(y|x)) of the dependent variable. Unlike OLS estimation, quantile regression does not require a normally distributed error term. Rather, it estimates the parameter at multiple points in the distribution of the dependent variable (Billger and Goel, 2009). Thus, quantile regression examines the impact of the covariates on the entire distribution of the dependent variable. It allows us to assess whether the relationship between the independent variables and corruption varies over different quantiles, i.e., if the relationship holds in both highly corrupt and less corrupt countries (Saha and Su, 2012; Goel and Ram, 2013; Jetter et al., 2015). We present these results in Table 6 below.

Table 6. Quantile Regression

	(1) 10th Quantile	**(2)** 25th Quantile	**(3)** 50th Quantile	**(4)** 75th Quantile	**(5)** 90th Quantile
Democratic Decentralization and Party Integration (DDPI)	0.345	0.295	0.311***	0.307	0.053
	(0.211)	(0.198)	(0.053)	(0.355)	(0.162)
Democratic Decentralization and Party Non-Integration (DDPN)	0.649**	0.545	0.802***	0.709**	0.698***
	(0.290)	(0.553)	(0.096)	(0.250)	(0.311)
Significant difference	No	No	Yes	No	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes
Country and Year Dummies	Yes	Yes	Yes	Yes	Yes
Pseudo R-sq.	0.62	0.54	0.58	0.64	0.68
Observations	2,379	2,379	2,379	2,379	2,379

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The OLS estimate provides a baseline of mean effects. A Bruesch-Pagan / Cook-Weisberg test for heteroskedasticity yields a large and statistically significant chi-square value indicating the presence of heteroskedasticity. Thus, we report robust standard errors. The results

show that the relationship between the independent variables and corruption is more prominent at higher quantiles, i.e., low-corrupt countries. The effect of democratic decentralization and party integration (DDPN) becomes statistically insignificant at higher quantiles. However, democratic decentralization and party non-integration continues to have significant effects at most levels of corruption. The magnitude of the coefficient is also greater for DDPN than DDPI, signifying a greater impact on corruption.

5.2 Using data on just sub-national corruption

While our arguments are primarily about corruption at the subnational level, we use national corruption data for our primary analyses. We make this choice because national data are available for a much broader range of countries and years. At the same time, for robustness, we present here our models estimated with the best subnational data on corruption available, coded as cross-section for the year 2005. More specifically, in these models, we use the cross-sectional subnational corruption index from Borsky and Kalkschmied (2019), which uses survey data to capture corruption perception at the local government level.[12]

We present our results in Table 7, which show that the impacts of both independent variables are negatively related to corruption. The magnitudes of both independent variables are almost equal and there is no significant statistical difference between the two coefficients. This suggests that, when using a local level corruption indicator, democratic decentralization is more potent in its effect on reducing corruption than democratic centralization and that this result holds true regardless of the party structure.

[12] Higher value of the subnational corruption index indicates higher level of corruption. For more details on how the sub-national corruption index is created, see Borksy and Kalkschmied (2019).

Table 7: Subnational Corruption

	SNG Corruption
Democratic decentralization and Party Integration	-1.241*** (0.299)
Democratic decentralization and Party Non-integration	-1.259*** (0.368)
Municipal Centrally Appointed Executive	4.035*** (0.809)
Municipal Directly Elected Executive	0.500*** (0.145)
Municipal Plurality	-1.497*** (0.325)
Regional GDP per capita	-0.041 (0.044)
Regional population	0.144*** (0.040)
Ethnic Fractionalization	0.146 (0.095)
Polity Score	0.061*** (0.018)
Region size	-0.044** (0.022)
All elected offices are subordinate to non-elected offices at the local level (Base)	
All or nearly all non-elected offices subord. to elected offices at the local level	2.052*** (0.346)
Elected and non-elected offices are approx. equal in power at the local level	1.744*** (0.537)
Most non-elected offices are subordinate to elected offices at the local level	4.057*** (0.776)
Some elected offices are subordinate to non-elected offices at the local level	6.494*** (1.189)
Party linkage - Clientelisitic (Base category)	
Party linkage - Mixed Clientelisitic and local collective	-2.365*** (0.487)
Party linkage - Mixed local collective and policy/programmatic	-0.548** (0.269)
Party linkage - Polity/programmatic	0.849** (0.364)
Country dummies	Yes
Constant	-2.594*** (0.565)
Observations	1,217
R-squared	0.535

6.3 Endogeneity

The process of isolating the effect of decentralization on various outcome variables may present issues with endogeneity. For instance, fiscal decentralization might have a positive impact on economic growth. Simultaneously, economically advanced countries might be more likely to adopt decentralization then less developed nations (Martinez-Vazquez et al., 2016). By the same token, corruption might affect the level of decentralization. One could argue that more corrupt countries are less likely to be politically and fiscally decentralized because decentralization would generate fewer opportunities for rent extraction by central government officials. And, at the national level, democracy is more difficult to sustain in corrupt countries (Kolstad and Wiig, 2016). Recently, Choudhury (2015) has studied the potential endogeneity between decentralization and corruption using Lewbel's (2012) identification strategy. The paper

finds mild evidence of political decentralization being endogenous but does not find evidence for fiscal decentralization being endogenous to corruption.

To deal with any potential endogeneity, we use the *"Geographic Fragmentation Index"* suggested by Canavire-Bacarreza et al. (2017) as an instrumental variable for democratic decentralization and party integration (DDPI) and democratic decentralization and party non-integration (DDPN).[13] The index measures the weighted probability that any two randomly chosen individuals do not reside in similar altitude zones. The index is given by: $1 - \sum_{j=1}^{J}\sum_{i=1}^{N}(w_{ij}\frac{n_i}{N})^2$, where $\frac{n_i}{N}$ is the share of population by elevation and w_{ij} measures the distance between altitude *i* and altitude *j.* It ranges from zero to one. Zero indicates that all of the population reside in the same altitude zone and one suggests that each individual lives at a different altitude.[14] Geography is purely exogenous and does not directly impact corruption. It can, however, affect corruption via other channels such as political institutions. While migration can weaken the effect of geography, the overall effect seems to endure over time (Canavire-Bacarreza et al., 2020). We use the following 2SLS empirical specification.

The first stage is:

$$ddpi_{it} = \theta_0^1 + \theta_1^1 \boldsymbol{Z_{it}} + \theta_2^1 \boldsymbol{X_{it}} + \pi_1^1 \boldsymbol{T_t} + \pi_2^1 \boldsymbol{W_i} + \mu_{it}^1 \quad (2)$$

$$ddpn_{it} = \theta_0^2 + \theta_1^2 \boldsymbol{Z_{it}} + \theta_2^2 \boldsymbol{X_{it}} + \pi_1^2 \boldsymbol{T_t} + \pi_2^2 \boldsymbol{W_i} + \mu_{it}^2 \quad (3)$$

The second stage is:

$$y_{it} = \beta_0 + \beta_1 \widehat{ddpi_{it}} + \beta_2 \widehat{ddpn_{it}} + \beta_3 \boldsymbol{X_{it}} + \delta_1 \boldsymbol{T_t} + \delta_2 \boldsymbol{W_t} + \epsilon_{it} \quad (4)$$

Where, y_{it} is the corruption index for country "i" in year "t"; *ddpi (democratic*

[13] Other alternative instruments we considered are: (i) legal origin (Fisman and Gatti, 1999; Atunbus and Thornton, 2012; Escaleras and Register, 2012; Dell'Anno and Teobaldelli, 2015), and (ii) climate variability index (Kolstad et al., 2014). Results from both instruments are similar to the results presented here. Unlike the two alternative instruments, the geographical fragmentation index shows variation across both time and cross-sections.

[14] Canavire-Bacarreza et al. (2017) also use the index to identify a causal relation between fiscal decentralization and economic growth.

decentralization and party integration) and *ddpn (democratic decentralization and party non-integration)* are the endogenous regressors; **Z** is the Geographic Fragmentation Index and acts as the instrumental variable; **X** is the vector of control variables; and **T** and **W** are year and country dummies.

An obvious problem with the above specification is that, since the endogenous variables are dummy variables, the underlying conditional expectation function (CEF) for the first stage equations may be nonlinear. We use a probit model in the first stage and obtain the fitted values of $\widehat{ddpi_{\iota t}}$ *and* $\widehat{ddpn_{\iota t}}$. If we substitute the fitted values, $\widehat{ddpi_{\iota t}}$ *and* $\widehat{ddpn_{\iota t}}$, directly into the second stage, we run into another problem – only OLS estimations of Equations (2) & (3) guarantee that the first stage residuals are not correlated with predicted values $\widehat{ddpi_{\iota t}}$ *and* $\widehat{ddpn_{\iota t}}$ and covariates $\boldsymbol{X_{it}}$. This is referred to as the *forbidden regression* by Hausman (1978), and Angrist and Pishke (2009) and Wooldridge (2010) have suggested using *Garden Variety 2SLS* to resolve the problem. This approach, which we adopt, involves using the predicted values from the probit model as the instrumental variable for the endogenous dummy variables. That is, the actual first stage is going to be:

$$ddpi_{it} = \theta_0^1 + \theta_1^1 \widehat{ddpi_{\iota t}} + \theta_2^1 \boldsymbol{X_{it}} + \pi_1^1 \boldsymbol{T_t} + \pi_2^1 \boldsymbol{W_i} + \mu_{it}^1 \quad (5)$$

$$ddpn_{it} = \theta_0^2 + \theta_1^2 \widehat{ddpn_{\iota t}} + \theta_2^2 \boldsymbol{X_{it}} + \pi_1^2 \boldsymbol{T_t} + \pi_2^2 \boldsymbol{W_i} + \mu_{it}^2 \quad (6)$$

And the second stage will be:

$$y_{it} = \beta_0 + \beta_1 \widehat{\widehat{ddpi_{\iota t}}} + \beta_2 \widehat{\widehat{ddpn_{\iota t}}} + \beta_3 \boldsymbol{X_{it}} + \delta_1 \boldsymbol{T_t} + \delta_2 \boldsymbol{W}_i + \epsilon_{it} \quad (7)$$

The estimation result for the IV is presented in Table 8 below.

Table 8. IV Regression Results

	(1) IV results
Democratic Decentralization and Party Integration (DDPI)	1.117** (0.515)
Democratic Decentralization and Party Non-Integration (DDPN)	1.637** (0.649)
Significant Difference	No
Control Variables	Yes
Year Dummies	Yes
Country Dummies	Yes
Observations	1,967
R-squared	0.792

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The results from our instrumental variable model are similar to those from the main specification. Both party structures in a decentralized system yield a positive impact on the corruption index (a negative impact on corruption). However, while DDPN has a larger coefficient, the difference between the two variables is not statistically significant.

7. Conclusion

In this paper, we test the impact of decentralized political institutions, in particular local elections and sub-national party integration, on corruption. We argue that locally elected officials have incentives to behave honestly in office, lest they be voted out of office by their constituents. We also test whether this local accountability is augmented when national parties are non-integrated, meaning that candidate selection for local office also happens at the sub-national level, versus when local candidates are nominated by the national party structure. We use sub-national data to test our theory on a vast dataset of more than 100 countries, and all statistical results robustly show that democratically decentralized countries have less corruption. We also find that evidence in most of our models that, among such democratically decentralized countries, corruption will be further minimized by the presence of non-integrated parties with local candidates selected by a local mechanism.

This result suggests that the ability of local voters to choose among potential candidates allows them to select those who are more honest. It also indicates that this advantage of party

non-integration trumps any benefit derived from the incentives that national party leaders possess to choose honest candidates when they are empowered to do so.

Our findings, in additional to their policy relevance, have three important implications. First, they provide further evidence that political institutions, and in particular party structures, matter for governance outcomes at the local level. Second, they indicate that "perfect" local institutions may not exist, since party structures that are best for public goods delivery and those that reduce corruption seem to be different. Finally, they point clearly to the important role played by information in combatting corruption. While both national party officials and local voters possess incentives to minimize corruption, it is local voters who know which candidates are likely to abuse their positions. Empowering these voters, our results suggest, will reduce the risk that corruption will undermine good governance.

In the final analysis, we hope that this paper can contribute to resolving entrenched theoretical disputes and mixed empirical findings around the impact of decentralization on corruption. Our results show that scholars must consider the specific political and institutional features of decentralized systems to understand their impact on complex outcomes such as corruption.

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