Cycles of Nepotism:

How Electoral Incentives and Political Connections Undermine Public Procurement

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Abstract

This article examines cycles of nepotism in public procurement in developing democracies. We argue that electoral incentives create perverse incentives for corruption, leading incumbents to favor politically connected firms for public procurement contracts in exchange for kickbacks. This favoritism intensifies in the run-up to elections, when the need for campaign funds and public scrutiny are highest. Politicians strategically award contracts for harder-to-monitor projects, evading public and media oversight. Using the universe of public procurement contracts from the Philippines (2004-2019) and a Regression Discontinuity (RD) design, we show that politically connected firms are disproportionately favored for difficult-to-monitor contracts, such as flood-control projects, resulting in lower quality outcomes. Conversely, these firms are less likely to secure contracts for scrutinized projects like schools and health facilities. This study advances our understanding of how electoral incentives and political connections interact to undermine public procurement, highlighting significant welfare costs and offering policy insights for mitigating corruption in developing democracies.

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Governments in low- and middle-income countries invest approximately $1 trillion annually in public infrastructure–roughly 3.4 to 5 percent of GDP (Fay et al. 2019). Yet investment quality varies sharply, with consequences for welfare. A central challenge is political influence in public procurement: it can distort which projects are selected, which firms win contracts, and how well projects are executed. Recent flooding in the Philippines has renewed scrutiny of allegations that flood-control works were delayed, substandard, or missing despite substantial spending.

This paper studies how electoral incentives can degrade procurement quality. We explore a theory of "cycles of nepotism": as elections approach, incumbents increasingly steer contracts toward politically connected firms to secure illicit campaign finance, but they do so disproportionately in project categories whose quality is harder for voters, media, and oversight bodies to observe, i.e. flood control systems. Shifting procurement toward low-visibility quality dimensions allows politicians to reconcile two pressures that peak before electionsgreater demand for campaign resources and greater risk of exposureat the cost of lower execution quality.

This mechanism speaks to two competing views of elections. In the classic accountability view, elections discipline incumbents by tying political survival to performance (Barro, 1973; Ferejohn, 1986; Fearon, 1999). Because voter attention and media scrutiny intensify in the run-up to elections (Pierskalla and Sacks, 2018; Marshall, 2020; Larreguy et al., 2020), incumbents should restrain rent-seeking and improve public goods provision (Rogoff and Sibert, 1988; Rogoff, 1990; Rogger and Somani, 2021). A growing literature, however, documents that elections can increase corruption by raising the demand for illicit finance, encouraging politicians to trade procurement for kickbacks used to fund campaigns and vote-buying (Sukhtankar, 2012; Mironov and Zhuravskaya, 2016; Cooper, 2021; Figueroa, 2021; Holland and Freeman, 2021). Our theory links these strands by specifying when incumbents can expand rent extraction precisely when scrutiny is highest: they reallocate contracts toward connected firms and toward projects where quality is difficult to monitor.

We define a politically connected firm as one with privileged access to a politician that can be used for mutual benefit (Canen and Wantchekon, 2022). The key implication is that electoral cycles in public spending need not reflect only shifts in the level or timing of procurement, but also shifts

in who is awarded contracts and in the observability of qualitymasking a corruption cycle beneath conventional political budget cycles. Audits then reveal the welfare-relevant consequence: contracts awarded to politically connected firms are more likely to exhibit implementation deficiencies consistent with lower quality.

To test our hypothesis, we analyze data on elections and public works contracts from 2004 to 2019 in the Philippines, supplemented with detailed audit data. Our methodological approach uses a Regression Discontinuity (RD) design, exploiting the quasi-random outcomes of close elections to provide causal evidence on the impact of incumbents' electoral incentives on public procurement. Specifically, we compare contracts awarded in districts where a connected incumbent narrowly won with those in districts where the incumbent narrowly lost, resulting in a new legislator taking over.[1] This approach allows us to isolate the effect of continuing firm-politician connections on the allocation of public contracts and the quality of the resulting projects.

The main outcome of interest is the value of contracts received by each firm. We further classify public projects based on their suitability for kickbacks, differentiating between projects that are harder to monitor, such as infrastructure developments, and those that are more closely scrutinized, like school buildings and health facilities. Additionally, we use detailed audit data for a subset of projects to assess their quality. By comparing the quality of projects awarded to connected versus disconnected firms, we can directly measure the impact of political connections on public service delivery.

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[1]We focus on previously politically connected firms, defined as those that received a contract in any previous period and remained connected because the incumbent legislator won reelection. By restricting the sample to these firms, we minimize endogenous sorting around the electoral threshold. Our unit of analysis is the previously connected firm within a congressional district, with the running variable being the difference in vote shares between the connected incumbent and the runner-up.

Our main results show that politically connected contractor firms benefit disproportionately in terms of the value of contracts they win. Connected firms are more likely to be favored for projects that are ripe for corruption, such as flood control systems, roads, and bridges, which are difficult for external parties to monitor. Conversely, connected firms are less likely to win contracts for school buildings and health facilities, which are more closely scrutinized. These effects are most pronounced during the election period, with no similar pattern observed in off-election periods.

Additionally, our evidence shows that contracts awarded to connected firms are often of lower quality, particularly for projects implemented in the run-up to elections. This supports the view that incumbents use their discretion over public procurement to receive kickbacks from firms, strategically choosing contracts that are harder to monitor to avoid voter sanctioning.

This study advances our understanding of public procurement and political corruption in several key ways. First, it extends our theoretical understanding of how electoral incentives shape budget cycles in developing democracies, highlighting the role of politically connected firms in facilitating corruption. Second, building on existing literature on electoral cycles and corruption, we introduce the concept of cycles of nepotism masked by business cycle patterns, providing a nuanced view of how politicians balance public service provision with corrupt practices. Third, our empirical approach utilizes a robust Regression Discontinuity (RD) design and detailed audit data from the Philippines, offering rigorous causal evidence of clientelism and corruption in public procurement. Lastly, by classifying public projects according to their susceptibility to kickbacks and scrutinizing the quality of these projects, we provide a comprehensive analysis of the welfare costs associated with political connections, contributing valuable insights to the literature on public administration and political economy.

The paper proceeds as follows: First, we present the theoretical framework underpinning our analysis, detailing the mechanisms through which electoral incentives shape public procurement practices. Next, we provide the context and research design, explaining our data sources, empirical strategy, and classification of public projects. We then present our empirical results, demonstrating the impact of political connections on public procurement and project quality. Finally, we discuss the

broader implications of our findings, suggesting avenues for future research and policy interventions to mitigate corruption and improve public goods provision in developing democracies.

Theory

We theorize that electoral incentives and political connections between firms and incumbents shape the allocation of public procurement contracts. Building off canonical theories, which posit that incumbents allocate public procurement contracts to signal their quality to voters, we consider the behavior of politicians up for reelection who may engage in clientelism to finance their political campaigns. Voter attention cycles incentivize politicians to avoid corruption scandals in the run-up to elections. Contracts are differentiated between those allocated to politically connected and disconnected firms.

Politicians up for reelection prefer to allocate contracts to politically connected firms due to lower transaction costs and higher kickbacks. These politicians are thus more likely to award contracts to politically connected firms for projects that are hard to monitor, especially in the run-up to elections, to finance their campaigns and avoid public scrutiny. Consequently, these projects are of lower quality and lead to reduced citizen welfare.

Elections and Budget Cycles

Theories of electoral accountability typically assume that incumbents are motivated to stay in office and compete with challengers in elections. To signal their quality to voters, candidates provide goods and services. Citizens, in turn, use elections to punish or reward the performance of candidates (Barro, 1973; Ferejohn, 1986; Fearon, 1999).[2] Rogoff and Sibert (1988) and Rogoff (1990) suggest that incumbents may deliberately increase public spending in the run-up to elections to signal their quality to voters and improve their chances of winning. Empirical literature provides strong evidence supporting the existence of budget cycles across both developed and developing

[2]We define public goods as any good that is publicly provided by the government.

countries (Alesina et al., 1997; Shi and Svensson, 2006; Brender and Drazen, 2005; Drazen and Eslava, 2010; Golden and Min, 2013).

Elections and Corruption Cycles

Another line of research suggests that elections may create incentives to increase public spending before elections, independent of the need to signal quality to voters. Politicians may use kickbacks from public contracts to finance their campaigns. It is well established that firms use legal campaign contributions to gain political influence (Claessens et al., 2008; Powell and Grimmer, 2016; Canen and Wantchekon, 2022), while politicians use this financial support to increase their election chances (Da Silveira and De Mello, 2011; Avis et al., 2017). Less attention has been paid to campaign finance in clientelistic democracies. Young democracies are often characterized by electoral clientelism and vote buying during elections, where candidates provide some type of private good to voters in exchange for their votes (Vicente and Wantchekon, 2009; Hicken, 2011). Recent research explains political cycles in public procurement by politicians' need to fund vote-buying and other campaign-related activities using kickbacks from firms (Mironov and Zhuravskaya, 2016; Cooper, 2021; Figueroa, 2021; Holland and Freeman, 2021). Whether driven by signaling to voters or financing campaigns through kickbacks, public procurement spending is likely to reflect a budget cycle with a clear spike prior to elections.

Hypothesis 1 (Cycles) *Public works procurement will increase in the run-up to elections.*

Elections and Voter Attention Cycles

However, Marshall (2020) shows that voters' political news consumption also exhibits electoral cycles. Poorly-informed voters pay more attention to news about the performance candidates in the run-up to elections. News outlets respond to this demand and provide more politically relevant news about the performance of candidates during election years. Since voters respond negatively to corruption scandals published by media (Larreguy et al., 2020), awarding contracts in exchange for kickback could come at an electoral cost. In line with this argument, Pierskalla and Sacks (2018)

find that public expenditures in Indonesia are lower in elections years, especially in elections with weak incumbents. They explain their results by the increased public scrutiny during elections years. In line with this argument, Rogger and Somani (2021) also find that infrastructure projects installed in the run-up to elections are of higher quality compared to projects installed after elections. This situation poses a strategic dilemma for incumbents. On the one hand, they could use corrupt public procurement contracts to finance their election campaign. On the other hand, those contacts could hurt their re-election chances if this information gets publicized.

Political Connections & Contract Allocation

We argue that politicians take voter attention cycles into account and have the incentive to award corrupt contracts to politically connected firms.[3] In theory, corruption in contract allocation can occur between incumbents and any kind of firm. However, we argue that it is more likely to occur between incumbents and politically connected firms because awarding corrupt contracts to political connected firms is associated with lower transaction costs. Because firms and politicians previously worked together they share expectations and have lower information barriers. Therefore, collusion is easier and the risk of detection is lower.

A growing body of empirical evidence suggests that public officials use their discretion over public spending for political ends by targeting projects to companies that previously funded the candidates campaign (Boas et al., 2014; Gulzar et al., 2021). We suggest that this is also true for illegal campaign finance prior to elections. Firms also have an interest to establish and maintain political connections because it lowers their costs for market entry, for example by reducing regulation or red tape (Akcigit et al., 2018). Since the relationship between politicians and firms

[3]We define corrupt contracts as any contract that is awarded from a incumbents to a firm in order to receive kickbacks.

is reciprocal, firms who previously received contracts also have a strategic interest to donate to campaigns–legally or illegally–to establish good future connections with politicians.

Hypothesis 2 (Political Connections) *Public works procurement will disproportionately benefit politically connected firms.*

Following the logic of political budget cycles and corrupt campaign finance, the demand for kickback is especially high in the run-up to elections.

Hypothesis 3 (Cycles) *Public works procurement will disproportionately benefit politically connected firms, especially in the run-up to elections.*

Taking voter attention cycles into account, incumbents have the incentive to award corrupt contracts to politically connected firms for those projects where monitoring by voters and media is limited. For those projects, corruption is more likely because the probability of detection is lower.

Hypothesis 4 (Monitoring) *Public works procurement will disproportionately benefit politically connected firms, especially for projects that are hard to monitor.*

Last, it is well established that political connections between politicians and private firms can distort public good and infrastructure provision. In particular, political connections between firms and politicians can undermine development outcomes by distorting how public funds are spent (Boas et al., 2014; Canen and Wantchekon, 2022; Finan and Mazzocco, 2021).

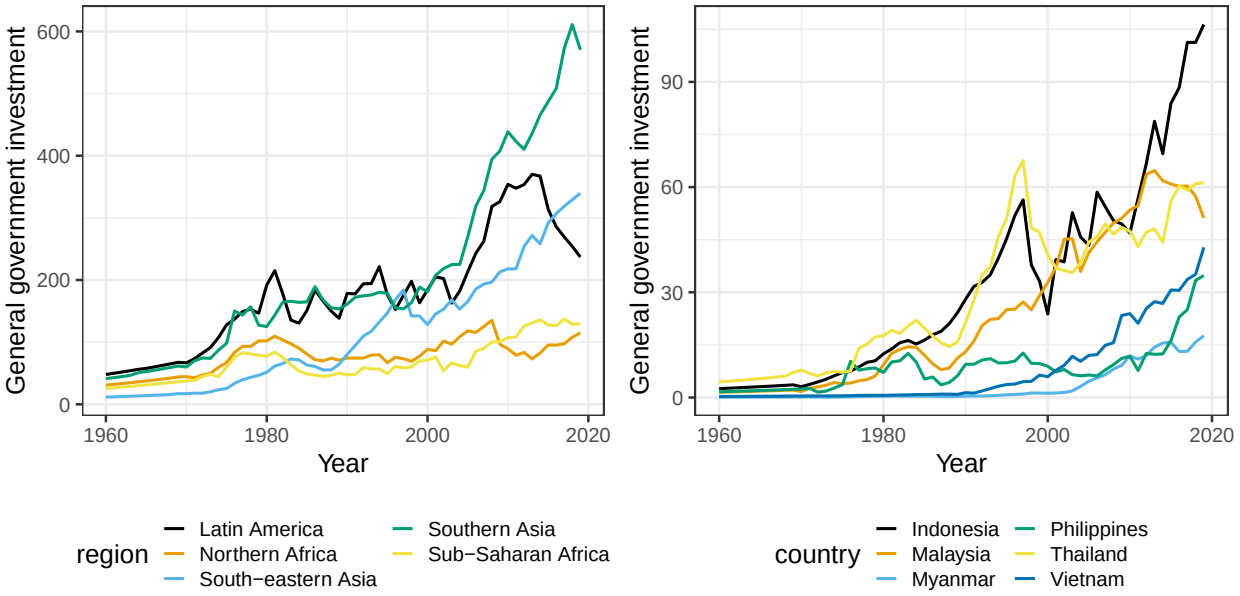
Hypothesis 5 (Welfare Costs) *Public works contracts awarded to politically (dis-)connected firms will be of lower (higher) quality.*

Context

General government investment is on the rise in many developing democracies since the turn of the century. Figure 1 shows that this is particularly true in Southern Asia, Latin America, and South-Eastern Asia, while the increases in Sub-Saharan Africa and North Africa are modest. Looking

within South-Eastern Asia region, we can see that the Philippines is a typical case. Government investment increased around 2000 and almost reached levels of Malaysia and Thailand by 2020. A large part of those investments are spent on public procurement contracts. According to the cross-national survey from Bosio et al. (2022), public procurement in the Philippines works moderately well. There are sufficient laws in place that govern the public procurement process, both in a legal sense and in practice. Projects are of high quality, have few overruns, and have a decent completion rate. However, there are relatively high levels of collusion. Thus, the Philippines are a typical case to study political influence in public procurement.

Figure 1: Government Investment, 1960-2019



Notes: General government investment (gross fixed capital formation), in billions of constant 2017 international dollars. Source: IMF Investment and Capital Stock Dataset.

The Political System in the Philippines

The Philippines operates under a unitary presidential democracy with a multiparty system. The country is divided into 81 provinces. Within a province, cities and municipalities are grouped into

single-member congressional districts that elect a Legislator to the House of Representatives (lower chamber of Congress). There are 243 legislative districts in the Philippines, each composed of an average of 250,000 inhabitants. Legislators serve 3-year terms and are elected at the same time every three years. Legislators are directly elected by plurality rule at the district level. The relevant election years for the purposes of this paper are 2004, 2007, 2010, 2013, 2016, and 2019.

Public Works Procurement in the Philippines

The Department of Public Works and Highways (DPWH) allocates approximately PhP400 billion ($8 billion) in public works and highway engineering and construction projects each year, which constitutes roughly 13 percent of the annual national budget. While bureaucrats are officially in charge of public works contracting, there are opportunities for politicians, contract recipients, and other construction firms to earn rents through corrupt procurement practices. Rigging of the public works procurement occur at every phase of the bidding process (Cruz et al., 2019).[4]

Pre-bidding Before bidding on public works projects, those looking to engage in corruption–public works bureaucrats alongside legislators and local chief executives–typically tailor the projects to benefit themselves or those they have handpicked, rather than the general public. This can be done by creating project concepts, feasibility studies, Terms of Reference, and even architectural designs that favor certain contractors, or by overstating project costs to enable greater diversion of funds for kickbacks. There is also evidence of collusion among different contractors where they agree to take turns winning bids so that everyone involved can get a share of the project kickbacks (Co, 2010).

Bidding If the project has been designed to favor specific contractors and officials have already discussed this with the contractors, then it is likely that the contractors have an unfair

[4]See Section A in the Appendix for the Bidding and Award Procedures in public works procurement in the Philippines.

advantage in the bidding process. In many cases, there are very few bids submitted despite there being many interested bidders, which raises questions about whether there is truly competitive bidding. A former government official noted that allocation of contracts is not open and '*discourages good and honest contractors from doing projects in certain regions where contractors are designated as project takers.*' (Mangahas and Ilagan, 2018). One focus of this phase is to make sure that no one interferes with the schemes laid out by colluding parties. For example, making it so legitimate contractors do not have access to information about the project or project-related procedures is a way of ensuring that they cannot compete fairly for infrastructure and public works contracts.[5]

Post-bidding If the wrong party is in consideration for a project, they may be subjected to coercion or intimidation, according to government contractors and officials. Additionally, bureaucratic tactics such as purposeful delays in document processing can be employed in order to wear down the resolve of legitimate contractors. However, if favored players have effectively secured the contract, other anomalous dynamics can proliferate to compensate for kickbacks delivered to various members of collusive parties. The overall implication of these is that politically connected contractor firms have an unfair advantage over the awarding of public works contracts.

Public Works Project Types and Susceptibility to Corruption

According to our theory, opportunistic politicians prefer projects that provide opportunities for kickbacks while simultaneously avoiding detection by voters or the media.

The possibility for kickbacks in a project depends on the difficulty to monitor them. The ability to monitor a project largely depends on the level of detail of project budgets and the degree

[5]The widespread occurrence of rigging in the bidding process once prompted the Secretary of DPWH to issue a formal statement explicitly instructing the agency to, ". . . not intervene in project biddings (See https://www.dpwh.gov.ph/dpwh/news/1144)."

to which the quality of a project can easily be evaluated. Table 1 below summarizes the different project types and their classification in terms of opportunities for kickbacks.

Table 1: **Public Works Project Type and Opportunities for Kickbacks and Credit Claiming**

Project Type	Monitoring
Roads and bridges	Low
Flood control systems	Low
Multi-purpose buildings	Low
School buildings	Medium
Health facilities	Medium

Roads and bridges are notorious as a vehicle for corruption.[6] Kickbacks for officials are either added to the actual cost (patong) or are portions of project costs earmarked for kickbacks (taripa).[7] Similar cases of corruption have been reported in the context of flood control systems where officials and firms can use the uncertainty around the optimal flood control to inflate budget proposal to include kickbacks (Arcilla, 2015; Roxas, 2019). Multi-purpose buildings, on the other hand, are often constructed in central places in a community and are often used and as venues to provide social services, medical care, seminars, vaccinations, or for other sports or social events. Multi-purpose buildings are often connected to corrupt practices by inflating the costs of projects (Gotinga, 2020). There are fewer reports about corruption in the building of schools or healthcare

[6] See appendix D for an example.

[7] As described by Mangahas and Ilagan (2018): "*One contractor recalled how he had to negotiate with a congressman and a local DPWH official to lower their rates to eight percent and two percent, respectively, and leave the contractor with a profit of at least another eight percent. In all, the three-part sharing scheme meant that 18 percent of project cost had already been set aside for taripa and profit, even before groundbreaking rites for the project.*"

facilities. This is unsurprising–these types of projects are closely scrutinized by stakeholders - school and hospital administrators and other interested parties.

Research Design & Data

The main empirical question for this study is: do firms who are connected to a politician are more likely to recieve public procurement contracts and if so, for what types of projects and when in particlular in the election cycle. Put differently, do incumbent legislators disproportionately benefit firms they are politically connected with in the awarding of public works contracts around election seasons? To answer this, we leverage a regression discontinuity design (RDD) as our identification strategy. Specifically, we use a close election RDD that *compares the contracts received by firms from a connected incumbent who barely wins with contracts received by firms in districts where the connected incumbent barely loses*. Here, we first concentualize and define political connections and then describe the data that we use to measure political connections and its effects on contract allocations.

Defining Political Connections Conceptually, our treatment variable is a political connection between an incumbent politician and a firm. We define this connection dynamically, rooted in a prior politician-to-firm transaction: a firm is connected if it previously received a public contract from a politician who remains in office. This approach contrasts with more static definitions based on the presence of politicians or their relatives as directors, officers, or large shareholders (Faccio, 2006; Khwaja and Mian, 2005; Sukhtankar, 2012), and with measures focused on firm-to-politician transfers, such as campaign contributions in exchange for later contracts (Boas et al., 2014; Gulzar et al., 2021).

One could argue that a prior contract is a noisy proxy for a truly preferential relationship. Indeed, some firms we label as connected may simply be high-quality providers or familiar to the incumbent, rather than beneficiaries of nepotism. Such misclassification would introduce false positives into our treatment group, likely overstating the prevalence of nepotistic connections

while systematically attenuating the estimated effect of such ties toward zero. Accordingly, any positive and significant effect of a continued connection on subsequent contract allocation should be interpreted as a conservative (lower-bound) estimate of the true impact of politically motivated favoritism.

Data

We combine data from various sources and build a congressional district-firm level dataset to study the effect of political connections between a politicians and firms on the subsequent allocation of public procurement contracts. We focus on four electoral cycles: 2004-07, 2007-10, 2010-13, 2013-16, 2016-19.

Treatment: Political Connection Between Firms & Legislator

Previous political connections are defined by an indicator variable that takes on the value of 1 if the firm is politically connected and 0 otherwise. Firms are considered politically connected if they received a contract in any previous period in a given congressional district and the politician who awarded the contract is still in power (i.e. politically connected firms that managed to remain connected because the incumbent legislator won their reelection bid). Accordingly, a firm is considered not connected if they were previously connected but stopped being connected because the politician is no longer in power.

Running Variable: Aligned Incumbent Legislator Vote Share

We use *district-level* election returns data for *congressional election* years 2004, 2007, 2010, 2013, 2016, and 2019. These are single-member districts which return one member each to the lower chamber, elected to serve a maximum of three consecutive three-year terms through a first-past-the-post voting system. The Philippines are divided into roughly 250 congressional districts. As we show in the empirical part of the paper this definition of political connections is useful in the context. Figure 10 in the appendix displays the density of legislative races by the vote share margin

for the incumbent candidate. We see that there appears to be no heaping along the discontinuity; that is, districts with marginally winning or loosing incumbents seem not able to "sort" (McCrary, 2008; Barreca et al., 2016). We also fail to reject the null of no manipulation using Cattaneo et al.'s 2018 test.

Main Outcome: Public Works Contract Value

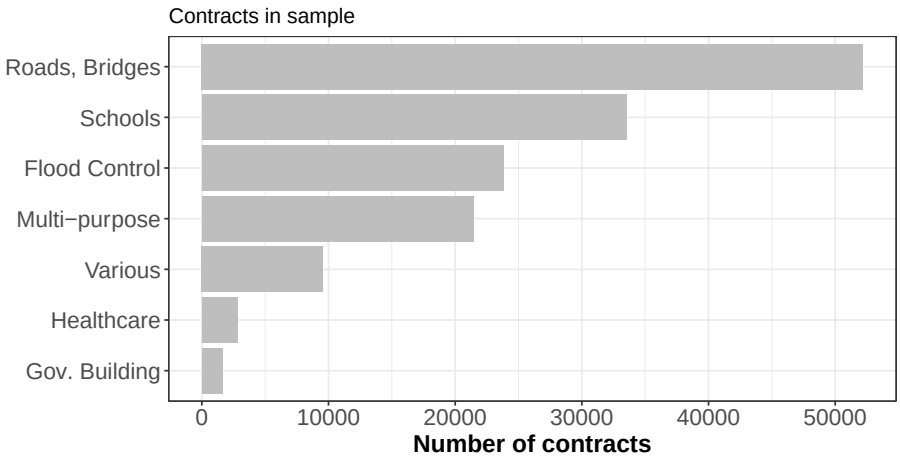
We use data from the online civil works monitoring system of the Department of Public Works and Highways (DPWH) to analyze how access to budget funds differs between firms connected to the legislators and firms that are not. The data detail where the contract was implemented, which firm won the contract, the date the contract was awarded, value of the contract, type of public works, and whether the spending was for repairs of existing infrastructure or for new construction. The dataset spans from 2004 to the present. We examine five types of infrastructure projects – roads and bridges, flood control (dams, drainage), multi-purpose buildings, schools and health facilities – and the combined DPWH budget that legislative districts receive. We separate procurement spending into two main types, corresponding to the ease with which local politicians can skim the budget. Roads and bridges, flood control projects, and multi-purpose buildings are well known to be 'high corruption' budget categories, whereas it is far more difficult to extract money from the construction of schools and health facilities.[8] Figure 2 depicts the distribution of contracts by type in our sample.

Second Outcome: Project Quality

To asses the project quality, we use administrative audit records from the Philippines Constructors Performance Evaluation System (CPES), a mandatory framework used by all procuring entities

[8]See Ramos (2019) for anecdotal evidence.

Figure 2: Procurement data: type of contract



to assess contractor performance on government infrastructure.[9] The CPES program conducts at least one evaluation during construction and a final evaluation upon completion. Each observation is a project-visit. When multiple visits exist for a contract, we use the average of the evaluations. We assemble the universe of CPES evaluations between 2016 and 2019. We focus on this period because, unlike earlier releases, these files include the project location, which allows us to create performance scores for firms in a particular district.

Each evaluation scores the contract on three core dimensions: *Workmanship/Quality* (how the works were executed relative to plans, tolerances, and approved methods), *Materials* (compliance of inputs with specifications and tests), and *Time* (progress and completion relative to the approved schedule). The evaluator records subitem checklists and compiles a numeric score for each dimension. CPES then reports a *Final Rating* as a weighted average of these component scores. For midconstruction visits, auditors also record auxiliary checks (facilities, environmen-

[9]For details, see https://ps-philgeps.gov.ph/home/images/legalbases/RevisedIRR.RA9184.pdf.

tal/safety/health, and resource deployment). We document the underlying checklists and scoring rules in Appendix C.

Our first timing outcome is *schedule slippage*, defined as the percent deviation from the approved schedule.[10] Negative values indicate that a project is behind schedule, while positive values indicate ahead of schedule. We also construct a binary indicator, *Negative Slippage*, equal to one if slippage < 0. Slippage is an informative performance signal but not, by itself, evidence of malfeasance: permitting delays, utility relocations, or weather shocks can legitimately affect timelines. In our empirical tests, such shocks should not differentially favor politically connected firms. Our second outcome is *Workmanship/Quality*. This dimension captures execution quality on observable criteria such as surface evenness, compliance with line and grade, proper compaction and curing, absence of cracks/honeycombing, alignment and fit of installed components, and correct installation practices. Our third outcome is *Materials*. Intuitively, this score asks: did the project use the right inputs and keep proper proof? Finally, we report the *Final Rating* (0100, higher is better).

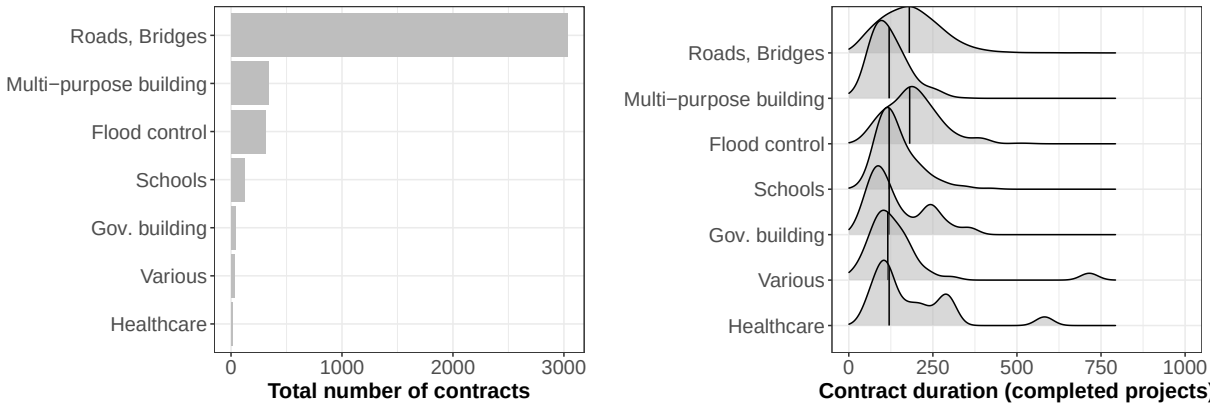
Figure 3 depicts the distribution of contracts by type and timing. We can see that the audits in our sample are concentrated on road and bridge projects. It also worth noting that media completion of projects is about 170 days. However, it is not uncommon that project take about a year for completion.

Empirical strategy: Regression Discontinuity Design

Our outcome of interest (e.g., contract value for politically connected/disconnected firms) is likely related to some latent components of "maintaining a corrupt relationship" (or the ability to do so). The likelihood of winning an election plausibly depends on these same latent components. We

[10] Formally, $\text{Slippage}_{cv} \equiv 100 \times \frac{\text{Actual Progress}_{cv} - \text{Planned Progress}_{cv}}{\text{Planned Progress}_{cv}}$, where c indexes contracts and v the CPES visit.

Figure 3: Audit Data 2016-2019: length of duration by type of contract



Notes: Horizontal line indicates the median duration. The category "Various" includes land development projects or tourist infrastructure.

can imagine the final vote share of a candidate in a district as the sum of "pure" support plus the candidate's ability to generate corrupt support through procurement or other activities. To avoid overrepresentation of candidates with higher corrupt support in the treatment group (those who win), we restrict the sample to firms that had a previous political connection.

Accordingly, the unit of analysis is previously connected firm i in a congressional district j and the running variable is the difference in vote shares between the connected incumbent and the runner-up, which implies a victory cutoff of zero. The outcome is the value of contracts received by firm i in a congressional district j. Figure 12 in the appendix displays the distribution of contracts over time by previous and current political connections. The distributions follow roughly a similar pattern.

Therefore, we exploit close elections to determine political connection between a contractor/firm and the incumbent congressperson. Intuitively, the only reason why previously politically connected firms are still connected in a given district is because the incumbent narrowly won. Likewise, the only reason why previously connected firms are no longer connected with the legislator is because the incumbent narrowly lost. If political connections causally explain patterns of public works procurement, we should see its effect when such political connections perpetuate (or cease)

when the incumbent wins (or loses) close elections. Exploiting this variation, our main causal estimand is the local average treatment effect of politician-firm connection/disconnection on public procurement contracts around the cutoff c:

$$\tau_{\text{SRD}} \equiv E[Y_i(1) - Y_i(0)|X_i = c \tag{1}$$

Analysis of Treatment Effect Heterogeneity

To investigate how this effect changes during election seasons, our analysis of heterogeneity proceeds in two stages. First, as a descriptive exercise, we partition the data based on our time-period covariate (e.g., election year vs. non-election year) and estimate the Sharp RD treatment effect separately within each subgroup. This common empirical practice provides an initial assessment of how the treatment effect varies across different contexts (Calonico et al., 2025). The estimand for each subgroup is the Conditional Average Treatment Effect (CATE) for that specific time period. For a given time period s, this is formally defined as:

$$\tau_{\text{SRD} \mid \text{S=s}} = E[Y_i(1) - Y_i(0)|X_i = c, S_i = s] \tag{2}$$

Each of these subgroup-specific effects will be estimated using local polynomial regression with an MSE-optimal bandwidth and robust bias-corrected inference (Cattaneo and Titiunik, 2022). Second, while separate analyses are informative, we adopt a unified and more powerful approach for our main heterogeneity analysis, following the framework developed by Calonico et al. (2025). The formal parameter of interest is the *Conditional Average Treatment Effect (CATE) function*, $\kappa(w)$, defined as:

$$\kappa(w) = E[Y_i(1) - Y_i(0)|X_i = c, W_i = w] \tag{3}$$

This function represents the RD treatment effect conditional on a vector of pretreatment covariates w. We estimate the CATE function using a fully interacted local linear regression model. This model regresses the outcome on the treatment indicator, the running variable, the time-period indicators,

and all interactions between them (Calonico et al., 2025, Eq. 2.5). This single-equation approach allows us to directly estimate the treatment effect within each time period and the difference in effects between periods simultaneously.

Estimation, Inference, and Validation

For implementation of all analyses described above, we will follow Cattaneo and Titiunik (2022); Calonico et al. (2025) for estimation and inference in RD designs. First, the bandwidth h will be chosen using a data-driven, Mean Squared Error (MSE)-optimal procedure (Imbens and Kalyanaraman, 2012; Calonico et al., 2014). Second, because conventional least squares inference is invalid when using an MSE-optimal bandwidth due to the presence of misspecification bias, we will conduct all statistical inference using robust bias-corrected (RBC) methods. This procedure, developed by Calonico et al. (2014), adjusts the point estimate for bias and, critically, adjusts the standard errors to account for the additional variability from the bias-estimation step. This provides valid confidence intervals and p-values for both our overall and heterogeneous treatment effect estimates. Finally, we will conduct a series of validation and falsification tests to provide indirect empirical evidence supporting the plausibility of the core RD assumptions. These tests will include checking for continuity of pre-intervention covariates at the cutoff and performing a density test to check for endogenous sorting or "manipulation" of the running variable around the cutoff, as proposed by McCrary (2008).

Results

We first present descriptive evidence, before turning to the results of the RDD.

Descriptive Evidence: Political Budget Cycles

First, we examine descriptive evidence for budget cycles. Following standard practice in time series analysis (Chatfield and Xing, 2019), we partition calendar time (2004-2019) into five electoral cycles

of length $m = 36$ months. We then normalize monthly procurement by the cycle total so that y_t denotes the *relative* monthly share (bounded in $[0, 1]$). On this scale, an additive decomposition is appropriate, and we decompose the observed time series $y(t)$ into a smooth overall trend $T(t)$, a fixed seasonal component $S(t)$, and a random component $R(t)$:

$$y_t = T_t + S_t + R_t. \tag{4}$$

The additive decomposition is also substantively useful in the case of public procurement data. The overall trend in spending might be increasing or decreasing depending how much overall funding is available. Previous work on budget cycles also suggests that public spending might have a seasonal component that follows the electoral cycles. Lastly, spending might also subject to some randoms fluctuations in the timing of spending. The smooth trend T_t is estimated by a centered moving average over one full season. For even $m = 2k$ (our case $m = 36$), the centered average uses halfweights at the ends.[11] After detrending $d_t = y_t - \widehat{T}_t$, we compute raw seasonal indices for each withincycle position $j \in \{1, \ldots, m\}$,

$$\widetilde{S}_j \;=\; \text{mean}\{\, d_t : t \equiv j \pmod m \,\}, \tag{5}$$

normalize them to sum to zero, and map back to time:

$$\widehat{S}_j \;=\; \widetilde{S}_j - \frac{1}{m}\sum_{r=1}^{m} \widetilde{S}_r, \qquad \widehat{S}_t \;=\; \widehat{S}_{(t \bmod m)}. \tag{6}$$

The random component is

$$\widehat{R}_t \;=\; y_t - \widehat{T}_t - \widehat{S}_t. \tag{7}$$

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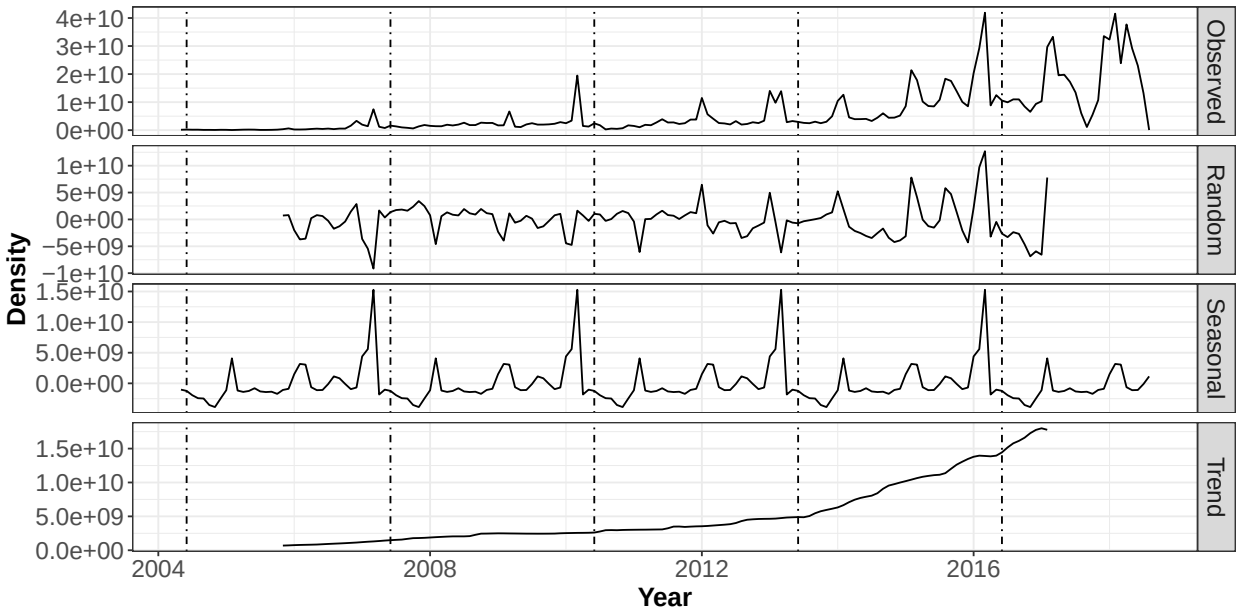
[11] Consequently $\widehat{T}_t$ is undefined within $m/2$ points of the series ends.

We treat one season as an electoral cycle of 36 months and assume a fixed seasonal profile across cycles (i.e., S_t depends only on position within the cycle).

Figure 4: Timing of Contracts Awarded and Elections, 2004-2019



Notes: Dashed vertical lines indicate congressional elections.

Figure 4 presents the monthly publicprocurement series and its additive decomposition. The y-axis shows the *relative* share of contract value awarded each month; the x-axis is time. As we can see, the trend component follows an upward cycle, indicating that the monetary volume of contracts increased throughout the study period. This is also reflected in the observed data. Most importantly, the seasonal component clearly follows an electoral cycle with a peak just before elections with minor peaks at the beginning and middle of the electoral cycle. The random component appears to be randomly distributed. Therefore, we find suggestive evidence for hypothesis 1.

However, this suggestive evidence alone does not help to distinguish between the signaling effect (i.e. the standard political budget cycles story), and clientelistic funding effect of elections (i.e. the incentive of legislators to favor nepotistic contractor firms to maximize kickbacks). In the

next section, we explore whether legislators favor politically connected firms during elections, and if so, why?

RDD Results: Do legislators favor politically connected firms?

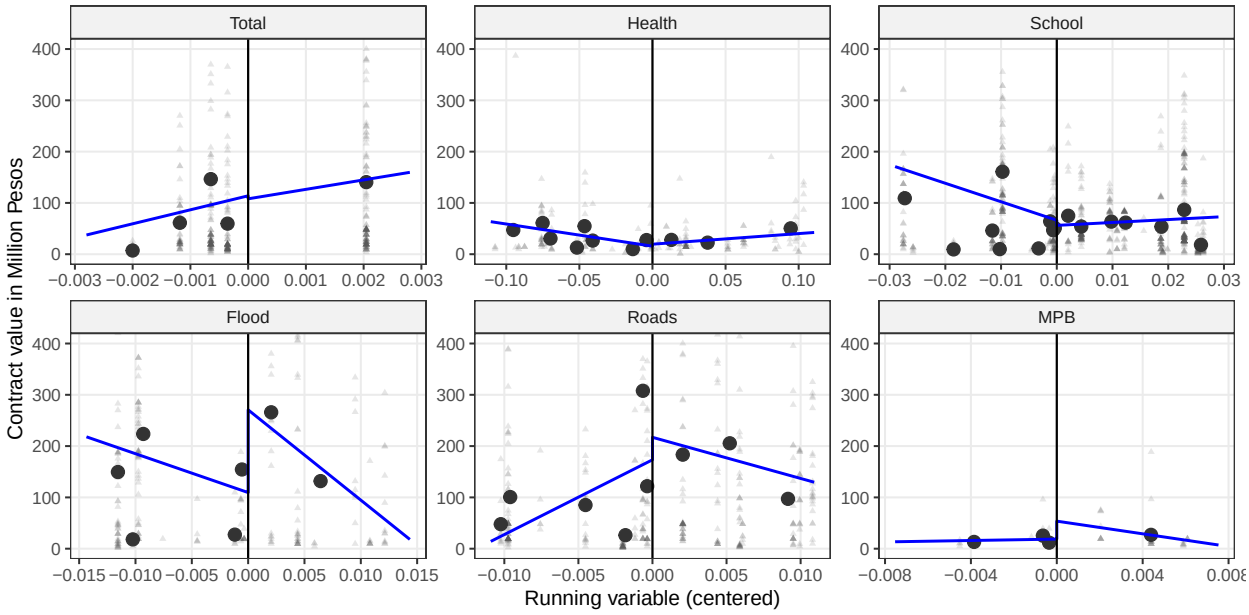
We now turn to the core empirical test of our hypotheses, using a close-election Regression Discontinuity (RD) design to estimate the causal effect of a continued political connection on public procurement. Our theory predicts not only that connected firms will be favored, but that this favoritism will be strategically channeled into projects that are harder for voters and the media to monitor, particularly in the run-up to an election.

Figure 5 provides the primary visual evidence for these claims. Each panel plots the contract value awarded in Million Philippine Pesos[12] to a previously connected firm against the incumbent legislator's vote share margin. The plots for "Flood Control," "Roads & Bridges," and "Multi-Purpose Buildings"–project types that we classified as harder to monitor–reveal a sharp, positive discontinuity at the zero threshold. The visual evidence is clearest for flood control project. This indicates that when a connected incumbent barely wins reelection, the firms they are connected with receive a significantly larger value of contracts for these specific projects compared to firms whose political connection was severed by a narrow electoral loss. On the other hand, the plots for "Health Facilities" and "School Buildings"–projects that we classified as more closely scrutinized by stakeholders–show a different pattern. For school buildings, there is a small negative discontinuity, suggesting connected firms are awarded fewer of these highly visible contracts. This visual evidence provides initial support for our hypothesis that politicians strategically allocate contracts based on both the firm's connection and the project's susceptibility to corruption.

To formally quantify the magnitude and statistical significance of the discontinuities observed in Figure 5, Table 2 presents the corresponding RDD regression estimates. Over the full

[12]One Million Philippine Pesos correspond roughly to 18,000 US Dollars.

Figure 5: RDD results, full sample



Notes: Each panel plots an RD around the cutoff at 0 on the running variable (aligned incumbent vote share, centered). Faint gray triangles show raw observations within the outcome-specific estimation window $[c - h_L,\ c + h_R]$. *Dark-gray points are binned means (bin selector* `qsmv`*), and the blue line shows local linear fits estimated with* `rdrobust` *(Calonico et al., 2017) using a triangular kernel. Bandwidths* (h_L, h_R) *are the MSE-optimal (Imbens and Kalyanaraman, 2012). The x-axis limits in each panel equal these bandwidth windows. The y-axis is capped at 400 (million pesos) for readability; the outcome is contract value in million pesos. Standard errors reported in the papers tables are robust bias-corrected and clustered at the election cycle-district level.*

sample period (top panel), the results confirm the visual patterns. First, across all periods and types of projects, connected firms are significantly more likely to win contracts that have higher valuation than their disconnected counterparts. Second, a continued political connection leads to a substantively large and statistically significant ($p < 0.001$) increase in contract values for low-monitoring projects: 165.7 million PHP for flood control systems, 44.3 million PHP for roads and bridges, and 35.8 million PHP for multi-purpose buildings. In stark contrast, for high-monitoring projects, the effect is either insignificant or even negative: connected firms receive 9.8 million PHP less for school buildings. These findings provide causal evidence for Hypothesis 2 (Political Connections) and Hypothesis 4 (Monitoring).[13]

Our theory further predicts that this favoritism will intensify in the run-up to an election (Hypothesis 3), when the need for campaign funds is most acute. The bottom two panels of Table 2 test this by splitting the sample into pre-election and post-election years. We find that in the pre-election year, the positive effect for flood control projects more than doubles to 388.7 million PHP, and the effect for roads and bridges increases to 75.8 million PHP. In the post-election year, these effects largely disappear or even reverse. For instance, connected firms receive 35.0 million PHP less for flood control projects in the year following an election. This temporal pattern supports the "Cycles of Nepotism" hypothesis: the strategic channeling of funds to connected firms through hard-to-monitor projects is a phenomenon driven by the electoral calendar, intensifying when the political and financial stakes are highest.

Interpreting the Magnitude: The estimated effects of a continued political connection are not only statistically significant but also represent substantively large sums of public money, highlighting the importance of the findings. We contextualize the magnitude of effects in two ways.

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[13]Appendix I depicts the full results and also includes conventional estimates. The substantive results remain unchanged.

Table 2: RDD Estimates of Retaining vs. Losing a Connection to a Legislator on Procurement Spending

	Total	Health	School	Flood	Roads	MPB
Full Period	6.2***	5.8	-9.8***	165.7***	44.3***	35.8***
	(0.9)	(5.8)	(1.0)	(0.8)	(0.0)	(0.0)
N	37025	871	9398	5240	10375	5057
N.effective	416	195	758	248	391	75
Optimal.bandwidth	0.003	0.111	0.029	0.014	0.011	0.008
Post-Election Year	-9.2***	-16.0*	-43.4***	-35.0*	25.2***	2.2*
	(1.0)	(7.9)	(0.9)	(14.7)	(4.8)	(1.1)
N	14962	422	3706	2281	4040	1903
N.effective	1112	75	359	311	746	512
Optimal.bandwidth	0.024	0.078	0.037	0.053	0.076	0.097
Pre-Election Year	89.8***	-306.1	-6.8***	388.7***	75.8***	18.3***
	(1.3)	(329.6)	(1.4)	(15.3)	(7.7)	(1.6)
N	12516	78	3016	1793	3673	2156
N.effective	708	50	154	103	952	206
Optimal.bandwidth	0.022	0.306	0.021	0.02	0.114	0.039

Notes. This table reports the results of retaining vs. losing a connection to a legislator on procurement spending in Million Pesos. One million Philippine pesos (PHP) is roughly 18,000 US dollars. Each column presents the results for a different outcome. The running variable is the difference in vote shares between the connected incumbent and the runner-up. All specifications use a triangular kernel and an MSE-optimal bandwidth selector (mserd). Point estimates are robust bias-corrected and standard errors are adjusted for the additional uncertainty from the bias-correction step (robust). Standard errors are clustered at the district-electoral cycle.

First, we can benchmark the effect size against the average public works budget for a congressional district. The Department of Public Works and Highways (DPWH) allocated approximately PhP 400 billion annually across the nation's 243 legislative districts in 2016. This implies an average annual public works budget of roughly 1.65 billion PHP per district. In this context, the 165.7 million PHP increase for flood control projects alone represents roughly 10% of a district's

entire average annual budget from the DPWH. This suggests that political connections can redirect a substantial fraction of a district's total infrastructure spending.[14]

Second, while we do not have data on the average cost of a congressional campaign in the Philippines, we can perform a "back-of-the-envelope calculation" to estimate the potential value of kickbacks, a practice our theory posits is used to finance campaigns. Drawing on anecdotal evidence, kickback rates (taripa) can be as high as 18% of the project cost, we can estimate the potential illicit funds generated. The combined increase in contract values for the three low-monitoring project types (flood control, roads, and multi-purpose buildings) for a connected firm at the threshold is 245.8 million PHP. An 18% kickback on this amount would yield approximately 44.2 million PHP in illicit funds for the legislator. Using the conversion rate provided in our paper (1 million PHP equals approx 18,000 USD), this translates to roughly US$796,000.

Robustness: Bandwidth Sensitivity To ensure that our main findings are not an artifact of a specific bandwidth choice, we probe the sensitivity of our RDD estimates. First, we re-estimate our main specification across a wide range of bandwidths, from a very narrow h=0.01 to a wider h=0.20, in steps of 0.005. The results, plotted in Appendix Figure I.4.1, demonstrate that our

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[14]Note that the 10% figure should be interpreted as a conservative estimate, particularly for the earlier years of our 2004-2019 sample. This is because government spending on public works has trended significantly upward over this period, a pattern visible in Figure 4. The 2016 DPWH budget provides a clear example of this rapid growth: the total agency budget more than doubled in just two years, increasing from 192 billion PHP in 2014 to a proposed 391 billion PHP for 2016. The proposed 2019 budget was even higher at over 544 billion PHP. By using a larger, more recent average budget as the denominator for our calculation, our 10% figure almost certainly understates the proportion of a district's budget captured by this effect in the earlier years of the study. See: https://www.dbm.gov.ph/wp-content/uploads/NEP2016/DPWH/DPWH.pdf.

central findings are robust. Specifically, the plot shows that the large, positive, and statistically significant effects for the low-monitoring project types–Flood Control, Roads & Bridges, and Multi-Purpose Buildings–are stable across nearly the entire range of bandwidths tested. The confidence intervals for these estimates remain well above zero, indicating that the finding of favoritism for these projects is not sensitive to how we define a "close" election. Similarly, the negative effect for School Buildings, a high-monitoring project, is consistently negative and statistically significant across most of the bandwidth range, reinforcing our conclusion that connected firms are steered away from these contracts. The effect for 'Health Facilities' is not statistically significant at any bandwidth, confirming this is likely a null result. Comparing effects across periods and types, the results suggests that the strongest and most robust effects appear for low-monitoring projects specifically in the pre-election periodprovides, providing evidence for the mechanisms outlined in our theory.

Welfare costs

Our theory posits that the favoritism shown to connected firms, driven by the need for campaign kickbacks, should results in lower-quality infrastructure (Hypothesis 5). To test this, we turn to detailed audit data from the Constructors Performance Evaluation System (CPES), focusing on the 2016 and 2019 electoral cycles. The data provides objective measures of project quality, which we average by firm within each District Engineering Office (DEO).[15] To merge firm names across names we rely on the fuzzy string matching algorithm and train it on our data (Kaufman and Klevs, 2022).[16]

[15]Note also that a unique project can be evaluated multiple times during its implementation.

[16]For details, please refer to Appendix F.1.

Table 3: RDD Estimates of Retaining vs. Losing a connection to a Legislator on Welfare Outcome, 2016-2019 Cycles

	Slippage	Neg. Slip.	Overall	Quality	Materials	Time
Full Period	-10.2***	0.3***	0.3	-1.5***	2.3***	-5.4***
	(1.0)	(0.0)	(0.3)	(0.3)	(0.3)	(0.6)
N	12458	12472	12472	12472	12472	12472
N.effective	940	1018	3917	1726	3701	1611
Optimal.bw	0.027	0.03	0.152	0.07	0.145	0.057
Post-Election Year	-7.8***	0.1**	0.5	4.2***	-0.1	5.0***
	(1.0)	(0.0)	(0.6)	(0.7)	(0.5)	(1.1)
N	3334	3379	3379	3379	3379	3379
N.effective	357	692	692	309	309	187
Optimal.bw	0.041	0.081	0.079	0.032	0.04	0.02
Pre-Election Year	-10.6***	0.6***	-0.1	-11.2***	20.6***	-24.6***
	(2.3)	(0.1)	(1.0)	(1.6)	(0.4)	(2.2)
N	2632	2632	2632	2632	2632	2632
N.effective	282	112	589	112	112	112
Optimal.bw	0.057	0.018	0.118	0.014	0.015	0.015

Notes. This table reports the results of retaining vs. losing a connection to a legislator on average welfare outcomes within districts. Each column is a separate RD. Outcomes: Mean Slippage (pp), N Negative Slippage (count of reporting periods), Overall Rating (0100), and CPES subcomponents Quality (0-40 during project implementation /0-50 after completion), Materials (0-30), and Time (0-15 during project implementation, 0.20). Higher scores refer to better outcomes. Running variable: vote-share margin between the connected incumbent and the runner-up. Triangular kernel with MSE-optimal bandwidth. Robust bias-corrected (RBC) point estimates with standard errors in parentheses. N is full sample; N.effective is within the optimal bandwidth. SEs clustered at the districtelectoral cycle

The results, presented in Table 3, reveal that the welfare costs associated with political connections are concentrated in the pre-election period, aligning with our theory of "cycles of nepotism." When examining the full sample period, the results appear mixed. On average, projects by connected firms have significantly worse schedule slippage, worse quality (a negative coefficient of -1.5), and worse time managemnt (-5.4). At the same time, however, they receive a significantly

better rating on the materials they use (+2.3). At face value, the pattern suggests that connected firms more easily secure documentation–and test-based approvals on inputs even as delivered works fall short on execution and timing.

When we split the sample between pre- and post-election years, we see that the effects are more pronounced in the pre-election period. A continued political connection causes a 10.6 percentage point increase in schedule slippage, and the audit scores show that these projects suffer from significantly worse workmanship (Quality, -11.2) and greater time delays (Time, -24.6). In contrast, during the post-election year, the negative effects are reversed: the score for Quality becomes positive and significant (+4.2), as does the score for Time (+5.0), while the effect on Materials becomes statistically insignificant. The temporal variation is a key finding. It demonstrates that the decline in quality is not a permanent feature of connected firms, but rather suggests a strategic, cyclical behavior that manifests precisely when the electoral incentives for corruption are highest.

Interpreting the Magnitude The statistical findings suggest substantial real-world costs. First, the pre-election delays are not trivial. To put the effect size in perspective, given the median project duration of approximately 170 days in the audit sample, a 10.6 percentage point slippage translates to an average delay of about 18 days for projects awarded to connected firms before an election. For citizens awaiting a new road or flood control system, this represents a significant delay in accessing essential public services

Second, the findings suggest a significant waste of public funds. The lower scores on quality and time in the pre-election period indicate that citizens are not receiving the quality of infrastructure they could have. The fact that these welfare costs manifest most strongly just before an electionprecisely when politicians need campaign fundsprovides some causal evidence for the "cycles of nepotism" that undermine public procurement.

Third, the results also present a puzzle: projects by connected firms are of worse quality (-11.2) and have worse delays (-24.6), but they score significantly better on materials (+20.6). Two

mechanisms may reconcile this pattern. First, higher material scores may not necessarily imply fewer rents. Passing tests can coexist with inflated unit prices or supplier rebates. Indeed, recent reports suggests that firms often inflate cost estimates for materials compared market prices (Cruz, 2025). Second, strategic politicians may manage the risk of detection. Materials compliance is verified through laboratory tests, specifications, and traceable records, and CPES rules mechanically set the materials score to zero when core tests fail. Failing creates hard evidence. By contrast, shortfalls in workmanship and schedule are noisier, might be easier to rationalize ex post (weather, utilities), and many defects only become salient after use (e.g., ponding, cracking). When electoral returns to diversion are high, connected firms optimally tilt effort toward documentable compliance (inputs/tests/paperwork) and away from noisier measure (execution quality and schedule). Clean paperwork shields the transaction while effort is economized on labor-intensive execution and project management, depressing workmanship and timing. Lastly, it is also worth noting that the final rating is statistically indistinguishable from zero on average, consistent with a strategic offsetting of weights across dimensions.

Conclusion

Politicians in developing democracies face a complex challenge: how to secure electoral support and campaign funds while avoiding public scrutiny and maintaining the appearance of effective governance. This study documents one significant opportunity for corruption that arises from the cycles of nepotism in public procurement, particularly during the run-up to elections. We show that incumbents are incentivized to award contracts to politically connected firms in exchange for kickbacks, thereby masking a corruption cycle beneath the surface of the political business cycle.

Examining all public works contracts in the Philippines from 2004 to 2019, we find that politically connected firms benefit disproportionately in terms of contract value and are more likely to be awarded projects that are difficult to monitor, such as flood control systems. Conversely, these firms are less likely to secure contracts for closely scrutinized projects like school buildings and health facilities. The quality of projects awarded to connected firms is generally lower, especially those implemented just before elections, highlighting the welfare costs associated with political connections in public procurement.

These findings align closely with the realities in many developing democracies, where electoral incentives and patronage systems drive corruption in public procurement. Our study reveals that incumbents navigate the dual pressures of needing to demonstrate public service provision while simultaneously engaging in corrupt practices to secure financial gains and electoral support. This dual dynamic often leads to lower-quality public projects and significant welfare losses for citizens.

The implications of this study extend beyond the Philippines. Public procurement corruption is a widespread issue in many developing democracies with similar patronage systems. Our findings suggest that politicians in these contexts strategically use their discretion over public procurement to maintain political connections and secure kickbacks, particularly during election periods. This behavior undermines the quality of public service provision and erodes public trust in government institutions.

Understanding the mechanisms through which electoral incentives and political connections drive corruption in public procurement can inform policy interventions aimed at mitigating these practices. Future research can explore additional strategies to reduce corruption, such as enhancing transparency in the procurement process, strengthening audit mechanisms, and increasing public awareness and scrutiny.

From a policy perspective, recognizing the patterns of corruption cycles in public procurement is crucial for developing effective anti-corruption measures. Policymakers must identify and address the underlying incentives that drive corrupt practices, particularly in the context of electoral cycles. By implementing reforms that promote accountability and transparency, governments can improve the quality of public service provision and restore public trust.

References

Akcigit, Ufuk , Salomé Baslandze, and Francesca Lotti. Connecting to power: political connections, innovation, and firm dynamics. Technical report, National Bureau of Economic Research, 2018. 7

Alesina, Alberto , Nouriel Roubini, and Gerald D Cohen. *Political cycles and the macroeconomy*. MIT press, 1997. 6

Arcilla, Carlo A. . P350-b flood control project flawed. *Inquirer*, 2015. URL https://opinion.inquirer.net/89953/p350-b-flood-control-project-flawed. 12

Avis, Eric , Claudio Ferraz, Frederico Finan, and Carlos Varjão. Money and politics: The effects of campaign spending limits on political competition and incumbency advantage. Technical report, National Bureau of Economic Research, 2017. 6

Barreca, Alan I , Jason M Lindo, and Glen R Waddell. Heaping-induced bias in regression-discontinuity designs. *Economic Inquiry*, 54(1):268–293, 2016. 15

Barro, Robert J . The control of politicians: An economic model. *Public choice*, pages 19–42, 1973. 1, 5

Boas, Taylor C , F Daniel Hidalgo, and Neal P Richardson. The spoils of victory: Campaign donations and government contracts in brazil. *The Journal of Politics*, 76(2):415–429, 2014. 7, 8, 13

Bosio, Erica , Simeon Djankov, Edward Glaeser, and Andrei Shleifer. Public procurement in law and practice. *American Economic Review*, 112(4):1091–1117, 2022. 9

Brender, Adi and Allan Drazen. Political budget cycles in new versus established democracies. *Journal of Monetary Economics*, 52(7):1271–1295, 2005. 6

Calonico, Sebastian , Matias D Cattaneo, and Rocio Titiunik. Robust nonparametric confidence intervals for regression-discontinuity designs. *Econometrica*, 82(6):2295–2326, 2014. 20

Calonico, Sebastian , Matias D Cattaneo, Max H Farrell, and Rocio Titiunik. rdrobust: Software for regression-discontinuity designs. *The Stata Journal*, 17(2):372–404, 2017. 24

Calonico, Sebastian , Matias D Cattaneo, Max H Farrell, Filippo Palomba, and Rocio Titiunik. Treatment effect heterogeneity in regression discontinuity designs. *arXiv preprint arXiv:2503.13696*, 2025. 19, 20

Canen, Nathan and Leonard Wantchekon. Political distortions, state capture, and economic development in africa. *Journal of Economic Perspectives*, 36(1):101–24, 2022. 1, 6, 8

Cattaneo, Matias D and Rocio Titiunik. Regression discontinuity designs. *Annual Review of Economics*, 14(1):821–851, 2022. 19, 20

Cattaneo, Matias D , Michael Jansson, and Xinwei Ma. Manipulation testing based on density discontinuity. *The Stata Journal*, 18(1):234–261, 2018. 15

Chatfield, Chris and Haipeng Xing. *The Analysis of Time Series: an Introduction with R*. Chapman and hall/CRC, 2019. 20

Claessens, Stijn , Erik Feijen, and Luc Laeven. Political connections and preferential access to finance: The role of campaign contributions. *Journal of Financial Economics*, 88(3):554–580, 2008. 6

Co, Edna . The long and winding road to infrastructure development and reform. *Philippine Journal of Public Administration*, 54(2):153–166, 2010. 10

Cooper, Jasper . Political corruption cycles in democracies and autocracies: Evidence from micro-data on extortion in west africa. *Quarterly Journal of Political Science*, 16(3):285–323, 2021. 1, 6

Cruz, James Patrick . Dpwh cuts cost of construction materials. *Rappler*, 2025. URL https://www.rappler.com/philippines/dpwh-cuts-construction-materials-cost/. 31

Cruz, Jerome Patrick , Carmen Phanuelle Delgra, Jose Miguelito Enriquez, and Ronald U. Mendoza. Governing the 'golden age of infrastructure': Build, Build, Build Through an Accountability Perspective, 2019. 10

Da Silveira, Bernardo S and Joao MP De Mello. Campaign advertising and election outcomes: Quasi-natural experiment evidence from gubernatorial elections in brazil. *The Review of Economic Studies*, 78(2):590–612, 2011. 6

Drazen, Allan and Marcela Eslava. Electoral manipulation via voter-friendly spending: Theory and evidence. *Journal of development economics*, 92(1):39–52, 2010. 6

Faccio, Mara . Politically connected firms. *American economic review*, 96(1):369–386, 2006. 13

Fearon, James D . Electoral accountability and the control of politicians: selecting good types versus sanctioning poor performance. *Democracy, accountability, and representation*, 55:61, 1999. 1, 5

Ferejohn, John . Incumbent performance and electoral control. *Public choice*, pages 5–25, 1986. 1, 5

Figueroa, Valentín . Political corruption cycles: High-frequency evidence from argentina's notebooks scandal. *Comparative Political Studies*, 54(3-4):482–517, 2021. 1, 6

Finan, Frederico and Maurizio Mazzocco. Electoral incentives and the allocation of public funds. *Journal of the European Economic Association*, 19(5):2467–2512, 2021. 8

Golden, Miriam and Brian Min. Distributive politics around the world. *Annual Review of Political Science*, 16:73–99, 2013. 6

Gotinga, JC . Lacson bares p68-billion skeleton projects in 2021 budget, pushes realignment. *Rappler*, 2020. URL https://www.rappler.com/nation/lacson-bares-billions-skeleton-infrastructure-projects-2021-budget-pushes-realignmer 12

Gulzar, Saad , Miguel R Rueda, and Nelson A Ruiz. Do campaign contribution limits curb the influence of money in politics? *American Journal of Political Science*, 2021. 7, 13

Hicken, Allen . Clientelism. *Annual Review of Political Science*, 14:289–310, 2011. 6

Holland, Alisha C and Will Freeman. *Contract clientelism: How infrastructure contracts fund vote-buying*. Number 2021/155. WIDER Working Paper, 2021. 1, 6

Imbens, Guido and Karthik Kalyanaraman. Optimal bandwidth choice for the regression discontinuity estimator. *The Review of Economic Studies*, 79(3):933–959, 2012. 20, 24

Kaufman, Aaron R and Aja Klevs. Adaptive fuzzy string matching: How to merge datasets with only one (messy) identifying field. *Political Analysis*, 30(4):590–596, 2022. 28, 52, 53

Khwaja, Asim Ijaz and Atif Mian. Do lenders favor politically connected firms? rent provision in an emerging financial market. *The Quarterly Journal of Economics*, 120(4):1371–1411, 2005. 13

Larreguy, Horacio , John Marshall, and James M Snyder Jr. Publicising malfeasance: When the local media structure facilitates electoral accountability in mexico. *The Economic Journal*, 130 (631):2291–2327, 2020. 1, 6

Mangahas, Malou and Karol Ilagan. Dpwh under duterte: Corruption, politics, slippage mar many projects. *Philippine Center for Investigative Journalism*, 2018. URL https://pcij.org/article/1401/dpwh-under-duterte-corruption-politics-slippage-mar-many-projects. 11, 12, 48

Mangahas, Malou , Tita C. Valderama, and Karol llagan. Obscure firms fly high, bag huge dpwh deals. *Philippine Center for Investigative Journalism*, 2009. URL https://old.pcij.org/blog/2009/04/23/obscure-firms-fly-high-bag-huge-dpwh-deals. 47

Marshall, John . Tuning in, voting out: news consumption cycles, homicides, and electoral accountability in mexico. Technical report, Working paper, 2020. 1, 6

McCrary, Justin . Manipulation of the running variable in the regression discontinuity design: A density test. *Journal of Econometrics*, 142(2):698–714, 2008. 15, 20, 55

Mironov, Maxim and Ekaterina Zhuravskaya. Corruption in procurement and the political cycle in tunneling: Evidence from financial transactions data. *American Economic Journal: Economic Policy*, 8(2):287–321, 2016. 1, 6

Pierskalla, Jan H and Audrey Sacks. Unpaved road ahead: The consequences of election cycles for capital expenditures. *The Journal of Politics*, 80(2):510–524, 2018. 1, 6

Powell, Eleanor Neff and Justin Grimmer. Money in exile: Campaign contributions and committee access. *The Journal of Politics*, 78(4):974–988, 2016. 6

Ramos, Christia Marie . House panel to call more DPWH execs over flood control scam. *Inquirer*, Jan 2019. URL https://newsinfo.inquirer.net/1070015/house-probe-dpwh-flood-control-scam. 15

Rogger, Daniel and Ravi Somani. The persistent impact of electoral incentives on the quality of infrastructure. *Working Paper*, 2021. 1, 7

Rogoff, Kenneth . Equilibrium political budget cycles. *The American Economic Review*, 80(1):21, 1990. 1, 5

Rogoff, Kenneth and Anne Sibert. Elections and macroeconomic policy cycles. *The Review of Economic Studies*, 55(1):1–16, 1988. 1, 5

Roxas, Pathricia Ann V. . Ombudsman to probe flood control scam, says andaya. *Inquirer*, 2019. URL https://newsinfo.inquirer.net/1070917/ombudsman-to-probe-flood-control-scam-says-andaya. 12

Shi, Min and Jakob Svensson. Political budget cycles: Do they differ across countries and why? *Journal of Public Economics*, 90(8-9):1367–1389, 2006. 6

Sukhtankar, Sandip . Sweetening the deal? political connections and sugar mills in india. *American Economic Journal: Applied Economics*, 4(3):43–63, 2012. 1, 13

Vicente, Pedro C and Leonard Wantchekon. Clientelism and vote buying: lessons from field experiments in african elections. *Oxford Review of Economic Policy*, 25(2):292–305, 2009. 6

A Bidding and Award Procedures in public works procurement in the Philippines

Source: https://www.dpwh.gov.ph/dpwh/business/procurement/civil_works/baprocedures

1. *Preparation of Project Procurement Management Plan (PPMP).* The first step is to prepare a Project Procurement Management Plan or PPMP. This document outlines the entire procurement process, from pre-procurement to post-award. It includes the procurement schedule, budget, and other important details.
2. *Pre-procurement conference.* Once the PPMP is approved, the procuring entity will hold a pre-procurement conference. This is to inform all interested bidders of the project details and requirements.
3. *Advertisement / Posting.* The next step is to advertise or post the project. This is usually done through print, radio, or television media. The advertisement must include the project description, eligibility requirements, and other important details.
4. *Application for Eligibility / Expression of Interest.* Interested bidders must then submit their applications for eligibility or expression of interest. This is to ensure that only qualified bidders will be allowed to participate in the bidding process.
5. *Eligibility evaluation, including notification of eligible and ineligible bidders.* The procuring entity will then evaluate the applications and issue a notice of award to the eligible bidders. Those who are not qualified will be notified accordingly.
6. *Issuance of bid documents.* The procuring entity will then issue the bid documents to the eligible bidders. These documents will contain the instructions on how to prepare and submit their bids.
7. *Site inspection.* Interested bidders are then given the opportunity to inspect the project site. This is to ensure that they have a clear understanding of the project requirements.

8. *Pre-bid conference.* A pre-bid conference will be held to answer any questions that the bidders may have. This is also an opportunity for the bidders to clarify any points that they are unclear about.
9. *Submission / Opening of bids.* Bidders will then submit their sealed bids on the specified date and time. The bids will be opened in the presence of the bidders or their representatives.
10. *Bid Evaluation.* The procuring entity will then evaluate the bids and award the contract to the bidder with the lowest responsive bid.
11. *Post-qualification. The winning bidder will then be required to submit additional documents for post-qualification.* This is to ensure that they are able to meet the requirements of the contract.
12. *BAC Deliberation and Approval of Resolution of Award.* The procuring entity's Bids and Awards Committee will then deliberate on the award and issue a resolution of award.
13. *Contract Preparation and Approval.* The winning bidder will then prepare and sign the contract. The contract will then be reviewed and approved by the procuring entity.
14. *Issuance of Notice to Proceed.* Once the contract is approved, the procuring entity will issue a notice to proceed. This will signify the start of the project implementation.

B Slippage

Source: https://niacombiscon.tripod.com/IP021.html

C CPES: Criteria for Evaluation

Source: https://www.gppb.gov.ph/laws/laws/CPESGuidelines2011/09Amended%20Guidelines.pdf

Table 4: Evaluation criteria and weights; higher values refer to better quality.

	During Construction	Upon Completion
Quality (Workmanship)	0.40	0.50
Materials	0.30	0.30
Time	0.15	0.20
Facilities	0.03	–
Environmental, Safety, Health	0.07	–
Resources Deployment	0.05	–
Total	1.00	1.00

C.1 Quality (Workmanship)

Workmanship refers to the quality and quantity of on-going and/or completed items of work, which are verifiable, in accordance to approved plans and specifications. This aspect covers the utilization of the correct methodology needed in producing the desired quantity and quality of work. In rating this aspect, efficiency of methodology shall be considered. In assessing/evaluating workmanship, the following procedures shall be observed: a) before going to the project site, the CPE shall identify the location of on-going and/or completed items of works based on the approved plan, and b) from the location identified, the CPEs shall select spots randomly for evaluation. The combined area of spots shall not be less than 10% of the on- going and/or completed items of works. Checklists for Workmanship for roads and bridges, housing and building, ports and harbor, irrigation, flood control, power transmission line, substation, mooring facilities for power barges and diesel power plant projects are presented in Annex 2. Refer to Section 11.4a hereof in determining the rating for workmanship. In case there are on-going or completed additional works or variation orders, which are verifiable, at the time of inspection, these shall be rated if said variations were approved by

the Head of the Procuring Entity. Checks include conformance to plans, tolerances, and approved methods; absence of defects (cracks, honeycombing, misalignment, poor compaction/finishes).

How scored: By "spots" with strict rules: one major defect wipes that spot; if < 50% of spots comply for an item, the item = 0.

Typical failures: may include uneven surfaces, ponding, cracks, honeycomb, misaligned railings/curbs, poor jointing/finishes, inadequate compaction.

C.2 Materials

To impress upon the constructors the importance of materials in producing the desired quality of an item of work, this aspect is viewed separately from workmanship as another factor in assessing performance. Materials means the quality, quantity and type of construction materials including asphalt and ready-mixed concrete, and components supplied by entities other than the constructors as required in the contract. The constructor gets the full rating of 0.30 for materials in a particular item of work if he complies with all the applicable indicators in the checklist for materials in Annex 3. Refer to Section 11.4b in rating materials. ***Annex 3*** **demands the following checks:**

- Passed required lab tests/certifications (PNS/ICC), correct type/brand
- Proper storage/handling
- Segregation of non-conforming materials
- Evidence that specified materials were actually used
- Traceable records (tickets, test results, certificates)

How scored: 5 binary checks each visit; if #1 fails, materials rating = 0.

Typical failures: include missing/failed tests, off-spec cement/asphalt, undersized rebar, poor storage (wet cement, rusty steel), or paperwork gaps.

Alternative construction materials used by the constructor may also be considered by the CPE in rating the materials aspect, provided there are supporting documents consisting of the approval by the owner's authorized personnel and test results. If a work item does not require the use of materials (e.g., demolition of existing structure, excavation, or scraping), the constructor

automatically gets 0.30 in this aspect provided he gets the full rating in the workmanship aspect for such work item. However, if the particular item of work was not done or inadequately complied with, the rating for material shall be 0.00. Furthermore, when a particular item of work was not rated since it is no longer visible and cannot be verified, the material aspect for such item of work shall not be rated. Materials for on-going or completed additional works, which are verifiable, at the time of inspection shall also be rated provided said variations were approved by the Head of the Procuring Entity. Unlike the workmanship and materials aspects which are evaluated on a per item of work, the following four (4) aspects shall be appraised during each visit without particular attention to the work items completed/being completed by the constructor.

C.3 Time

This refers to the over-all accomplishment in accordance with the approved PERT/CPM or approved program of work. The constructor gets a full rating of 0.15 if he is on or ahead of schedule but gets a lower score if there is any delay or slippage attributable to his fault. The score shall depend on the percentage of delay as reflected in the checklist for time aspect presented in Annex 4. Refer to Section 11.4c in rating the time aspect. For contracts with no materials or materials are supplied by the owner, the computation of score for Time aspect is presented in Annex 4 - For contracts with no materials or materials are supplied by the owner. In case there are on-going or completed additional works or variation orders, time would be rated based on the effective PERT CPM and S-Curve approved by the Head of the Procuring Entity. In case it has not yet been approved by the Head of the Procuring Entity, time shall be rated based on the latest approved PERT CPM and S-curve.

C.4 Facilities

The facilities referred to are those set up by the constructor prior to the actual start of the project and maintained during the construction period. This aspect covers the provision of project sign-board, sanitary and/or field and on-site office facilities which includes the surveying, transport and

communication, testing and other equipment, appliances, utensils and other items as required in the contract. The constructor merits a full rating of 0.03 if he complies with the indicators enumerated in the checklist for facilities presented in Annex 5. Refer to Section 11.4d in rating this aspect. In case the contract does not indicate any provision for camp facilities, to be checked are the sanitary, field and on-site office facilities provided by the constructor for its technical staff and workers.

C.5 Environmental, Safety, Health

The constructor must learn to care for his environment and must try his best not to pollute during project prosecution. He must observe safety and health measures as required in the general and/or special contract provisions, and safeguard the lives of his workers and those of the general public. The constructor gets a full rating of 0.07 if he complies with the applicable indicators enumerated in the checklist for ESH presented in Annex 6. Refer to Section 11.4e in rating this aspect.

C.6 Resources Deployment

In this aspect, to be evaluated is the constructors ability to deploy on time, based on the approved PERT/CPM or program of work, the required/pledged facilities and resources such as materials, equipment in good running condition and manpower. Refer to Section 11.4f in rating this aspect. Resources deployment checklist is presented in Annex 7. Should there be on-going additional works or variation orders at the time of inspection not yet covered by approved variation order, the provision on this matter as stated in Section 7.1-c shall likewise be adopted.

D Corruption in Public Procurement

Figure 6: Example: Credit claiming for road projects.

Notes: 'Arroyo seemed so obsessed with roads that her first budget secretary, Emilia T. Boncodin, recalls: "You could point to a road anywhere on the map of the Philippines, and she could tell you its name. She had memorized it all." According to Boncodin, the president had told her first Cabinet that she wanted to roll out networks of roads and bridges across the nation so that on weekends, she could visit the towns and provinces and while there, preside over project inaugurals.' Source: Mangahas et al. (2009)

Figure 7: Example: Outsourcing.

Notes: 'Backhoe and equipment of Genesis 88 Construction owned by Presidential Assistant for Sports Glenn Escandor at the site of a project supposed to be implemented by Three W Builders. DPWH has no record of Genesis 88 being awarded this project. PCIJ Photo by John Reiner Antiquerra' Source: Mangahas and Ilagan (2018)

E Descriptive Statistics

E.1 Summary Statistics: All contracts

Table 5: Summary Statistics

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
votes	56354	100726.538	39408.609	3129	76152	127730	287118
proclaimed_year	146751						
...	124613	84.9%					
... 2007	10403	7.1%					
... 2008	62	0%					
... 2010	5120	3.5%					
... 2013	6553	4.5%					
rank_votes	56354	1.18	0.384	1	1	1	2
winner	50678	0.912	0.284	0	1	1	1
runner_up	56354	0.18	0.384	0	0	0	1
underscore	146751						
... _	146751	100%					
gender	146751						
...	90397	61.6%					
... F	17714	12.1%					
... M	38640	26.3%					
victory_margin	56354	0.287	0.298	-0.352	0.084	0.441	0.986
female	56354	0.314	0.464	0	0	1	1
incumbent	56354	1	0	1	1	1	1
forcing_var	56354	0.253	0.327	-0.88	0.023	0.425	0.986
Registry_Year	146506	2013.223	3.576	2001	2011	2016	2018
Registry_Month	146506	6.915	3.746	1	3	11	12
Registry_Day	146506	16.319	8.492	1	9	24	31
amount	146506	7277431.381	11440363.187	1836.88	1068989.845	8771182.842	237186650.31
Election_Cycle	146506	4.619	1.25	1	4	6	6
Notice_Year	146506	2013.439	3.612	2000	2011	2016	2018
Notice_Month	146506	5.866	3.587	1	3	9	12
Notice_Day	146506	16.09	8.746	1	9	24	31
amount_road	42473	8964763.117	13449008.126	18823.279	1432875	9774585	237186656
amount_school	33373	6819581.199	8942100.475	1836.88	1862299	8218532.5	219895264
amount_localroad	14506	4424688.587	6449076.858	29391.68	977724.531	4800729	117292600
amount_health	2773	3464053.01	6318633.899	89000	1151631.75	2985428	117558640
amount_mpb	21136	2331740.396	3538361.898	1920.32	771079.672	2791732.25	96907528
amount_flood	19861	11691970.259	14932874.024	1979.59	1701299.25	17601652	138236480
alignedprev	146506	0.566	0.496	0	0	1	1
cycle	145186						
... Cycle-1	9281	6.4%					
... Cycle-2	18886	13%					
... Cycle-3	27867	19.2%					
... Cycle-4	46425	32%					
... Cycle-5	42727	29.4%					
aligned_current	56354	0.791	0.406	0	1	1	1

Table 6: Summary Statistics: RDD sample

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
votes	37025	103400.372	38925.019	3813	80283	130677	248491
proclaimed_month	82872						
...	69910	84.4%					
... 5	12925	15.6%					
... 6	37	0%					
proclaimed_year	82872						
...	69910	84.4%					
... 2007	6297	7.6%					
... 2010	3067	3.7%					
... 2013	3598	4.3%					
rank_votes	37025	1.167	0.373	1	1	1	2
winner	32969	0.936	0.246	0	1	1	1
runner_up	37025	0.167	0.373	0	0	0	1
underscore	82872						
... _	82872	100%					
gender	82872						
...	45847	55.3%					
... F	12039	14.5%					
... M	24986	30.2%					
victory_margin	37025	0.296	0.307	-0.352	0.086	0.458	0.986
female	37025	0.325	0.468	0	0	1	1
incumbent	37025	1	0	1	1	1	1
forcing_var	37025	0.26	0.338	-0.88	0.026	0.441	0.986
Registry_Year	82872	2013.973	2.996	2002	2012	2016	2018
Registry_Month	82872	7.114	3.724	1	3	11	12
Registry_Day	82872	16.35	8.497	1	9	24	31
amount	82872	7942823.781	12129334.08	1920.32	1331777.75	9395005.045	237186650.31
ParticipationExtent	82872	1	0.003	0.49	1	1	1
Election_Cycle	82872	4.927	1.032	3	4	6	6
Notice_Year	82872	2014.199	3.03	2007	2012	2017	2018
Notice_Month	82872	5.942	3.612	1	3	9	12
Notice_Day	82872	15.832	8.715	1	8	23	31
amount_road	23380	9776025.132	14365661.791	18823.279	1855472.25	11148175.75	237186656
amount_school	19554	7144860.89	9368217.451	21546	1896912.281	8655838.5	219895264
amount_localroad	8017	4657306.997	6235655.599	29391.68	1444893	4824371	82431560
amount_health	1759	3468191.717	6345309.055	97810.398	1178447.688	2954422.25	117558640
amount_mpb	11478	2486266.591	3644532.889	1920.32	945766.047	2846907.625	96521696
amount_flood	12303	12792649.537	15459890.772	1979.59	1882186.438	18571041	124533728
alignedprev	82872	1	0	1	1	1	1
cycle	82872						
... Cycle-2	10544	12.7%					
... Cycle-3	15796	19.1%					
... Cycle-4	25713	31%					
... Cycle-5	30819	37.2%					
aligned_current	37025	0.796	0.403	0	1	1	1

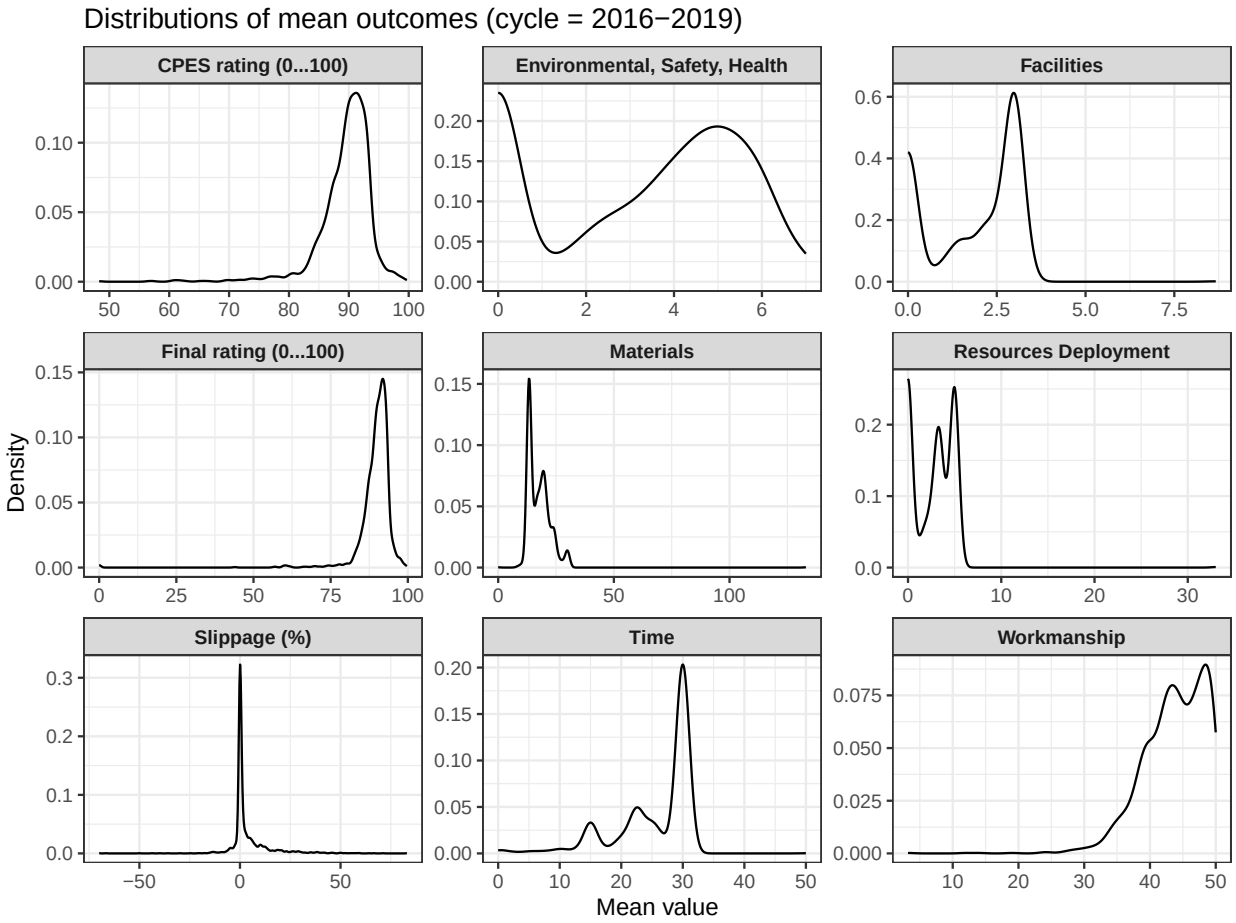


Figure 8: Density of audit outcomes averaged by district.

E.2 Descriptive Statistics: Audit Outcomes

F Data

F.1 Firm Matching: Adaptive Fuzzy String Matching

To match companies names across the contract and audit database, we implement daptive Fuzzy String Matching (AFSM) as introduced by Kaufman and Klevs (2022). AFSM frames string linkage as a supervised learning problem over a rich set of stringdistance features, returning for each candidate pair a probability Pr(match) $\in [0, 1]$. We follow the authors implementation, training a random forest classifier on labeled examples and applying the fitted model to all cross-dataset pairs.

Preprocessing. To minimize spurious heterogeneity, we standardize organization names in both sources by (i) removing punctuation and non-alphanumeric characters, (ii) lowercasing, and (iii) collapsing whitespace. Where appropriate, we harmonize common tokens (e.g., hyphens, spacing) and deduplicate within each source. This yields two cleaned name vectors for matching.

Feature construction and learner. For each pair (s_1, s_2) we compute a feature vector comprising character- and token-based distances and similarities (e.g., Levenshtein and Damerau edit distances, JaroWinkler, cosine/Jaccard on character n-grams), phonetic encodings (e.g., Soundex-like features), and length/prefix indicators. We then fit a random forest via `ranger` with probabilistic output; the model predicts $\widehat{p}(s_1, s_2) = \Pr(\text{match} \mid \text{features})$.[17]

Blocking and scalability. Because a full cross-product can be large, we employ simple batching: the CPES name vector is partitioned into slices of size ≈ 100, and each slice is scored against all unique HR names. This reduces memory pressure without altering the scoring rule.

---

[17]Code adapted from the authors reference implementation at https://github.com/aaronrkaufman/stringmatch.

Selection rule. For each CPES name c, we take the *top-1* HR candidate

$$h^\star(c) \;=\; \arg\max_{h \in \mathcal{H}} \widehat{p}(c, h),$$

and record its associated score $\widehat{p}(c, h^\star)$. In our main specification we accept the top-1 match for every c;[18] this yields a one-to-one proposal on the CPES side and avoids many-to-one assignments.

Human-in-the-loop refinement (optional). AFSM is designed for humancomputer collaboration: after an initial pass, researchers may hand-label a small set of borderline pairs (e.g., $\widehat{p} \in [0.6, 0.85]$), retrain, and iterate until precision at high confidence stabilizes (Kaufman and Klevs, 2022). We report results from a single trained model and, in robustness checks, a light HITL pass.

Diagnostics We summarize the empirical distribution of $\widehat{p}$ across accepted top-1 pairs in Figure 9. We can see that the density is right-skewed with mass near 1 and a good separation around 0.7. Therefore, we use 0.7 as our cut-off and only keep cases equal or above.

[18] In thresholded specifications we accept only if $\widehat{p}(c, h^\star) \geq \tau$, with $\tau \in \{0.7, 0.8, 0.9\}$ in sensitivity checks; names below τ remain unmatched.

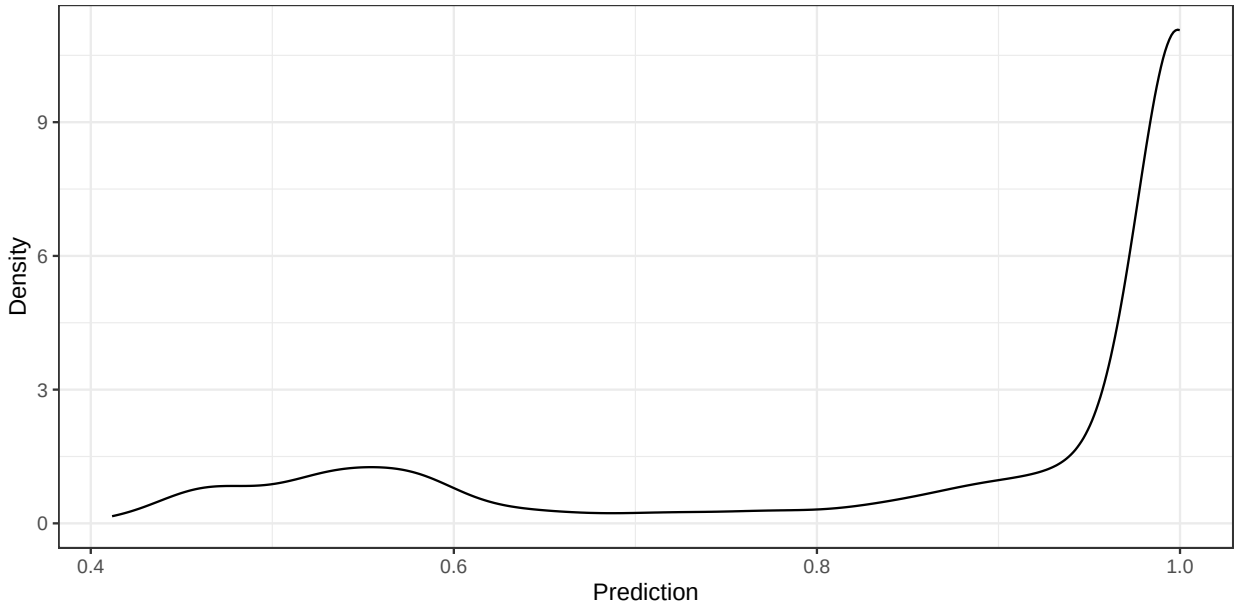
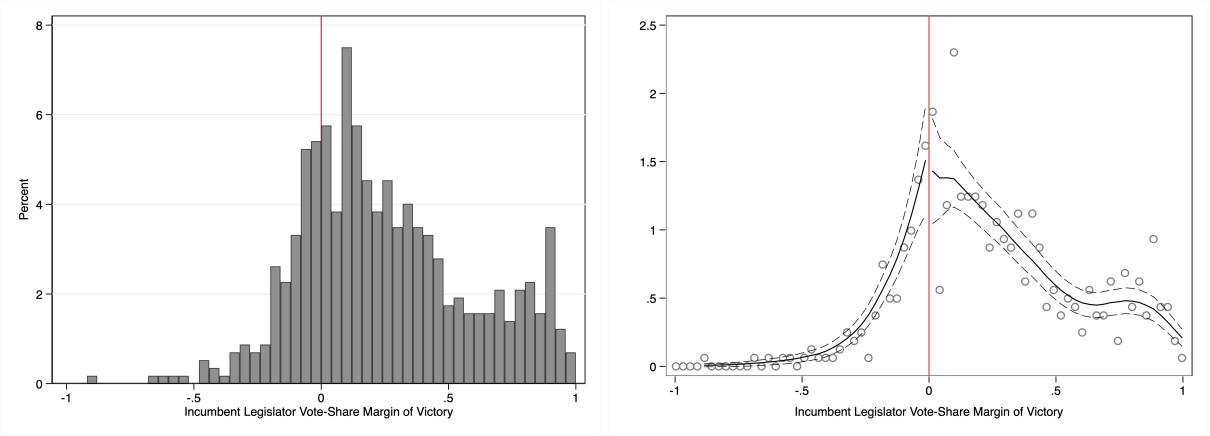


Figure 9: Density of predicted match probabilities $\widehat{p}$ for top-1 CPES→HR candidate pairs.

G RDD validation

Figure 10: Tests of Candidate Sorting; Full Sample



Notes: Panel 1 is a histogram of the incumbent legislators' vote share margins. Panel 2 is a weighted kernel estimation of the log density according to the vote share margin of victory of the incumbent legislator, performed separately on either side of the zero threshold, using optimal bandwidth and bin size as in McCrary (2008).

H Descriptive Evidence

Figure 11: All Contracts, raw data

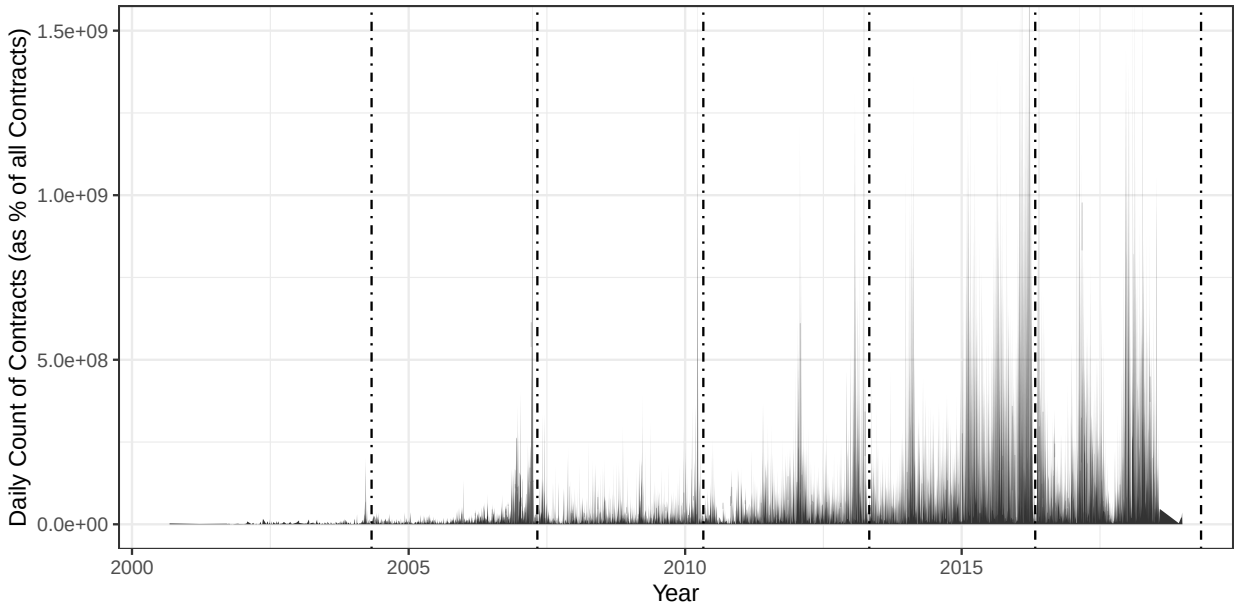


Figure 12: All Contracts, raw data by previous and current political connection of firm and incumbent

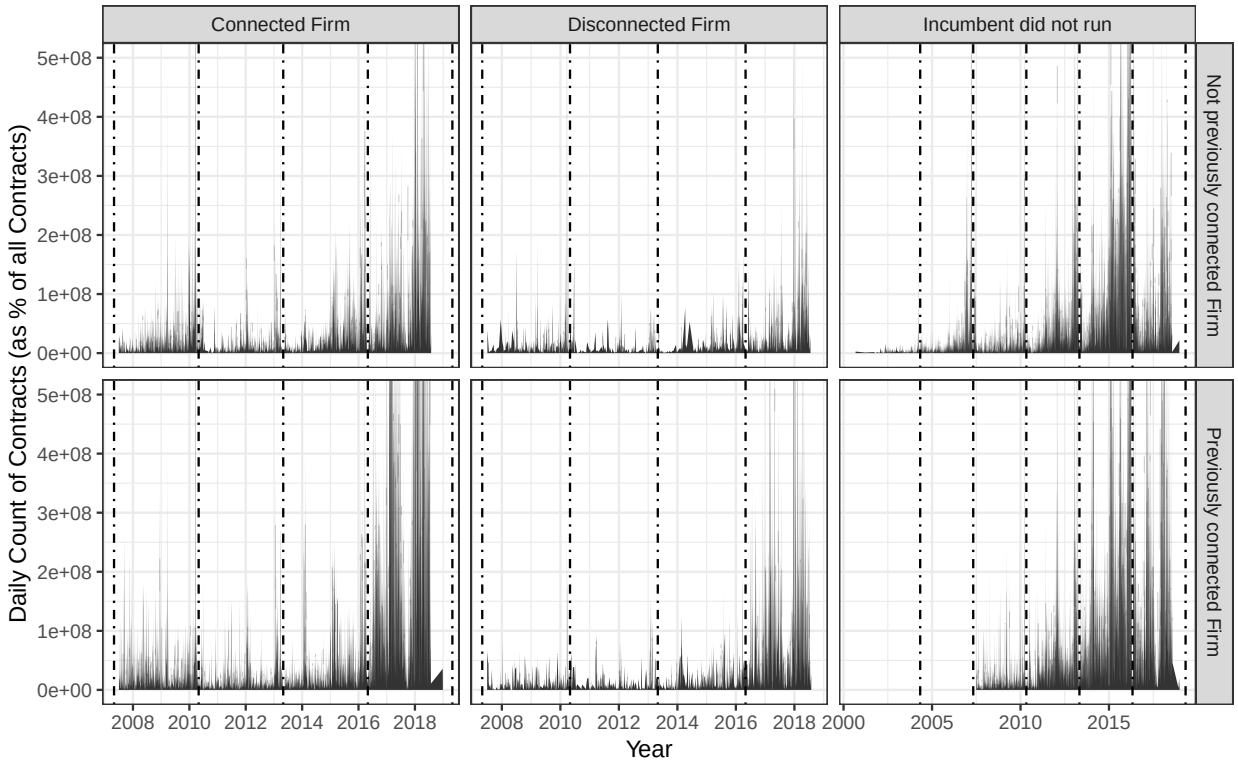
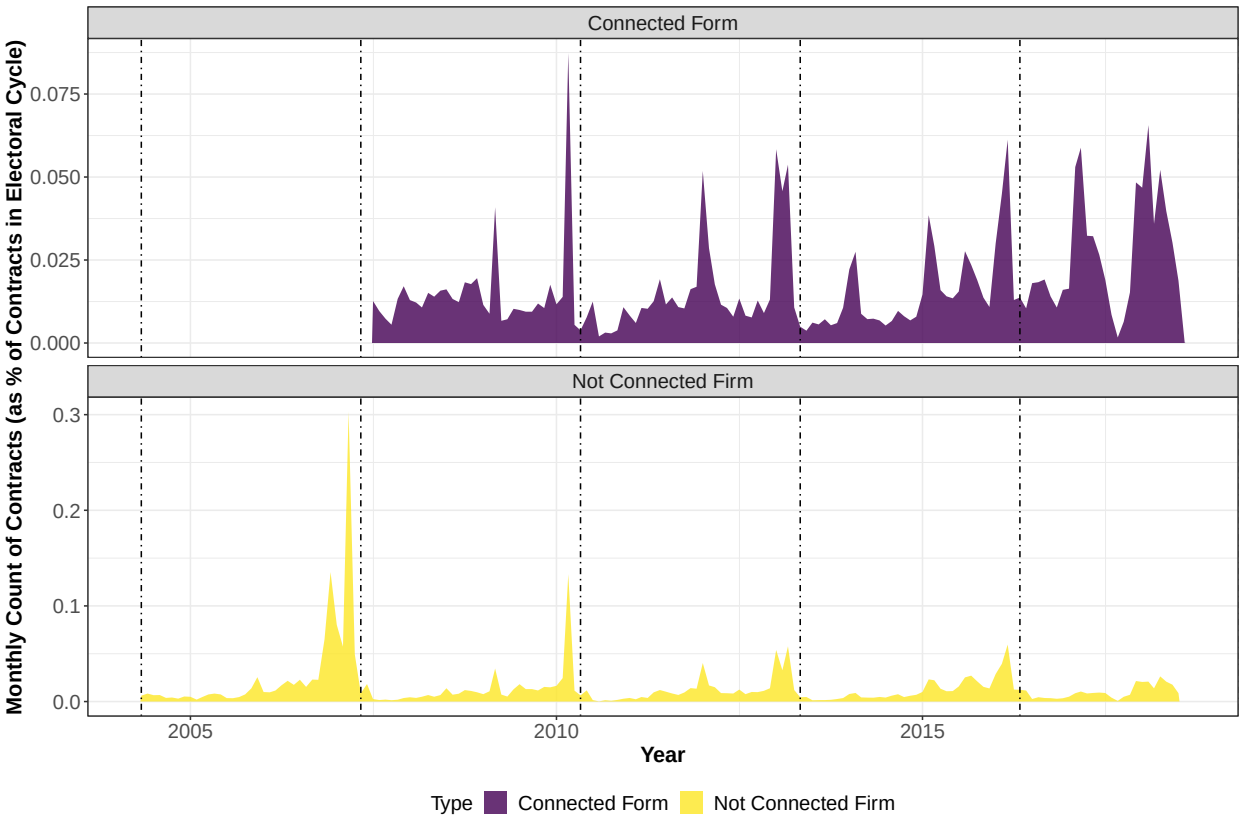
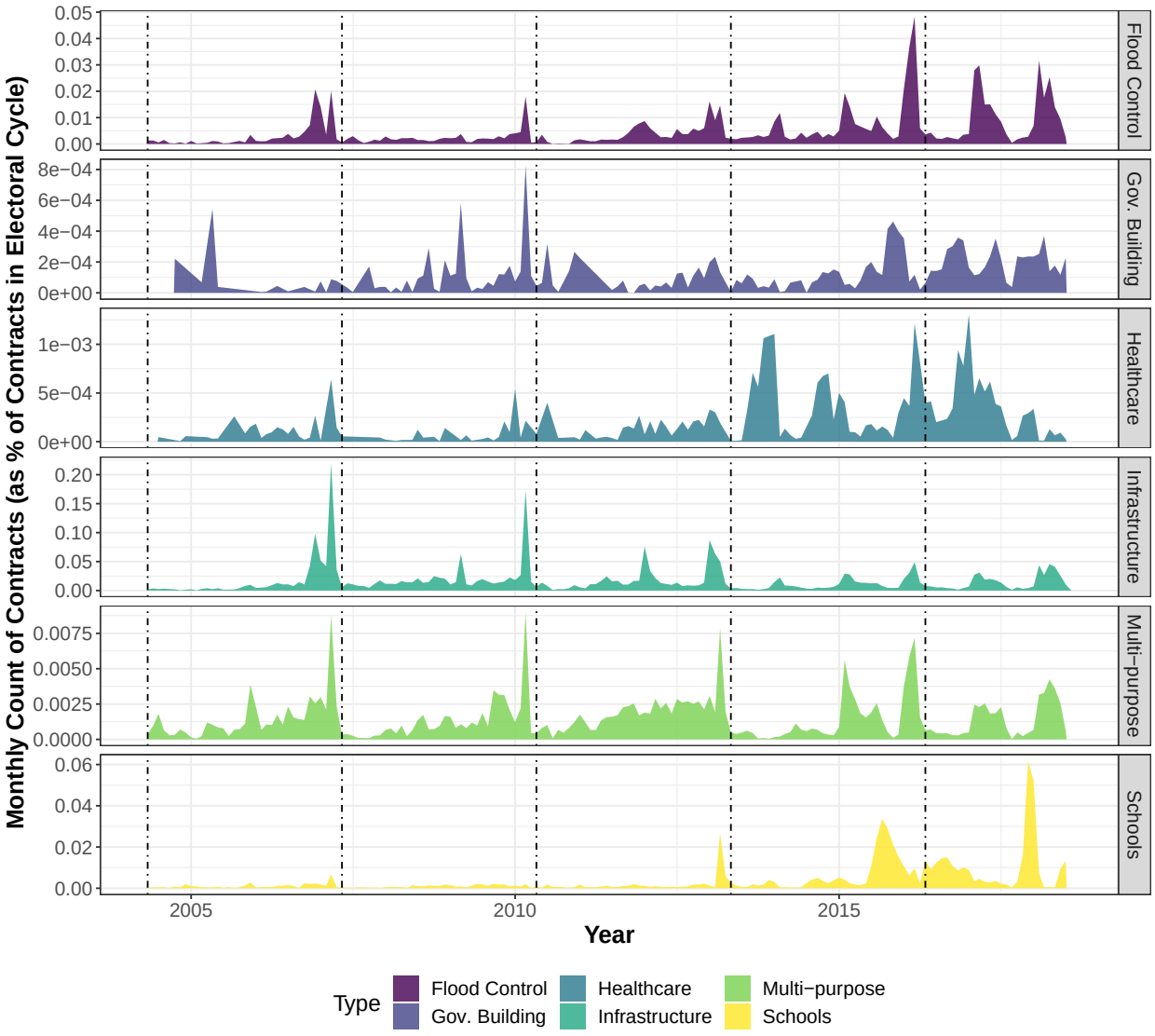


Figure 13: Timing of Contracts Awarded, by Type of Firm, scaled by Cycle, 2004-2019



Notes: Dashed vertical lines indicate congressional elections.

Figure 14: Timing of Contracts Awarded and Elections, by type of contract, scaled by cycle, 2004-2019



Notes: Dashed vertical lines indicate congressional elections.

Figure 15: Timing of Contracts Awarded and Elections; by type of contract and awarded firm, scaled by cycle, 2004-2019

Notes: Dashed vertical lines indicate congressional elections.

I RDD: Further Results

I.1 RDD, Full Sample

Table 7: RDD Estimates of Retaining vs. Losing a connection to a Legislator on Procurement Spending, Full Sample

	Total	Health	School	Flood	Roads	MPB
Conventional	−5.853***	3.851	−10.024***	161.200***	43.815***	34.997***
	(0.140)	(5.209)	(0.945)	(1.067)	(0.000)	(0.042)
Bias-Corrected	6.219***	5.846	−9.774***	165.714***	44.263***	35.754***
	(0.140)	(5.209)	(0.945)	(1.067)	(0.000)	(0.042)
Robust	6.219***	5.846	−9.774***	165.714***	44.263***	35.754***
	(0.947)	(5.835)	(0.957)	(0.838)	(0.002)	(0.045)
N	37025	871	9398	5240	10375	5057
N.effective	416	195	758	248	391	75
Optimal.bandwidth	0.003	0.111	0.029	0.014	0.011	0.008

* p < 0.1, ** p < 0.05, *** p < 0.01

[a] Notes. This table reports the results of retaining vs. losing a connection to a legislator on procurement spending in Million Pesos. One million Philippine pesos (PHP) is roughly 18,000 US dollars. Each column presents the results for a different outcome. The running variable is the difference in vote shares between the connected incumbent and the runner-up. All specifications use a triangular kernel and an MSE-optimal bandwidth selector (mserd). Conventional is the standard local-linear estimator, which does not correct for smoothing bias inherent in the local approximation. Bias-corr. presents the bias-corrected point estimate but does not adjust the standard errors for the additional uncertainty from the bias-correction step. Robust presents the robust bias-corrected (RBC) point estimate and confidence interval. Standard errors are clustered at the district-electoral cycle.

I.2 RDD, Post-Election Year

Table 8: RDD Estimates of Retaining vs. Losing a connection to a Legislator on Procurement Spending, Post Election Year

	Total	Health	School	Flood	Roads	MPB
Conventional	−10.200***	−12.424*	−44.089***	−45.995***	23.247***	3.941**
	(0.997)	(6.997)	(0.967)	(14.126)	(4.198)	(1.762)
Bias-Corrected	−9.181***	−15.997**	−43.423***	−35.014**	25.206***	2.228
	(0.997)	(6.997)	(0.967)	(14.126)	(4.198)	(1.762)
Robust	−9.181***	−15.997**	−43.423***	−35.014**	25.206***	2.228**
	(1.038)	(7.867)	(0.902)	(14.682)	(4.767)	(1.074)
N	14962	422	3706	2281	4040	1903
N.effective	1112	75	359	311	746	512
Optimal.bandwidth	0.024	0.078	0.037	0.053	0.076	0.097

* p < 0.1, ** p < 0.05, *** p < 0.01

[a] Notes. This table reports the results of retaining vs. losing a connection to a legislator on procurement spending in Million Pesos. One million Philippine pesos (PHP) is roughly 18,000 US dollars. Each column presents the results for a different outcome. The running variable is the difference in vote shares between the connected incumbent and the runner-up. All specifications use a triangular kernel and an MSE-optimal bandwidth selector (mserd). Conventional is the standard local-linear estimator, which does not correct for smoothing bias inherent in the local approximation. Bias-corr. presents the bias-corrected point estimate but does not adjust the standard errors for the additional uncertainty from the bias-correction step. Robust presents the robust bias-corrected (RBC) point estimate and confidence interval. Standard errors are clustered at the district-electoral cycle.

I.3 RDD, Pre-Election Year

Table 9: RDD Estimates of Retaining vs. Losing a connection to a Legislator on Procurement Spending, Pre-Election Year

	Total	Health	School	Flood	Roads	MPB
Conventional	88.269***	104.151	−2.249	373.997***	75.257***	17.544***
	(1.326)	(130.119)	(1.378)	(14.499)	(6.784)	(1.429)
Bias-Corrected	89.823***	−306.094**	−6.750***	388.744***	75.848***	18.256***
	(1.326)	(130.119)	(1.378)	(14.499)	(6.784)	(1.429)
Robust	89.823***	−306.094	−6.750***	388.744***	75.848***	18.256***
	(1.339)	(329.597)	(1.392)	(15.291)	(7.708)	(1.563)
N	12516	78	3016	1793	3673	2156
N.effective	708	50	154	103	952	206
Optimal.bandwidth	0.022	0.306	0.021	0.02	0.114	0.039

* p < 0.1, ** p < 0.05, *** p < 0.01

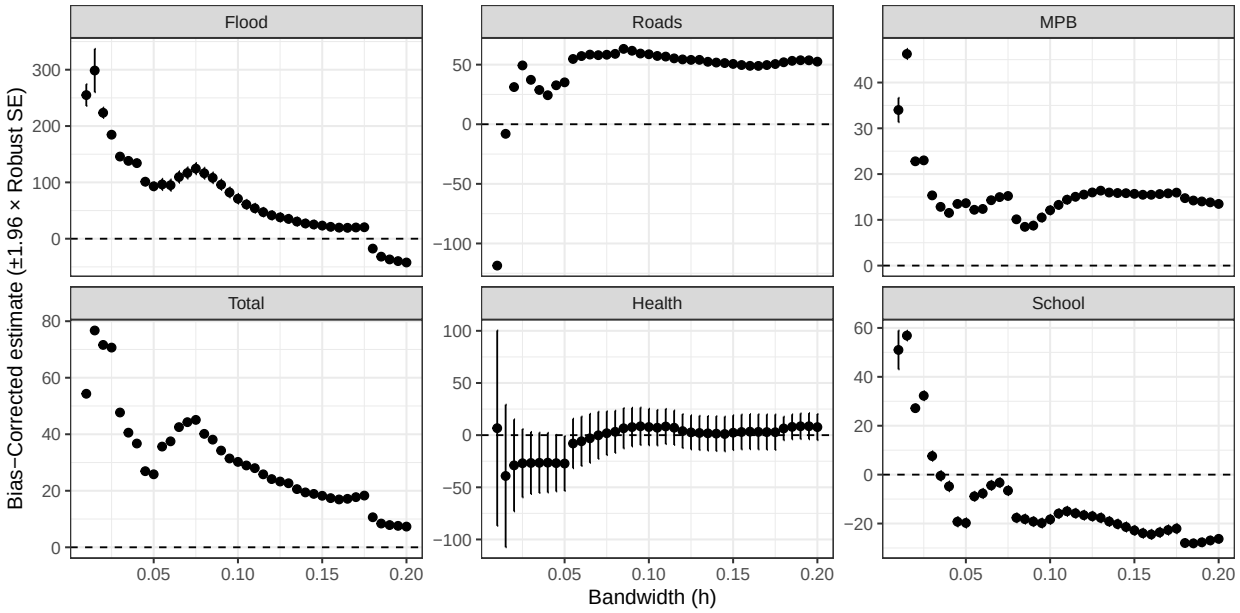
[a] Notes. This table reports the results of retaining vs. losing a connection to a legislator on procurement spending in Million Pesos. One million Philippine pesos (PHP) is roughly 18,000 US dollars. Each column presents the results for a different outcome. The running variable is the difference in vote shares between the connected incumbent and the runner-up. All specifications use a triangular kernel and an MSE-optimal bandwidth selector (mserd). Conventional is the standard local-linear estimator, which does not correct for smoothing bias inherent in the local approximation. Bias-corr. presents the bias-corrected point estimate but does not adjust the standard errors for the additional uncertainty from the bias-correction step. Robust presents the robust bias-corrected (RBC) point estimate and confidence interval. Standard errors are clustered at the district-electoral cycle.

I.4 RDD Robustness: Bandwidth Sensitivity.

We estimate sharp regressiondiscontinuity (RD) effects using the localpolynomial procedure in `rdrobust`. For each outcome $Y \in \{\text{Total, Health, School, Flood, Roads, MPB}\}$, we implement local linear RD ($p = 1$) with robust bias correction ($q = 2$) at cutoff $c = 0$ of the running variable $X = \textit{forcing\_var}$. Inference is based on biascorrected point estimates (the BiasCorrected coefficient) and robust biascorrected confidence intervals (the Robust row of the CI matrix). Standard errors are clustered at the *reg_prov_district_year* level. We assess bandwidth sensitivity by reporting estimates over a dense grid $h \in [0.01, 0.20]$ in increments of 0.005; panels are faceted by outcome. We present results separately for the pre-election subsample (*Notice_Year* $\in \{2006, 2009, 2012, 2015, 2018\}$) and the post-election subsample (*Notice_Year* $\in \{2005, 2008, 2011, 2014, 2017\}$).

I.4.1 Bandwidth Sensitivity: Full Period

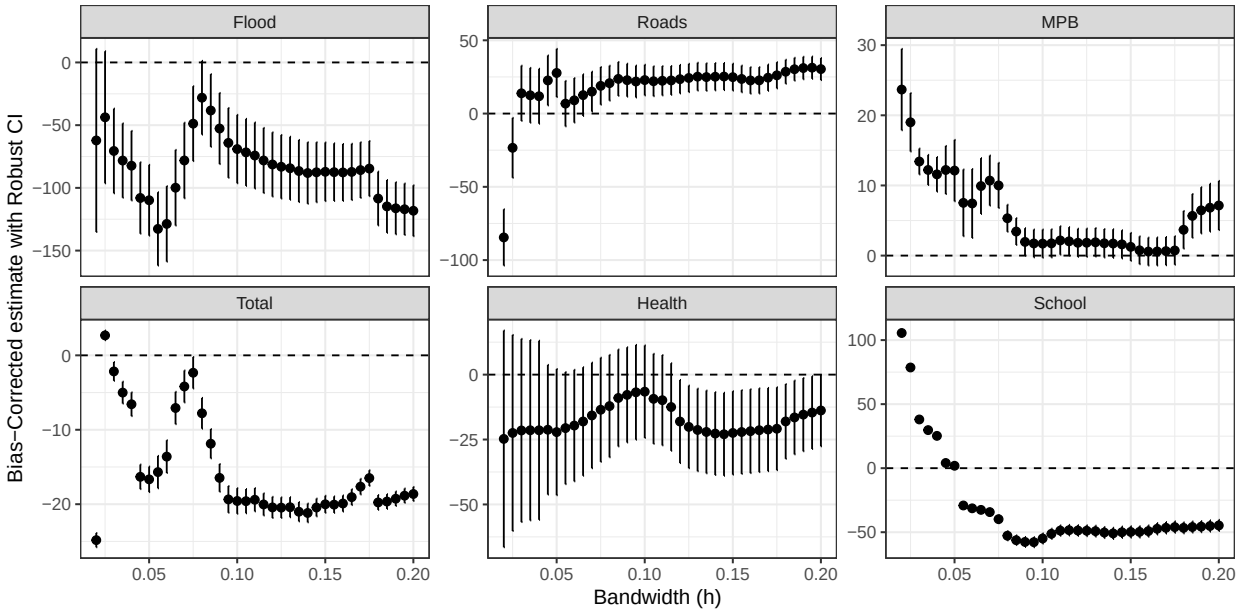
Figure 16: Bandwidth Sensitivity: Full Period



Notes: Bandwidth sensitivity of RD estimates (full sample). Points show biascorrected local linear RD estimates; vertical bars show robust biascorrected 95% confidence intervals. Results are computed over a common bandwidth grid $h \in [0.01, 0.20]$ *(step* 0.005*). Standard errors are clustered at the reg_prov_district_year level.*

I.4.2 Bandwidth Sensitivity: Post Election Period

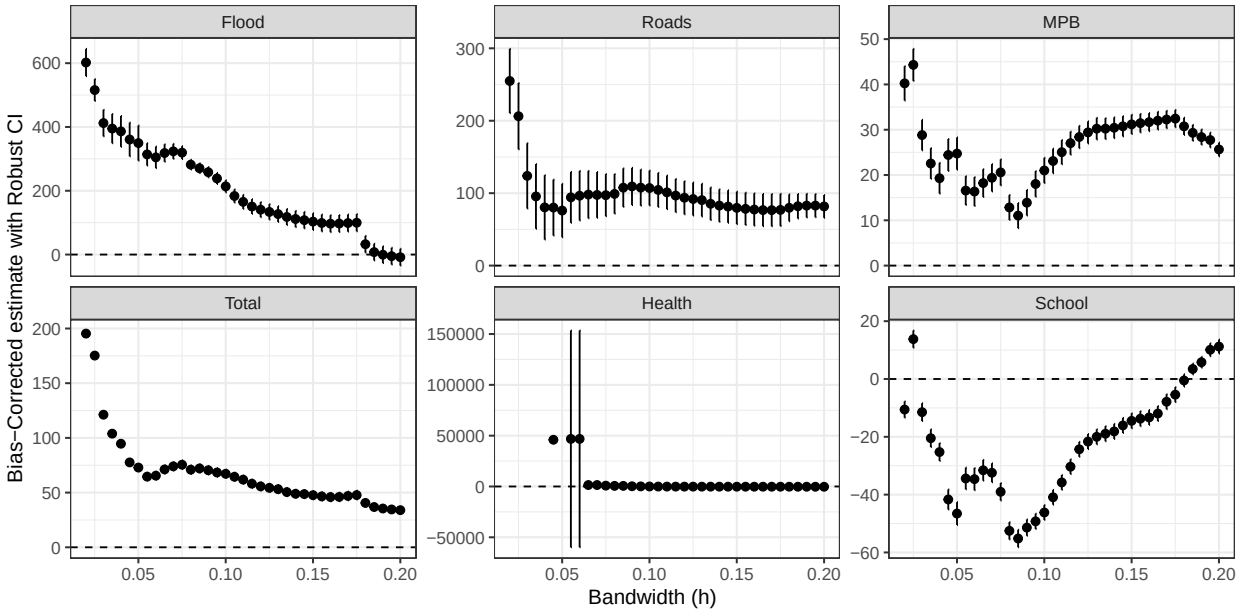
Figure 17: Robustness: Post Election Period



Notes: Bandwidth sensitivity of RD estimates. Points show biascorrected local linear RD estimates; vertical bars show robust biascorrected 95% confidence intervals. post-election subsample (Notice_Year $\in \{2005, 2008, 2011, 2014, 2017\}$*) over a common bandwidth grid* $h \in [0.01, 0.20]$ *(step* 0.005*). Standard errors are clustered at the reg_prov_district_year level.*

I.4.3 Bandwidth Sensitivity: Pre Election Period

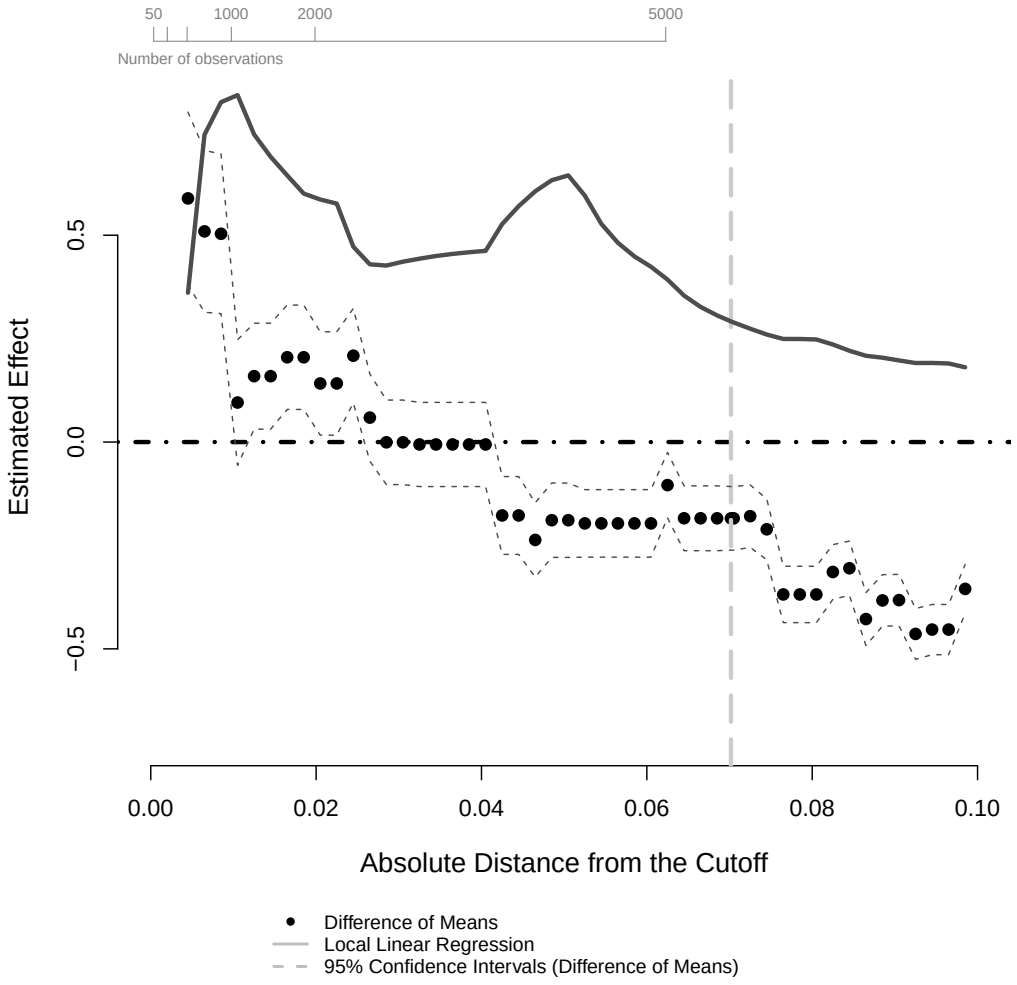
Figure 18: Robustness: Pre Election Period



Notes: Bandwidth sensitivity of RD estimates. Points show biascorrected local linear RD estimates; vertical bars show robust biascorrected 95% confidence intervals. post-election subsample (Notice_Year $\in \{2006, 2009, 2012, 2015, 2018\}$*) over a common bandwidth grid* $h \in [0.01, 0.20]$ *(step* 0.005*). Standard errors are clustered at the reg_prov_district_year level.*

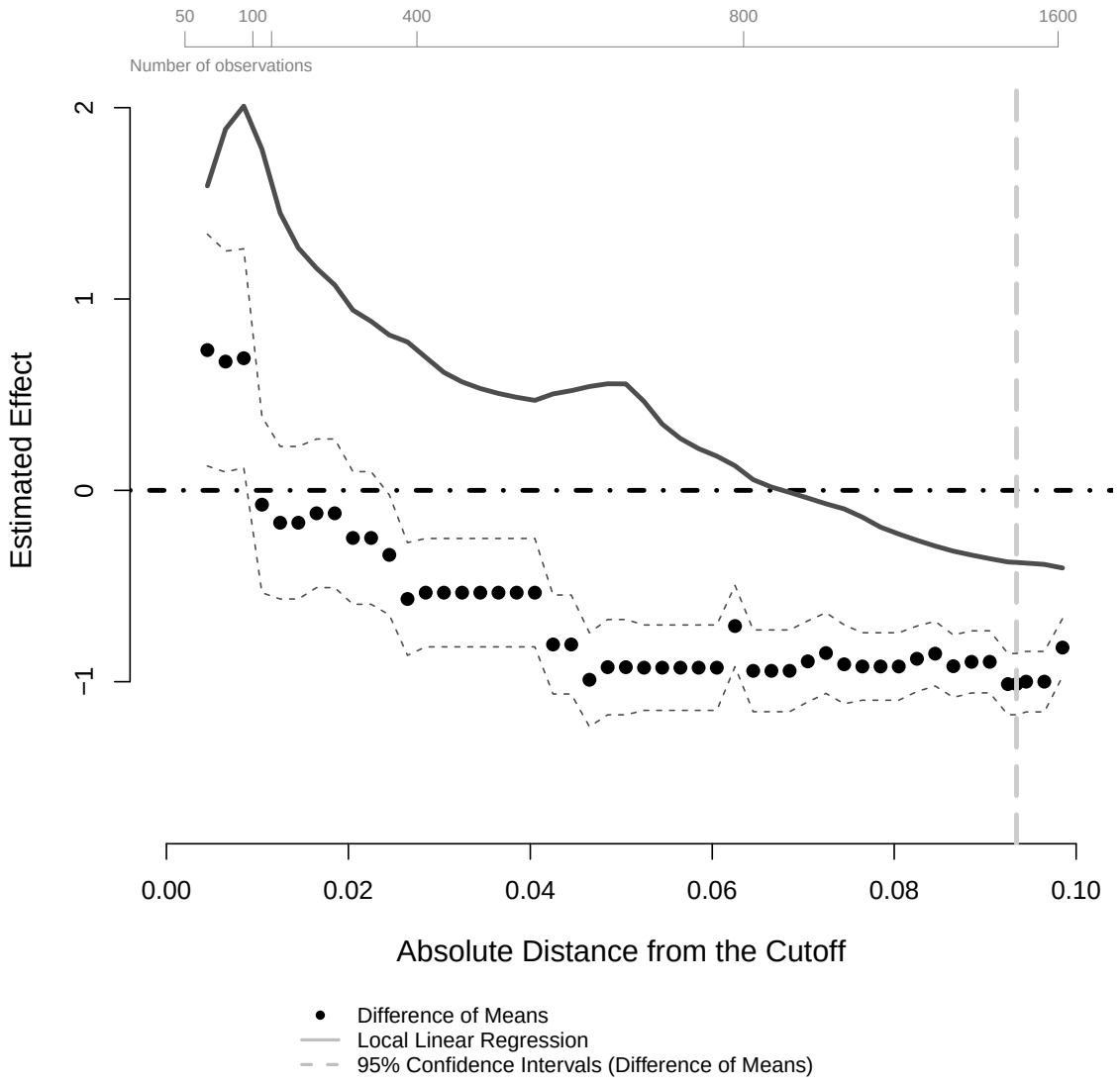
I.5 RDD Robustness: Further Results, Functional Form

Figure 19: Robustness: Total Projects



Notes: Dashed horizontal line depicts the optimal bandwidth.

Figure 20: Robustness: Flood Projects



Notes: Dashed horizontal line depicts the optimal bandwidth.

J RDD Welfare Effects: Further Results

J.1 Full Cycle, 2016-2019

Table 10: RDD Estimates of Retaining vs. Losing a connection to a Legislator on Welfare Outcome, 2016-2019 Cycles

	Slippage	Negative Slip.	CPES Rating	Workmanship	Materials	Time
Conventional	-9.660***	0.300***	0.406*	-1.381***	2.194***	-5.102***
	(0.939)	(0.033)	(0.238)	(0.326)	(0.241)	(0.586)
Bias-Corrected	-10.158***	0.318***	0.328	-1.523***	2.258***	-5.351***
	(0.939)	(0.033)	(0.238)	(0.326)	(0.241)	(0.586)
Robust	-10.158***	0.318***	0.328	-1.523***	2.258***	-5.351***
	(0.959)	(0.036)	(0.279)	(0.345)	(0.273)	(0.601)
N	12458	12472	12472	12472	12472	12472
N.effective	940	1018	3917	1726	3701	1611
Optimal.bw	0.027	0.03	0.152	0.07	0.145	0.057

* p < 0.1, ** p < 0.05, *** p < 0.01

[a] Notes. This table reports the results of retaining vs. losing a connection to a legislator on welfare outcomes. Each column is a separate RD. Outcomes: Mean Slippage (pp), N Negative Slippage (count of reporting periods), CPES Mean Rating (01), and CPES subcomponents Workmanship, Materials, Time (01; higher is better). Running variable: vote-share margin between the connected incumbent and the runner-up. Triangular kernel with MSE-optimal bandwidth. Robust bias-corrected (RBC) point estimates with standard errors in parentheses. N is full sample; N.effective is within the optimal bandwidth. SEs clustered at the districtelectoral cycle

J.2 Post Election Period (2017)

Table 11: RDD Estimates of Retaining vs. Losing a connection to a Legislator on Welfare Outcome, 2017

	Slippage	Negative Slip.	CPES Rating	Workmanship	Materials	Time
Conventional	-7.264***	0.128***	0.319	0.037***	0.002	0.043***
	(0.912)	(0.034)	(0.515)	(0.006)	(0.005)	(0.010)
Bias-Corrected	-7.757***	0.125***	0.516	0.042***	-0.001	0.050***
	(0.912)	(0.034)	(0.515)	(0.006)	(0.005)	(0.010)
Robust	-7.757***	0.125***	0.516	0.042***	-0.001	0.050***
	(0.979)	(0.041)	(0.621)	(0.007)	(0.005)	(0.011)
N	3334	3379	3379	3379	3379	3379
N.effective	357	692	692	309	309	187
Optimal.bw	0.041	0.081	0.079	0.032	0.04	0.02

* p < 0.1, ** p < 0.05, *** p < 0.01

[a] Notes. This table reports the results of retaining vs. losing a connection to a legislator on welfare outcomes. Each column is a separate RD. Outcomes: Mean Slippage (pp), N Negative Slippage (count of reporting periods), CPES Mean Rating (01), and CPES subcomponents Workmanship, Materials, Time (01; higher is better). Running variable: vote-share margin between the connected incumbent and the runner-up. Triangular kernel with MSE-optimal bandwidth. Robust bias-corrected (RBC) point estimates with standard errors in parentheses. N is full sample; N.effective is within the optimal bandwidth. SEs clustered at the districtelectoral cycle

J.3 Pre Election Period (2018)

Table 12: RDD Estimates of Retaining vs. Losing a connection to a Legislator on Welfare Outcome, 2018

	Slippage	Negative Slip.	CPES Rating	Workmanship	Materials	Time
Conventional	-10.204***	0.607***	0.101	-0.115***	0.204***	-0.249***
	(2.292)	(0.146)	(0.897)	(0.016)	(0.004)	(0.021)
Bias-Corrected	-10.605***	0.623***	-0.089	-0.112***	0.206***	-0.246***
	(2.292)	(0.146)	(0.897)	(0.016)	(0.004)	(0.021)
Robust	-10.605***	0.623***	-0.089	-0.112***	0.206***	-0.246***
	(2.346)	(0.149)	(1.005)	(0.016)	(0.004)	(0.022)
N	2632	2632	2632	2632	2632	2632
N.effective	282	112	589	112	112	112
Optimal.bw	0.057	0.018	0.118	0.014	0.015	0.015

* p < 0.1, ** p < 0.05, *** p < 0.01

[a] Notes. This table reports the results of retaining vs. losing a connection to a legislator on welfare outcomes. Each column is a separate RD. Outcomes: Mean Slippage (pp), N Negative Slippage (count of reporting periods), CPES Mean Rating (01), and CPES subcomponents Workmanship, Materials, Time (01; higher is better). Running variable: vote-share margin between the connected incumbent and the runner-up. Triangular kernel with MSE-optimal bandwidth. Robust bias-corrected (RBC) point estimates with standard errors in parentheses. N is full sample; N.effective is within the optimal bandwidth. SEs clustered at the districtelectoral cycle