

# From Elected to Appointed: The Economic Consequences of Central Takeovers on Public Procurement\*

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[Please find the last version of the paper here.]

## Abstract

This paper investigates the impact of central takeovers of local jurisdictions on public procurement practices at the local level. Using a unique dataset covering the universe of state contracts in Turkey and a staggered Difference-in-Differences (DiD) design, we analyze the differences between elected and centrally appointed mayors in their practice of law and resultant economic efficiency. Our findings reveal that trustee mayors, appointed by the central government, are more likely to misuse regulatory provisions, resulting in significant economic costs. Specifically, trustee mayors abuse the unforeseen event clause 24 percentage points more than elected mayors and reduce the use of competitive sealed-bid auctions by 32 percentage points. These results are robust to a variety of tests, including a Regression Discontinuity in Time (RDiT) approach. Such malpractice inflates contract prices by 23% and reduces value for money by 40%. We probe the underlying mechanisms and emphasize the diminished local accountability of appointed mayors. On the other hand, we do not find any evidence of better quality procurement through expanded discretion.

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# 1 Introduction

The central government takeovers of local jurisdictions are becoming an increasingly common phenomenon along the authoritarian wave.<sup>1</sup> Although centralization may improve policy outcomes thanks to coordination benefits (Seabright, 1996; Arora et al., 2023), a degree of political decentralization and local accountability are seen essential for economic development (Ostrom, 1990; Myerson et al., 2005; Myerson, 2011). Especially within the context of increasing authoritarianism, centralization is typically motivated by concerns like curbing dissent or extracting resources to ensure the flow of revenues. Despite the ongoing global wave of autocratization and its local repercussions on public finance, there is still scant sub-national evidence on political centralization and its effects on politician behavior and local economic outcomes.<sup>2</sup>

This paper investigates how central takeovers of local jurisdictions affect public procurement practices and outcomes at the local level. Centralization, in the form of centrally appointed local officials, leads to the removal of downward accountability of local officials to the local residents, known as *local accountability*. Similarly, appointed local officials also face less horizontal competition for the office they hold. Instead, these appointed officials face upward accountability towards the central government as their careers depend on their relationships with the national political leaders who can appoint and dismiss them. As a result, the central appointment of local officials creates a moral hazard problem as national political leaders cannot commit to punishing poorly performing local officials, especially when these officials make valuable contributions to their rule (Myerson, 2021).

We inquiry the consequences of such central takeovers, and the corresponding lack of local accountability, within the context of public procurement.<sup>3</sup> As an economic activity through which large sums of public funds flow into private hands, public procurement is particularly vulnerable to corruption through diversion of funds by public officials (Di Tella and Schargrodsky, 2003; Olken, 2007; Ferraz and Finan, 2011; Titl and Geys, 2019; Baltrunaite,

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<sup>1</sup>See, e.g., political centralization attempts in China (Shen and Tian, 2020), Vietnam (Malesky et al., 2014), Russia (Beazer and Reuter, 2022), or Turkey (Tutkal, 2022)

<sup>2</sup>Nevertheless, there has been continued theoretical interest in decentralization (Seabright, 1996; Bardhan and Mookherjee, 2000; Lockwood, 2002; Besley and Coate, 2003; Myerson, 2021). The limited empirical evidence, on the other hand, comes mostly from cross-country studies or from the US, and typically provides correlational findings (e.g., Fisman and Gatti, 2002a; Fisman and Gatti, 2002b; Enikolopov and Zhuravskaya, 2007; Faguet, 2014). A recent exception is Martinez-Bravo et al. (2022) who provide evidence from China on the role of local elections in autocracies.

<sup>3</sup>Public procurement, the process through which public authorities purchase goods and services from the private sector, is a crucial function of governments and a major component of public spending. According to the World Bank, it accounted for 12% of the global GDP in 2019 (Bosio et al., 2022) and has a significant impact on private sector development, economic efficiency, and social welfare (Ferraz et al., 2015).

2020; Baranek and Titl, 2020; Bosio et al., 2022). In this paper, using a novel measure of law abuse, we specifically analyze how often appointed and elected politicians abuse existing regulations beyond their intended scope. We then quantify the economic costs of such malpractices and probe the likely mechanisms that might explain the observed differences between the appointed and the elected.

To answer these questions empirically, we use a novel administrative dataset covering the universe of state contracts granted in Turkey between 2014 and 2019. With its increasingly authoritarian regime, Turkey provides an ideal context to study the central takeovers of local governments. The country passed an emergency decree in September 2016 that amends the municipal law, making it possible for the central government to replace elected mayors with appointed ones. Over the following two years, the Turkish government sacked 95 elected municipal mayors and appointed trustee mayors in their stead. Appointed mayors were all mid-level bureaucrats (governors of the same district or province as the municipality) in the state apparatus, resulting in a change in local accountability. Importantly, appointments did not change the extent of fiscal or administrative authority of mayors; appointed mayors have the same powers as the elected ones.

Using geographic and temporal variation across trustee mayor appointments, we causally estimate the effect of central takeovers on public procurement practices using a staggered Difference-in-Differences (DiD) design. To put it differently, we compare state contracts granted by elected mayors with those granted by appointed trustee mayors in terms of *law abuse* and *contract terms*. Overall, this unique setting allows us to discern the effect of local accountability on politician behavior while shutting down other channels related to political centralization, such as changes in fiscal or administrative authority.<sup>4</sup>

Our main outcomes concern abuse of law and resulting contract terms, namely the price of the contract and the value for money. Our first outcome regarding abuse of law is a novel indicator measuring how often public officials use existing regulations beyond their scope. We measure it by the unjustified use of the *unforeseen event* clause, a typical clause in procurement regulations intended to deal with emergency situations. The use of this clause is only justified by events that could not be foreseen by the procuring entity (*force majeure* events such as natural disasters, pandemics) and that require immediate handling of the

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<sup>4</sup>Our comparison uses trustee mayors appointed by President Erdoğan’s government and elected mayors from President Erdoğan’s *Justice and Development* Party (AKP hereafter). The restriction of elected mayors to elected AKP mayors –rather than including opposition mayors too– ensures that we do not pick up any effect of typical horizontal accountability mechanisms such as judicial or media investigation. We relax this restriction only in certain analyses when a comparison of trustee and opposition mayors is of interest *per se*. We explicitly state it in those analyses.

procurement due to a risk on lives or property. When invoked, however; this clause allows the procuring agency to use the more discretionary *negotiation* procedure that gives them the power to choose who to invite to bid on the contract without the necessity to publicize the contract notice. Used in an unjustified manner, the unforeseen events clause serves as a loophole to evade the more demanding legal requirements of the *sealed-bid auction*.<sup>5</sup>

Our second outcome is based on the use of *threshold* clause, another typical clause in procurement regulations granting more discretion to public officials in contract awarding when the value of the purchase is below a certain threshold. This clause is intended by law to facilitate a “fast-track” procedure for small purchases without dealing with the more demanding requirements of a sealed-bid auction. However, the relatively low level of the threshold might incentivize the officials to alter the contracts in order to stay below the threshold. We investigate both how often public officials invoke this clause and whether it entails cost manipulation when they do so.

Our findings indicate that the central takeover of local governments worsens the situation in public procurement in terms of rule of law. We find that trustee mayors abuse the unforeseen event clause significantly more than elected mayors. Specifically, we estimate that trustee mayors use the unforeseen event clause 24 percentage points more than elected mayors. Similarly, the share of procurement spending with unforeseen event clause is 28 percentage points more under trustee mayors compared to elected mayors.

These adverse effects come at the expense of more competitive sealed-bid auctions. Under trustee mayors, the use of sealed-bid auctions and the share of spending with sealed-bid auctions decreases by, respectively, 33 and 28 percentage points. Remarkably, the decrease in the share of spending with sealed-bid auctions equals the increase in the share of spending with unforeseen event clauses (28 percentage points). Furthermore, in terms of contract terms, such abuse of law by appointed trustee mayors drives the contract prices up by 23% and lower the rebate –i.e., value for money– by 40%. Regarding the use of the threshold clause, we do not find a difference between elected and appointed mayors. A deeper look into the estimated cost distribution of contracts reveals that both groups engage in substantial cost manipulation at comparable levels to attain more discretion in contract awarding.

We check the robustness of our results to a number of alternative specifications including different versions of the outcome; alternative assumptions such as conditional and unconditional parallel trends; inclusion of controls; and to an alternative identification strategy using

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<sup>5</sup>Sealed-bid auction is regarded as the most competitive auction method in public procurement since any potential contractor can compete in the contract awarding process, and a contract notice has to be published in advance.

a Regression Discontinuity in Time (RDiT) in Section 5.2. We also test and reject several alternative mechanisms including larger number of natural disasters in trustee-appointed municipalities; violence history of the region; and adverse selection of governors as trustee mayors; in Section 5.3.

We next explore three potential mechanisms that might explain the observed differences between elected and trustee mayors in their public procurement practices and outcomes. First, we inquire about the possibility of trustee mayors holding a distinct policy agenda –e.g., dictated by the central government– than elected mayors. Given that the central government expressed a clear interest in taking over these municipalities, they might have as well commanded a rapid public service delivery program in the trustee-appointed municipalities. Second, a strand of literature in political economy shows that more discretion might lead to quality increases in public procurement. Accordingly, we consider whether trustee mayors used more discretion in contract awarding to deliver better quality services (e.g., Decarolis et al., 2020). Third, we analyze the plausibility of local accountability –or removal thereof– mechanism by focusing on re-election incentives of mayors and voters’ ability to detect malpractices by public officials. Our preferred mechanism is the lack of local accountability making mayors less accountable to local voters, as trustee mayors typically have no re-election incentives but career incentives that depend on their relationship with the ruling elite. We discuss these mechanisms in more detail in Section 5.5.

This paper makes three contributions to related literature. First, although there has been a long theoretical and empirical literature on political de-/centralization (see Footnote 2), disagreement remains about the costs and benefits of decentralization, as well as its effects on corruption (Mansuri and Rao, 2012; Malesky et al., 2014; Cloutier, 2017). This is partly due to the limited empirical evidence, which is predominantly cross-country and correlational, and partly to the complexity of settings within which decentralization occurs concurrently with other reforms or involves several changes in the institutional framework of the country at once (Treisman, 2007). Our central contribution to this literature, therefore, relates to our focus on bringing in causal evidence for the effects of central takeovers on a novel measure of law abuse and economic efficiency in the public procurement system. The closest papers to ours in terms of setting and study design are Beazer and Reuter (2022) and Gasparyan (2022). The former investigates the effect of central takeovers on unsafe housing stock, while the latter focuses on whether takeovers affect the amount of spending, taxation, and contracts to non-local suppliers by mayors. Both studies bring in evidence from Russia and are complementary to our paper.

Our second contribution to the political centralization literature relates to the underlying mechanisms. Our unique setting allows us to probe and single out the potential mechanisms that might have been effective in driving the adverse effects of centralization. In this particular setting, central takeovers only change the mayor from an elected to an appointed one in the affected municipalities, without bringing any change in the fiscal and administrative authority of mayoral offices. This helps us discern local accountability as an effective tool that disciplines politicians, consistent with the more established literature on electoral accountability (Barro, 1973; Ferejohn, 1986; Besley and Case, 1995; Persson and Tabellini, 2002; List and Sturm, 2006; De Janvry et al., 2008; Ferraz and Finan, 2011; Ashworth, 2012; Lim, 2013; Hessami, 2018; Aruoba et al., 2019; Lopes da Fonseca, 2020; Finan and Mazzocco, 2021; Mehmood, 2022, among others).

Third, our findings regarding discretion in contract awarding tie our paper into a larger literature on the role of politician discretion (Palguta and Pertold, 2017; Coviello et al., 2018; Duflo et al., 2018; Tulli, 2019; Decarolis et al., 2020; Baltrunaite et al., 2021; Bandiera et al., 2021; Carril et al., 2021; Hanspach, 2023; Szucs, 2023). This literature revolves around the question of whether discretion improves policy outcomes –such as service quality– or strengthens rent-seeking behavior, based on well-identified causal estimates from several settings. The majority of these studies focus on a very common malpractice, namely cost manipulation through threshold clause. By definition, this focus limits the study samples to small purchases under a threshold. Complementing the focus of these studies, we introduce a novel measure of law abuse based on the unforeseen event clause of the procurement regulations, which can be abused for all kinds of contracts regardless of the value of the procurement.<sup>6</sup> Additionally, we show that while local accountability limits the unjustified use of the unforeseen event clause, it has no effect on cost manipulation practices, possibly due to voters’ inability to detect such manipulation.

The remainder of the paper is organized as follows. Section 2 provides some background information on the empirical setting, public procurement in Turkey and the legal framework that regulates it. Section 3 describes the data sources and variables used in the empirical analysis. Section 4 presents the empirical strategy. Section 5 presents the empirical results, robustness checks, alternative mechanisms, and explores potential mechanisms. Section 6 concludes with some policy implications..

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<sup>6</sup>The unforeseen event clause we investigate is not specific to the public procurement regulation of Turkey. Similar versions can be found in the procurement regulations of the EU countries, the UK, the US, etc. See, for example, Article 32(c) that regulates the use of the negotiated procedure without prior call for competition for reasons of extreme urgency in the EU procurement law at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02014L0024-20220101>.

## 2 Institutional Background

In this section, we first discuss the political background, and second, provide information about the characteristics and appointment of trustees. Finally, we provide details about the public procurement regulations in Turkey.

### 2.1 Political Background

Dismissal of the elected mayors and the appointment of the trustee mayors were possible thanks to the state of emergency declared in the wake of the failed *coup d'état* attempt of July 15<sup>th</sup>, 2016. During the state of emergency that continued for two years, the Turkish government legislated through emergency decree-laws arguing that these were necessary to dismantle the “Gülenist network,” which was behind the coup and had penetrated deeply into the Turkish state. However, the emergency decrees were also used to target the pro-Kurdish opposition even though the two movements were clearly hostile against each other. People’s Democratic Party (HDP) and its sister party, Democratic Regions Party (DBP), which held the majority of the municipal offices in the Kurdish provinces, came under attack with the emergency decree-law no 674 of 1 September 2016.<sup>7</sup> This decree amended the municipal law, allowing the government to replace elected mayors, deputy mayors, or council members with trustees appointed by the state authorities if there were charges against them about offenses of aiding and abetting terrorism and terrorist organizations.<sup>8</sup>

The replacement of the elected mayors started on September 11<sup>th</sup>, 2016, with 24 mayors being sacked and continued throughout the state of emergency, removing 95 elected mayors out of 102 in two years. Figure 1 shows the mayoral offices taken over by trustee mayors together with the ones held by elected (AKP) mayors. OHCHR (2017) reports that “[i]n most cases, the ‘trustees’ were appointed immediately following the arrest of the democratically elected officials, indicating a high degree of coordination between the judiciary and the executive branches.” Venice Commission of the Council of Europe also called the Turkish government “to repeal the provisions introduced by the Decree Law N° 674 which are not strictly necessitated by the state of emergency, in particular concerning the rules enabling the filling of vacancies in the positions of mayor, vice-mayor, local council member, by the

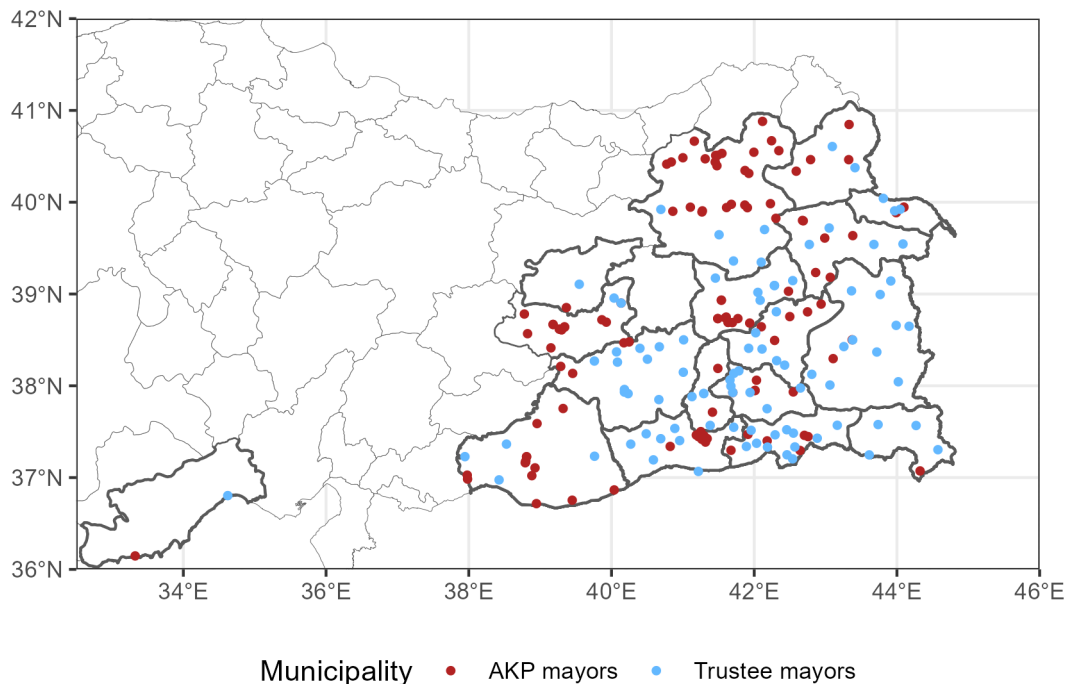
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<sup>7</sup>Official Gazette, September 1, 2016: <https://www.resmigazete.gov.tr/eskiler/2016/09/20160901M2-2.htm>

<sup>8</sup>Most of these charges were made under the rather far-reaching anti-terrorism law of Turkey. Transnational observers have repeatedly criticized this law due to “its broad and excessively vague definition of terrorism, organized crime and propaganda,” arguing that it acts as “an instrument for the repression of internal dissent” (EU, 2016).

way of appointments” (EU, 2017), to no avail.

Figure 1: Municipal offices held by trustee and elected (AKP) mayors



## 2.2 Getting to Know the Trustees: Governors in Turkish Central Administration

In Turkey, the local public administrative system functions through a dual structure: one involving locally elected municipal authorities responsible primarily for local infrastructure and services like road development, construction zoning, and water facilitation, and the other comprising appointed governors representing the central state at the provincial and district levels (Tan, 2020). The majority (75 out of 95) of the trustees in our sample are the governors of the same district in which they are appointed as trustee mayor, while the rest are either provincial governors (replacing the mayors of metropolitan municipalities) or their deputies. Provincial and district governors - *valis* and *kaymakams* in Turkish, respectively - play pivotal roles at the local level in the highly centralized public administration system of Turkey. They are appointed by the central government and serve as key intermediaries between the central authority and localities. While they are not the ultimate decision-makers on public services that are provided by the municipality, they have administrative tutelage responsibility over municipalities, and also oversee a wide range of provincial or



district administration functions, supervising various local branches of central ministries and government agencies, ensuring coordination and harmony among different state institutions within their jurisdictions (Çapar, 2015).

Governors are career bureaucrats, appointed for life through a centrally administered selection process overseen by the Ministry of Interior (Law on the Officers of Ministry of the Interior, 1930). The exam for selection into governorship has two equally weighted parts: a standardized written exam and an interview that is conducted by the Ministry staff. Once selected, the governor candidates go through a three-year-long internship and then proceed to become a district governor of a small district. Starting from the interview stage, the governors are evaluated by their superiors within the Ministry of Interior all along their career routes. When they are district governors, the evaluation is done by the provincial governors. These evaluations would form the basis of their promotions along the ranks, in which the final decision is the President's. As such, the profession is highly hierarchical, and career prospects are dependent on the governor's ability to appease their superiors, including the central government.

## 2.3 Public Procurement Regulations in Turkey

Current public procurement law in Turkey was crafted via a lengthy deliberation and bargaining process between the successive Turkish governments and the EU and international financial institutions, such as the World Bank, the IMF and the WTO, from 1999 to 2002. It was legislated as part of the post-2001 crisis economic reforms, before AKP (*Justice and Development Party*) government's first term started at the end of 2002. AKP resisted both the new public procurement law and the newly established independent regulatory agency, the Public Procurement Authority (PPA), albeit with little success (Ercan and Oguz, 2006). Original law that came to effect in early 2003 was in line with EU Procurement Directives. However, in the years to come, successive AKP governments redesigned the procurement framework according to their needs. While the PPA lost its independence and the ability to investigate possible corruption cases in the absence of formal complaints, hundreds of amendments to the law have been made since as early as July 2003, generally bending the law to include more exceptions and more discretion to the procuring agencies (Gürakar, 2016), (TEPAV, 2009).

In the current form of the law, when the public administration uses the negotiation procedure for procurement, it invites only select companies without publicizing the tender notice. As such, the procurement document can only be bought by the invited parties. The

law also rules out any objection to the outcome of this procedure by a party that was not invited in the first place (Demircioğlu, 2014; Yıldırım, 2018).

There is anecdotal evidence of law abuse as early as 2008 (Gürakar and Meyersson, 2016). Demircioğlu (2014) describes how administrations in Turkey abuse the negotiation procedure in the law, and deems this as clear violation of the law. He also argues such tender irregularities develop into corruption in procurement. Yıldırım (2018) also provides anecdotal evidence of this abuse from more recent period.

Before presenting our results on how the central appointment of trustee mayors changed procurement practices and outcomes in impacted municipalities, we present our data and empirical strategy.

### 3 Data

We use a novel administrative dataset covering the universe of state contracts distributed in Turkey between 2011 and 2019.<sup>9</sup> It provides detailed information at the contract level, including but not limited to contract awarding method; type of the procurement (*construction*, *goods*, or, *services*); industry code of the procurement; estimated cost of the procurement, price of the contract, and rebate value; name, district, and province of the procuring state agency; name of the contractor, contract date, etc. From this dataset, we use the contracts granted in the provinces where affected municipalities are located between the two local elections in 2014 and 2019.

We complement this contract-level dataset first with information on the trustee mayor appointments. These include the name of the municipality and appointment date of the trustees ranging between September 11<sup>th</sup>, 2016 and August 29<sup>th</sup>, 2018. Second, we complement it with administrative data from the Turkish Statistical Institute (*TURKSTAT*) on the number of business enterprises and population at the municipality level. Finally we add nightlight data at the district level as a proxy for the level of economic development.

*Outcomes.*—We focus on two sets of outcomes. Our first set of outcomes concerns the contract awarding method, i.e., whether the contract is awarded through the unforeseen event clause, threshold clause, or a sealed-bid auction. Using this information, we construct the following outcome variables at the municipality level: i) the monthly share of each contract awarding method, ii) the monthly share of spending with each contract awarding method based on contract prices, and iii) the monthly share of each contract awarding method based

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<sup>9</sup>The data is publicly available for individual queries on the webpage of the Turkish Public Procurement Authority (*Kamu İhale Kurumu*).

on estimated cost of contracts, the latter being calculated by the procuring entity prior to the contract awarding process.<sup>10</sup>

Our second set of outcomes measure the economic performance of mayors in public procurement based on contract terms. We specifically focus on *contract price*, *rebate*, and *estimated cost* of the procurement. *Contract price* indicates what the procuring entity pays to the contractor. *Estimated cost* is calculated by the procuring entity before the contract awarding process based on the specifics of the purchase. *Rebate*, i.e. value for money, is the discount rate procuring entity attains in contract awarding and calculated as follows:

$$\text{Rebate} = \frac{\text{Estimated Cost} - \text{Contract Price}}{\text{Estimated Cost}}$$

Higher rebate values are more favorable in terms of public interest as they imply that procuring entity pays relatively little compared to the estimated cost of the purchase.

*Main Variable of Interest.*—We are specifically interested in how central takeovers affect the public procurement practices in local governments. Accordingly, our main explanatory variable is a binary indicator of whether a contract is awarded by an appointed trustee mayor as opposed to an elected mayor. We formally define it as follows:

$$\text{Trustee}_i = \begin{cases} 1 & \text{if contract } i \text{ is granted by a trustee mayor} \\ 0 & \text{otherwise.} \end{cases}$$

*Control Variables.*—In all analyses, we control for the number of business enterprises and population level at the municipality level; and the level of nightlight at the district level to proxy the economic development level of the area. We also include year, province, procurement type, and industry fixed effects whenever appropriate.

## 4 Empirical Strategy

In this section, we discuss the details of our empirical strategy. To estimate the effect of central takeovers on law abuse in local governments, our analysis makes a comparison of elected mayors to appointed trustee mayors in their use of *unforeseen event* clause, *threshold* clause, and *sealed-bid auctions*. More specifically, we estimate how much elected and trustee mayors differ in: i) monthly share of contracts awarded with each contract awarding method,

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<sup>10</sup>The sealed-bid auctions are the most common contract awarding method in our sample. 65% of all contracts are awarded through sealed-bid auctions. The remainder is awarded with more discretionary negotiation method justified through *unforeseen event* or *threshold* clauses.

ii) monthly share of spending with each contract awarding method based on contract prices, and iii) monthly share of each contract awarding method based on estimated cost.

We use a staggered Difference-in-Differences (DiD) design to causally estimate these differences. Our DiD setting comprises of multiple time periods (60 months) with the treatment group including 95 municipalities that have been appointed trustees at different points in time –in the span of two years– and remain treated until the end of our analysis period. The never-treated control group consists of 102 municipalities with an elected AKP mayor in the provinces where the trustee-appointed municipalities are located.<sup>11</sup> This unique setting enables us to compare elected and trustee mayors who have the same powers and who are aligned with the same ruling elite –*Erdoğan’s regime*– net of horizontal accountability mechanisms such as judicial or media investigation.

Using this DiD setting and the estimation method by Callaway and Sant’Anna (2021), we first estimate the group-time average treatment effects where groups are defined at the municipality level based on when they first received the trustee mayor. We then aggregate these group-time average treatment effects to an overall treatment effect. In all estimations, we cluster the standard errors at the municipality level. We report the overall treatment effects from these estimations in Section 5.

Our main identification assumption for the causal interpretation of the estimated effects is that the treatment group would have followed a similar trend to that of the control group in the absence of trustee appointments, i.e., the *parallel trends* assumption.<sup>12</sup> Following Callaway and Sant’Anna (2021), we test the plausibility of parallel trends assumption by estimating dynamic treatment effects, i.e., treatment effects based on the length of exposure to the treatment. This method allows us to test both the conditional and unconditional parallel trends, and construct confidence intervals that are robust to potential multiple hypothesis testing problems. In Section 5, we report the dynamic effects and plausibility of the parallel trends assumption.

After estimating the overall treatment effect and the dynamic effects, we proceed to test the robustness of these results in Section 5.2. We first show that our results are similar under *unconditional parallel trends* and *parallel trends conditional on controls* assumptions<sup>13</sup> and

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<sup>11</sup>We show that our results are substantively similar when we use a control group of not-yet-treated municipalities instead of never-treated municipalities. Corresponding results are reported in the Appendix.

<sup>12</sup>Although parallel trends assumptions are not testable due to lack of counterfactual, the standard practice is to run a pre-test of it (Callaway and Sant’Anna, 2021). This implies testing whether treatment and control groups follow a similar trend before the treatment.

<sup>13</sup>The estimation method developed by Callaway and Sant’Anna (2021) is able to attain unbiased estimates under the assumptions of both unconditional parallel trends and parallel trends conditional on covariates.

to the inclusion of controls. We also show that our results remain the same when we use different versions of the outcome and an alternative specification of the control group.

Finally, we show that our results also replicate with a regression discontinuity in time (RDiT) design. This analysis uses a different sample than the DiD estimations. Specifically, we compare trustee mayors with elected DBP mayors whom they replaced using an RDiT design and show that the results are remarkably similar to those from DiD estimations.

## 5 Results

In this section, we first present our baseline analysis and results. In Section 5.2, we test the robustness of our results. In Section 5.3, we test and reject several alternative mechanisms. Section 5.4 provides our results regarding the economic cost of central takeovers. Finally, in Section 5.5, we probe the underlying mechanisms that help explain our baseline results.

### 5.1 Baseline Analysis

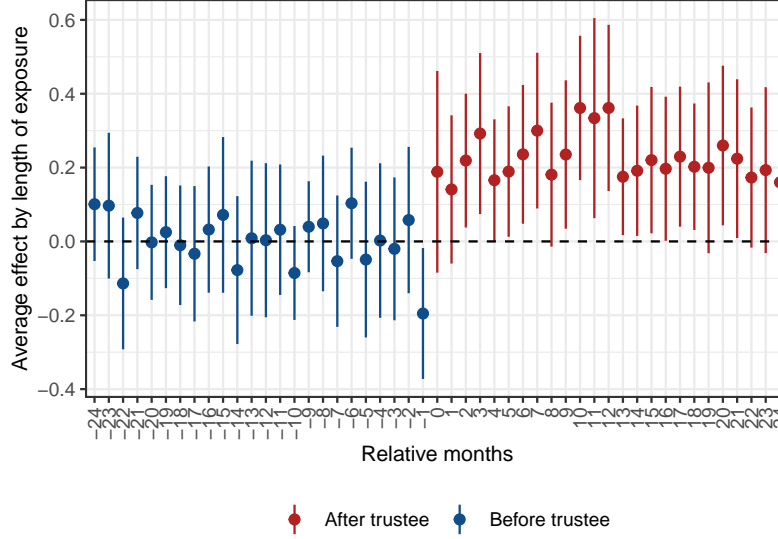
We start by estimating the group-time average treatment effects on i) monthly share of contracts awarded with each contract awarding method, ii) monthly share of spending with each contract awarding method based on contract prices, and iii) monthly share of each contract awarding method based on estimated cost of the contracts, using a staggered Difference-in-Differences (DiD) design (Callaway and Sant’Anna, 2021).

To investigate the dynamic effects and assess the plausibility of parallel trends assumption, we first aggregate group-time average treatment effects to dynamic effects based on the length of exposure to the treatment. Figures 2 and 3 plot these dynamic effects by the length of exposure to the treatment, i.e., *relative month*. According to Figure 2, before the trustee appointments, treatment and control groups do not significantly differ from each other in the share of contracts awarded with the unforeseen event clause, giving credibility to our DiD design. In contrast, after trustee appointments, the use of unforeseen event clause by trustee-appointed municipalities start to increase and this effect persists for almost 2 years.

Figure 3 reveals a consistent reverse pattern for the share of contracts awarded with sealed-bid auctions. Specifically, the treatment and control municipalities do not differ from each other before trustee appointments. After central takeovers, however; the share of contracts awarded by sealed-bid auction declines significantly for the trustee-appointed municipalities. Similarly, the effects persist for almost 2 years. Figure A.1 in the Appendix reports the dynamic effects for the threshold clause, for which we do not find any difference between

the treatment and control municipalities either before or after the treatment.<sup>14</sup> Note that the confidence intervals around the dynamic effects are robust to multiple hypothesis testing both in conditional and unconditional parallel trends assumption checks.

Figure 2: Dynamic effects: share of contracts awarded with the unforeseen event clause



*Notes:* The figure plots the dynamic effects from staggered DiD estimations using Callaway and Sant’Anna (2021) based on length of exposure to the treatment. The outcome variable is the monthly share of contracts awarded with the unforeseen event clause. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

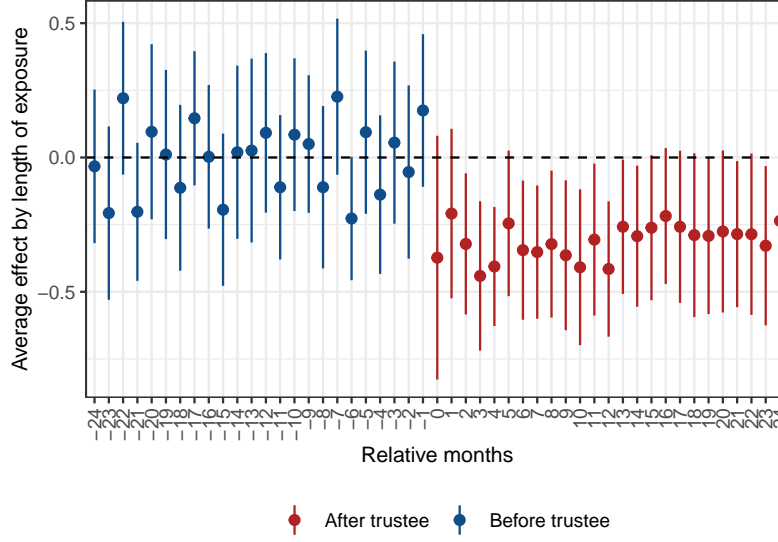
We then aggregate these dynamic effects into overall treatment effects by taking the weighted average of group-time treatment effects.<sup>15</sup> Table 1 presents the results for the first outcome, *monthly share of contracts awarded with each contract awarding method*. The first two models reports the share of contracts awarded with the unforeseen event clause, which is normally reserved for situations of extreme urgency and allows procuring entity to exercise more discretion in contract awarding. Trustee mayors use this clause significantly and substantially more than their elected AKP counterparts. Specifically, trustee mayors invoke this clause 24 percentage points more than the elected mayors, which is a substantial effect as it translates into 0.73 standard deviation of the outcome.

The increase in the share of contracts awarded with the unforeseen event clause comes at the expense of more competitive sealed-bid auctions. Trustee mayors award much fewer

<sup>14</sup>We report the tests of both conditional –with controls– and unconditional –without controls– parallel trends for our other outcomes in the Appendix A.2 and A.3. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level.

<sup>15</sup>Weights are chosen proportional to the group sizes.

Figure 3: Dynamic effects: share of contracts awarded with sealed-bid auction



*Notes:* The figure plots the dynamic effects from staggered DiD estimations using Callaway and Sant’Anna (2021) based on length of exposure to the treatment. The outcome variable is the monthly share of contracts awarded with sealed-bid auction. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

contracts with the competitive sealed-bid auctions compared to the elected mayors. Columns 3 and 4 in Table 1 show this clearly: the trustee mayors award contracts through sealed-bid auctions 32 percentage points less than the elected mayors (0.75 standard deviation of the outcome).

We next report on how much elected and trustee mayors differ in their use of threshold clause. This clause allows procuring entities to bypass the sealed-bid auction and use the more discretionary negotiation method for small purchases below a certain threshold. Columns 5 and 6 in Table 1 show that trustee mayors are statistically not different from the elected mayors in their use of threshold clause of the procurement law.

The absence of such difference does not necessarily mean that the officials do not abuse this clause. To further analyze the case of threshold clause, we focus on cost manipulation practices, i.e., artificial manipulation of the estimated cost to keep it just below the threshold value. To test whether public officials have been engaging in such cost manipulation, we first normalize the estimated cost of the contracts by dividing it with the corresponding threshold value.<sup>16</sup>

<sup>16</sup>The threshold values are annually decided by the Public Procurement Authority in Turkey. We divide the estimated cost of each contract by the threshold value announced for the same year.

Table 1: DiD estimates: monthly share of contract awarding methods

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee	0.229 [0.143, 0.316]	0.236 [0.154, 0.318]	-0.305 [-0.428, -0.181]	-0.322 [-0.453, -0.192]	0.027 [-0.101, 0.154]	0.034 [-0.088, 0.156]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4968	4968	4968	4968	4968	4968

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of the respective contract awarding method. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Figure 4 plots the density distribution of the contracts granted by elected and trustee mayors. The dashed gray line corresponds to the mass point where the estimated cost of the contracts equals to the threshold value. Figure 4 shows clear evidence of bunching just before the threshold values, both by elected and trustee mayors. In sum, both types of mayors engage in substantial cost manipulation to gain more discretion in contract awarding.<sup>17</sup>

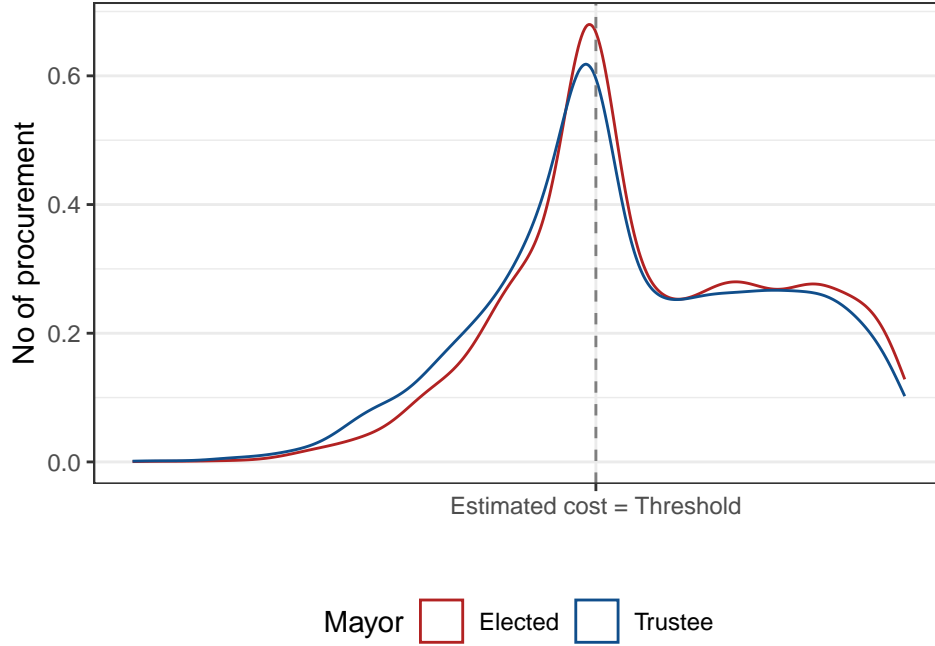
So far, we have reported treatment effects on the share of contracts granted with each awarding method. However, one can argue that the changes in the frequency of contract awarding methods are not consequential *per se* unless they are also accompanied by respective changes in the amount of spending. Our other two outcomes serve this purpose. Accordingly, we first show the effect of trustee appointments on the *monthly share of spending with each contract awarding method based on contract prices*. Table 2 reports the results of this analysis, which are in line with those in Table 1.

Under trustee mayors, the share of spending with unforeseen event clause is 29 percentage points higher than that of the elected mayors. This increase in spending with the unforeseen event clause is almost equivalent to the decrease in spending with the sealed-bid auctions. The share of spending with the sealed-bid auction is 28 percentage points lower under trustee mayors. We finally report the same overall treatment effects on our third outcome, the *share of spending with each contract awarding method based on the estimated cost of contracts*. The results, reported in Table A.1, are quantitatively and qualitatively very similar to our results in Table 1 and 2.

<sup>17</sup>We also show that trustee mayors are similar to elected DBP mayors –whom they replaced– in terms of cost manipulation. See Figure A.7 in the Appendix.



Figure 4: Cost manipulation for more discretion: elected vs. trustee mayors



*Notes:* The figure plots distributions of estimated cost of contracts under elected (AKP) and trustee mayors. The dashed line corresponds to the threshold value below which the procuring authority attains more discretion in contract awarding process.

## 5.2 Robustness Tests

We conduct a series of analyses to show the robustness of our results to alternative versions of the outcome, alternative assumptions, and a different identification strategy. First, as detailed in the previous section, we report evidence for the plausibility of both conditional and unconditional parallel trends assumption. Accordingly, our DiD estimations in Tables 1, 2, and A.1 report estimates that are consistent with each other from models with and without control variables, which we refer to as our *baseline* analysis. Second, we repeat the same type of analysis with three different versions of our outcome variables, as also described in the previous section. The results indicate that central trustee appointments have quantitatively and qualitatively similar effects on each outcome.

Third, we test the robustness of our results to the specification of the control group. Our baseline analysis uses a control group of municipalities that have never been treated, i.e., that have never been appointed a trustee mayor. Alternatively, we construct a control group of not-yet-treated municipalities. Doing so includes the pre-treatment periods of trustee-appointed municipalities in the control group. As shown in Appendix A.5, our results remain

Table 2: DiD estimates: monthly share of spending based on contract prices

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee	0.275 [0.197, 0.352]	0.288 [0.195, 0.381]	-0.261 [-0.414, -0.108]	-0.277 [-0.418, -0.135]	-0.014 [-0.142, 0.115]	-0.011 [-0.134, 0.112]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4918	4918	4918	4918	4918	4918

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Call-away and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on contract prices. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

both quantitatively and qualitatively similar.

Finally, we use an entirely different empirical strategy and estimation technique. We compare trustee mayors with the mayors whom they replaced (elected DBP mayors) in a before/after-trustee comparison using a Regression Discontinuity in Time (RDiT) design (Hausman and Rapson, 2018). Our running variable in this setting is the number of days relative to the trustee appointment date with the cut-off value set as 0. Accordingly; treated units fall to the right of the cut-off, whereas non-treated units fall to the left.

For estimation, we follow Calonico et al. (2015) and use a non-parametric approach with a triangular kernel and allow for different bandwidths at different sides of the cut-off. On each side, we use optimal bandwidths that minimize the mean-squared error (MSE). We, however, also experiment with manually chosen bandwidths to show that results are not driven by a specific bandwidth choice.

We present baseline results from our RDiT analyses in Table 3.<sup>18</sup> This analysis compares the state contracts granted by trustee mayors and elected DBP mayors whom they replaced. Remarkably, the bias-corrected robust RDiT estimates show very similar results to our baseline DiD estimates, proving the robustness of our results to an entirely different identification strategy. In particular, trustees are more likely to use the unforeseen event clause compared to the elected DBP mayors by around 19-20%. Similarly, they are less likely to distribute state contracts with sealed-bid auctions by around 25-32% depending on the model specification. In line with the baseline results, we do not find a difference in the use of threshold clause.

<sup>18</sup>See Figures A.8, A.9, and A.10 in the Appendix for the regression discontinuity (RD) plots.

### 5.3 Alternative Mechanisms

In this section, we test and reject several alternative mechanisms that could explain the estimated differences between elected and appointed trustee mayors in their practice of the procurement law. First, one could argue that trustee mayors might be using the unforeseen event clause more often due to a larger number of natural disasters in their jurisdictions. To investigate this possibility, we check whether trustee-run municipalities suffered more natural disasters during the analyzed period. According to the International Disaster Database (EM-DAT)<sup>19</sup>, no natural disasters were recorded in the region (where both trustee-appointed and elected-mayor municipalities are located) during our period of analysis.

Table 3: Regression discontinuity in time (RDiT) estimates

	Unforeseen event		Sealed-bid acution		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee mayor	0.196*** (0.075)	0.212*** (0.071)	−0.313*** (0.109)	−0.264*** (0.084)	−0.035 (0.072)	−0.041 (0.065)
Num.Obs.	7812	7812	7812	7812	7812	7812
Covariates	No	Yes	No	Yes	No	Yes
Year FE	No	Yes	No	Yes	No	Yes
Province FE	No	Yes	No	Yes	No	Yes
Procurement type FE	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes
Kernel	Triangular	Triangular	Triangular	Triangular	Triangular	Triangular
Num.Obs.Effective.Left	1175	358	520	408	635	599
Num.Obs.Effective.Right	579	766	595	1045	1402	1072

*Notes:* The table reports estimates obtained from RDiT estimations using Calonico et al. (2015) with triangular kernel and optimal bandwidths which are allowed to differ between two sides of the cut-off. The dependent variables are binary indicators of whether the contract is awarded with the respective contract awarding method. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. *Procurement type FE* indicates the type of the procurement: goods, services, or construction. *Industry FE* variable indicates the industry code of the procurement and include 44 levels. Standard errors are clustered at the municipality level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

A second alternative mechanism is the adverse selection of governors as trustee mayors. In other words, if the governors who were appointed as trustee mayors –*trustee governors*– were “bad apples” to start with, this could explain the observed differences in contract awarding practices (Leon, 2013). We test this adverse selection mechanism by comparing contracts

<sup>19</sup>EM-DAT accepts an event as a disaster if any of the following three holds: there are at least ten deaths because of the event, 100 or more people are affected/injured or become homeless, there is a declaration by the country of a state of emergency and/or appeal for international assistance. See <https://public.emdat.be/data> for more details.

granted by trustee mayors in their governorship offices to the contracts granted by other similarly ranked governors in Turkey. The results, presented in Table A.9 in the Appendix, show that trustee governors are not different than their fellow governors in terms of their use of the unforeseen event clause, threshold clause, and sealed-bid auction method. Therefore, it is not likely that the adverse selection of governors explains the differences we observe between trustee mayors and elected AKP mayor.

Third, we consider whether the effects we estimated might be due to the spillovers from the first batch of trustee appointments. This would be the case if the elected mayors from DBP –who were not sacked yet– changed their behavior after witnessing the first set of appointments. Nevertheless, the dynamic effects in pre-treatment periods reported in Figures 2, 3, and A.1 do not support this narrative as the never-treated control group and to-be sacked DBP mayors follow parallel trends until the trustee takeovers.

Another alternative explanation of our results concerns the levels of violence in the region of interest, which has a history of armed conflict. We present three different pieces of evidence, each ruling out this alternative explanation in their own right. First, although the procurement law grants the procuring agencies with a distinct clause that justifies the more discretionary negotiation method for purchases regarding security, this clause is rarely used by mayors: only 1% of all contracts are granted with this clause in the region.

We then conduct two additional tests. First, we run our analysis on a sample of geographically-matched municipalities. We match each trustee-appointed municipality to the three closest neighboring municipalities. This geographically matched sample ensures that treated and control municipalities experience similar levels of violence as the violent events typically take place in rural areas outside the municipal boundaries. The results from the geographically matched sample are substantively similar to our baseline DiD results, reported in Appendix B.2. Second, we repeat our baseline analysis by excluding municipalities with significant violent event history. The results, reported in Appendix B.3, are again substantively similar to our baseline results.

## 5.4 Economic Consequences

Although trustees grant state contracts with more discretion than their elected counterparts by abusing the procurement law, a strand of literature suggests that more discretion might be good for public (See, among others, Coviello et al., 2018; Decarolis et al., 2020). In this section, we analyze whether and how much the documented cases of law abuse and the resultant increased discretion costs to the public.

We focus on two outcomes to understand the economic effects of increased discretion on public finance: contract price and rebate. The median rebate value in our sample is 14%, meaning that the public enjoyed 14% discount relative to the estimated cost. The median contract price is \$109,000 (in 2010 prices).

When we specifically focus on contracts granted by trustee mayors, the mean rebate values are 13% and 22% in contracts granted with the unforeseen event clause and sealed-bid auction, respectively. The procuring public agency attains significantly less discount when the trustee mayors grant contracts using the unforeseen event clause. Similarly, while the resulting median contract price for contracts granted with sealed-bid auction is \$156,000, it increases to \$173,000 when the unforeseen event clause is used, bringing around 11% increase.

In Table 4, we investigate the economic effects mentioned above in a regression framework. Specifically, we focus on contract price and rebate, and compare how much these outcomes change when the unforeseen event clause is used instead of sealed-bid auctions. Under trustee mayors, we find that the contracts granted with the unforeseen event clause bring about a 9.5 percentage points decrease in rebate compared to the contracts granted with sealed-bid auctions. This translates into a 40% decrease in rebate. Contract prices, on the other hand, increase by around 22%. Under elected mayors, we do not find any price differential between contracts granted with the unforeseen event clause and sealed-bid auctions. We, however, do find that rebate decrease by 7.5 percentage points when they grant the contract with unforeseen event clause instead of sealed-bid auctions (translating into a 35% decrease in rebate). Together with the baseline results, these findings suggest that the elected mayors use the unforeseen event clause much less often than the trustee mayors. When they do use it, however; its economic cost is smaller.

When trustee mayors use the threshold clause, the resulting contract price is significantly lower. This is a mechanical change since the estimated cost of the contracts granted with the threshold clause need to be below a certain threshold. What is more interesting, however, is that the public enjoys less discount by around 11 percentage points in contracts granted with the threshold clause compared to contracts granted with sealed-bid auction. Elected mayors, on the other hand, fare again better than trustee mayors. They bring about slightly less reduction in rebate and more reduction in price.

Overall, the impact of trustees mayors' misconduct by abusing the unforeseen event clause alone is economically substantial.

Table 4: OLS estimates for contract terms: trustee and elected (AKP) samples

	Trustee sample		Elected (AKP) sample	
	Price (log)	Rebate	Price (log)	Rebate
Ref.level: Sealed-bid auction				
Unforeseen events	0.217** (0.098)	-0.095*** (0.010)	-0.049 (0.105)	-0.075*** (0.011)
Threshold clause	-0.803*** (0.057)	-0.114*** (0.013)	-1.079*** (0.089)	-0.086*** (0.011)
Covariates	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Procurement type FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Num.Obs.	4359	4349	4033	4014

*Notes:* The table reports results from OLS estimations. The dependent variable are contract price (in TL, in real terms, in log) and rebate. The main explanatory variable is the contract awarding method and the its reference level is the *Sealed-bid auction*. Trustee sample includes the contracts awarded only by trustee mayors. Elected (AKP) sample includes contracts awarded by elected (AKP) mayors after the first trustee appointment. Covariates include population and number of enterprises at the municipality level, and the level of nightlight at the district level. *Procurement type FE* indicates the type of the procurement: goods, services, or construction. *Industry FE (2-digit)* and *Industry FE (3-digit)* variables indicate the industry code of the procurement and include 44 and 182 levels, respectively. Standard errors are clustered at the municipality level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## 5.5 Potential Mechanisms

In this section, we probe the potential underlying mechanisms that help explain the observed differences between elected and centrally appointed trustee mayors. In most centralization scenarios, there are many simultaneous effects operating through multiple channels that make it hard to disentangle the underlying mechanisms. For example, when the centralization reform transfers the responsibilities of some local offices to a central one, the central office utilizes not only a larger budget operationalized over many localities but also a stronger authority overall. While the larger budget and operation scope can create economies of scale and coordination benefits, stronger authority would mean a lack of checks and balances that could harm the decision-making process. Our setting is unique in the sense that central takeovers solely result in the transitioning of the appointed governors to the mayor position within the affected municipalities. Since it is the same office, only with different mayors, there is no change in the fiscal and administrative authority of the mayoral offices. This reduces the number of candidate mechanisms to a few so that we can actually investigate

each and offer insights.

We first consider the possibility of trustee mayors holding a different agenda –e.g., an agenda dictated by the ruling elite– than elected mayors. As the central government showed a clear interest in capturing the opposition municipalities through central appointments, it might as well have a distinct agenda to win the hearts and minds of the population to expand its support base in the area. To test this mechanism, we look at the level and the composition of the municipality spending via procurement. We first try inferring whether trustee-appointed municipalities receive more resources from the central government. To test this hypothesis, we repeat our main DiD analyses and check for discontinuity around the trustee appointment dates using the *total procurement spending* as the outcome variable. The DiD results, reported in Table A.16, and the regression discontinuity plot, Figure A.11, indicate that trustee-appointed municipalities do not differ from municipalities with elected mayors in their total spending on procurement <sup>20</sup>.

We then compare the trustee mayors to the elected AKP mayors in terms of their composition of spending. If the trustee mayors took over the office with a special agenda to expand the support base of the ruling party, we should then expect to see trustee mayors pouring more money into purchases related to areas that are deemed important by citizens, such as agriculture and education (Malesky et al., 2014). To check whether this has been the case, we test whether the spending by trustee mayors on important public services differs from that of elected mayors substantially. Table 5 indicates that trustee mayors mostly do not differ much from elected mayors in terms of their spending on different public services except in education and security. These differences are, however, too small –respectively 0.8 and 1 percentage points– to conclude a distinct agenda driving our results. To be clear, we are not rejecting the presence of such an agenda held by trustee mayors. We rather argue that this agenda –whether it exists or not– does not seem to drive our results.

The second potential mechanism relates to a central discussion in political economy about whether more discretion leads to better quality services (See, e.g., Coviello et al., 2018; Decarolis et al., 2020). In our setting, this mechanism could be effective as the central takeover of 95 municipalities via trustee appointments could help the central government to reap the so-called benefits of political centralization –namely better coordination and economies of scale– especially when more discretion is enjoyed by these trustees (Seabright,

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<sup>20</sup>As a caveat, we should note that the central government can use other methods to support the trustees, such as letting them hire more workers or easing their financing constraints. We cannot analyze such factors due to the lack of data. However, even if such complementary methods are used, we contend that the agenda of the government would be mainly reflected in procurement as it is the most direct way of transferring resources to the localities.

1996; Arora et al., 2023).

Table 5: Composition of spending

	Agriculture	Construction	Culture	Education	Health	Public services	Security	Transportation
Trustee mayor	−0.005 (0.011)	0.016 (0.033)	0.008 (0.012)	−0.008** (0.003)	−0.004 (0.003)	0.034 (0.036)	0.011 (0.012)	−0.084*** (0.021)
Covariates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Procurement type FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Num.Obs.	3810	3810	3810	3810	3810	3810	3810	3810

*Notes:* The table reports results from OLS estimations on a sample contracts granted by trustee and elected mayors after the first set of trustee appointments. The dependent variable is the monthly share of spending in the respective category. The main variable of interest is *Trustee mayor*, indicating whether the contract is granted by a trustee mayor. Covariates include population and number of enterprises at the municipality level, and the level of nightlight at the district level. *Procurement type FE* indicates the type of the procurement: goods, services, or construction. Standard errors are clustered at the municipality level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Accordingly, we test whether more discretion by trustee mayors is associated with better procurement quality. If the trustee mayors delivered better quality procurement by exercising more discretion in contract awarding, we should then observe a higher estimated cost for a similar purchase when it is awarded via the unforeseen events clause than when it is awarded with a sealed-bid auction.<sup>21</sup> To check whether this has been the case, we compare the estimated costs of similar contracts, as identified by the procurement type and industry code of the procurement. To further increase the comparability of the contracts, we use two industry codes: (i) 2-digit industry code culminating in 44 different industrial sectors, (ii) 3-digit industry code culminating in 182 different industrial sectors. Table 6 indicates that the estimated costs –within procurement type and industry– do not significantly change with the use of the unforeseen event clause compared to sealed-bid auction under neither trustee nor elected mayors. This indicates that there is no quality improvement –to the extent that the costs of items can measure it– when the mayors exercise more discretion. We conclude that discretion does not lead to better outcomes especially when it happens through political centralization.

It is important to note that, there is a decline in the estimated costs under the threshold clause, which is a side effect of the manipulation around the threshold: As this clause necessitates the estimated cost to be under a certain threshold, the procurers have to reduce the estimated costs either by dividing the contracts into smaller pieces or by lowering the

<sup>21</sup>Note that the estimated cost of the procurement is calculated by the procuring agency prior to the contract awarding process. Therefore, when the higher quality goods are contracted instead of the regular goods they would have a higher estimated cost.



estimated costs artificially.<sup>22</sup>

Table 6: OLS estimates for estimated cost: trustee and elected (AKP) samples

	Dept. Variable: Estimated cost (log)			
	Trustee sample		Elected (AKP) sample	
	(1)	(2)	(3)	(4)
Ref.level: Sealed-bid auction				
Unforeseen events	0.082 (0.102)	0.050 (0.113)	-0.144 (0.101)	-0.137 (0.104)
Threshold clause	-0.968*** (0.065)	-0.945*** (0.076)	-1.217*** (0.080)	-1.253*** (0.079)
Covariates	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Procurement type FE	Yes	Yes	Yes	Yes
Industry FE (2-digit)	Yes	No	Yes	No
Industry FE (3-digit)	No	Yes	No	Yes
Num.Obs.	4359	4359	4033	4033

*Notes:* The table reports results from OLS estimations. The dependent variable is the estimated cost of the contract (in TL, in real terms, in log). The main explanatory variable is the contract awarding method and the reference level of it is the *Sealed-bid auction*. Trustee sample includes the contracts awarded only by trustee mayors. Elected (AKP) sample includes contracts awarded by elected (AKP) mayors after the first trustee appointment. Covariates include population and number of enterprises at the municipality level, and the level of nightlight at the district level. *Procurement type FE* indicates the type of the procurement: goods, services, or construction. *Industry FE (2-digit)* and *Industry FE (3-digit)* variables indicate the industry code of the procurement and include 44 and 182 levels, respectively. Standard errors are clustered at the municipality level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Finally, we investigate the plausibility of the local accountability mechanism in driving the observed differences between elected and appointed trustee mayors. As the appointed mayors do not face a downward accountability towards the local residents but an upward accountability to the political figures that can appoint and dismiss them, they fear less from the voters, implying a decrease in local accountability.

To test whether this has been an effective mechanism, we first check whether trustee mayors ran for election in the next local or national elections. We find that out of the 136 trustees in our sample, only 4 trustee mayors ran for election. This indicates a lack of local accountability as the trustee mayors did not have an electoral accountability concern in mind during their trusteeship.<sup>23</sup> Reassuringly, according to the Higher Election Board

<sup>22</sup>Note that despite the estimated cost staying under the threshold, the actual contracted price can be higher than the threshold in this type of procurement.

<sup>23</sup>Out of these four, two of them ran for election in their hometowns both in other regions. Therefore,

(*YSK*), none of the other candidates who competed in the 2019 local elections in Turkey held similar positions to trustees’ primary positions: district, province, or vice governorship. This further strengthens the argument of appointed trustee mayors lacking local accountability.

Our results regarding the abuse of law by elected and trustee mayors provide supporting evidence for the local accountability –or lack thereof– mechanism. Note that, we have already documented: i) trustee mayors abuse the unforeseen event clause much more than elected mayors, and ii) trustee mayors and elected mayors do not differ in how often they use the threshold clause and they both engage in substantial cost manipulation for more discretion in contract awarding.

These results resonate well with the findings by Ferraz and Finan (2011) and Lockwood et al. (2022) that types of malpractices that are easily detectable by voters are committed less by officials who face electoral accountability. In our setting, voters can easily detect unjustified uses of unforeseen event clause through the Public Procurement Authority’s electronic platform that is open to the public.<sup>24</sup> The more subtle cost manipulation, on the other hand, is not easily detectable by voters at the contract level but requires data collection and statistical data analysis such as the one in this paper.<sup>25</sup> Taken together, we find the removal of local accountability as an effective underlying mechanism.

## 6 Conclusion

The intricate relationship between political centralization and the nature of governance at the local level has, for long, been a subject of significant debate. Leveraging a unique setting in Turkey, this paper sheds light on the effects of central government takeovers of local jurisdictions on public procurement practices, specifically focusing on law abuse and economic efficiency. Our findings provide robust evidence that trustee mayors, appointed by the central government, display increased tendencies towards exploiting legal loopholes, notably the unforeseen event clause, in public procurement regulations unlike their elected counterparts. Such law abuse costs more to the public in terms of inflated contract prices

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only two actually were candidates in the places where they have been serving as trustees. We drop all four from the sample and repeat our baseline analysis. The results are largely in line with the baseline results and reported in the Appendix A.4.

<sup>24</sup>The awarding method of each contract is publicly available at the electronic platform of the *Public Procurement Authority* in Turkey. Anyone can look up whether a certain contract by a certain public entity was awarded with a sealed-bid auction or with the more discretionary method of negotiation without a prior call by invoking the unforeseen event or threshold clause.

<sup>25</sup>In the absence of free and independent media, it is not very likely neither that cost manipulation practices would make it to the news.

and reduced value for money.

These results, supported by a rigorous empirical strategy, underscore the importance of local accountability in curbing malfeasance and promoting efficient procurement practices. The shift from elected to appointed mayors seems to engender an environment where discretionary power is more susceptible to misuse, possibly due to reduced local accountability and a heightened focus on maintaining favor with central political elites. Moreover, the absence of differences in the utilization of the threshold clause between both sets of mayors offers a deeper insight into the broader dynamics of discretion and the nuanced ways in which it can be wielded.

Our work contributes to the literature in three key ways. Firstly, it introduces rigorous causal evidence into the discussions surrounding the benefits and pitfalls of political decentralization, challenging conventional notions with fresh insights from Turkey’s authoritarian context. Secondly, it illuminates the intricate mechanisms that underlie the behaviors of central appointees, emphasizing the profound role local accountability plays in shaping administrative decisions at the municipal level. And lastly, by introducing a novel metric for gauging law abuse, our study expands the analytical toolkit available for scrutinizing procurement discretion, offering future researchers a more comprehensive lens through which to view such issues.

In summary, as countries grapple with the implications of increasing authoritarianism and its concomitant drive for centralization (Malesky et al., 2014), understanding the nuanced impacts of such shifts on governance becomes ever more critical. Our findings from Turkey underscore the importance of preserving local accountability structures to safeguard both economic efficiency and the rule of law. While centralization might occasionally present coordination advantages, it is essential to strike a balance, ensuring that it does not come at the expense of transparency, efficiency, and the broader public interest. Given the current global trend towards authoritarianism and centralization, understanding these dynamics is crucial for policymakers, scholars, and citizens alike.

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# A Appendix: Robustness Tests

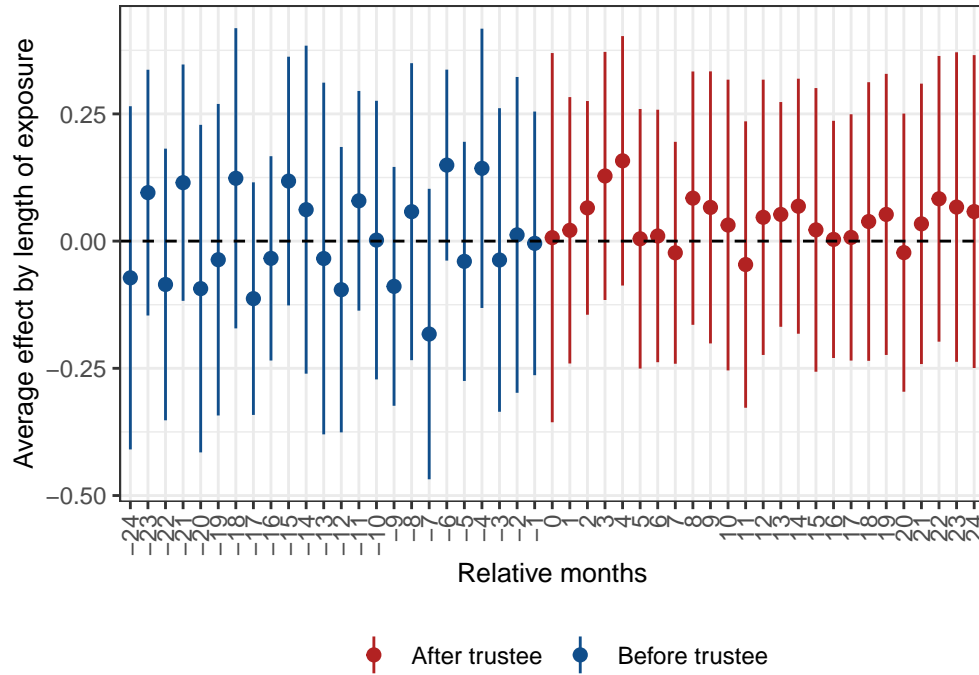
## A.1 DiD Analysis: Estimated Cost of Contracts

Table A.1: DiD estimates: monthly share of spending based on estimated cost of contracts

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee	0.273 [0.191, 0.354]	0.286 [0.192, 0.380]	-0.258 [-0.399, -0.117]	-0.277 [-0.423, -0.131]	-0.015 [-0.149, 0.120]	-0.012 [-0.137, 0.112]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4918	4918	4918	4918	4918	4918

The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on the estimated cost of contracts. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Figure A.1: Dynamic effects: share of contracts awarded with the threshold clause

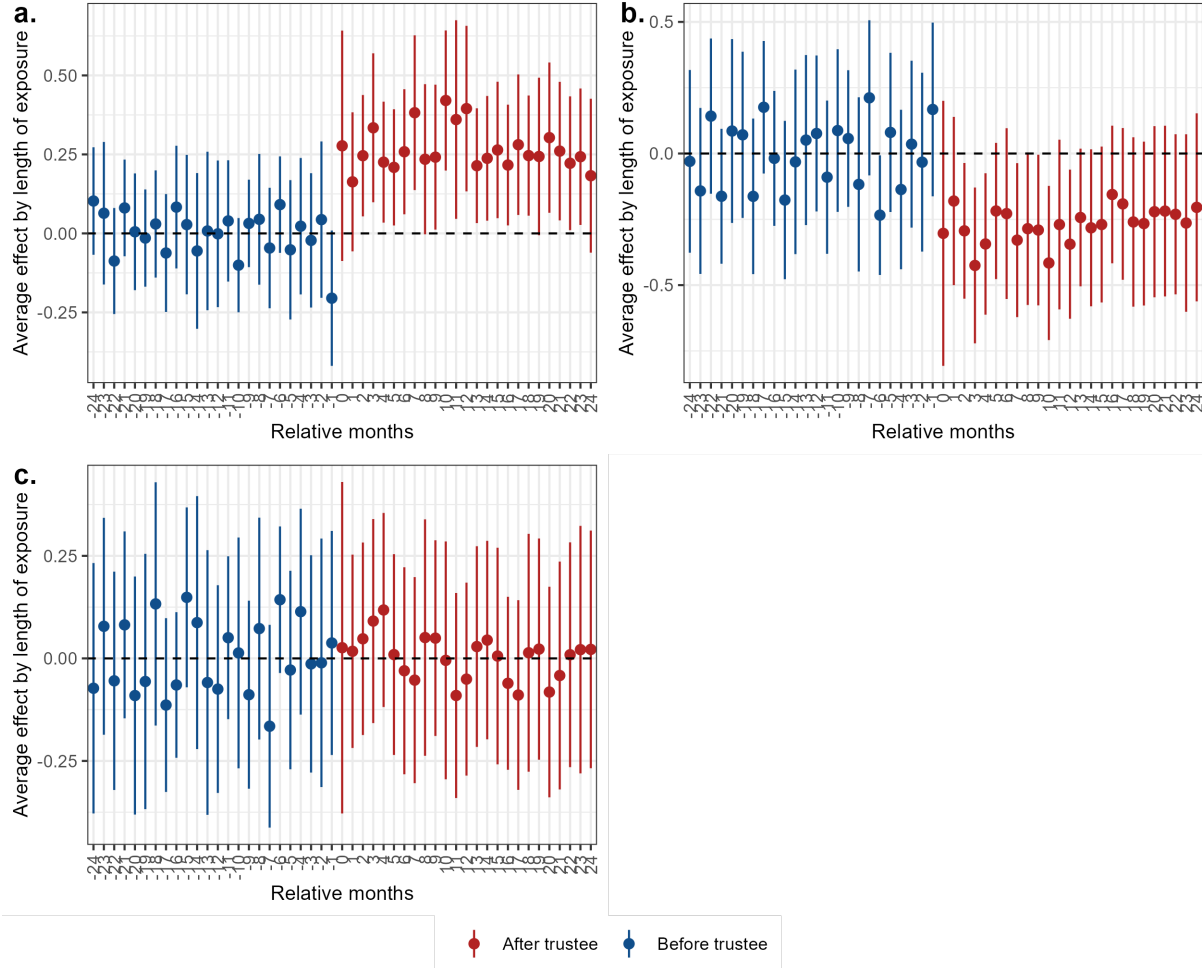


*Notes:* The figure plots the dynamic effects from staggered DiD estimations using Callaway and Sant’Anna (2021) based on length of exposure to the treatment. The outcome variable is the monthly share of contracts awarded with the threshold clause. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

## A.2 Unconditional Parallel Trends

### A.2.1 Outcome II: monthly share of spending based on contract prices

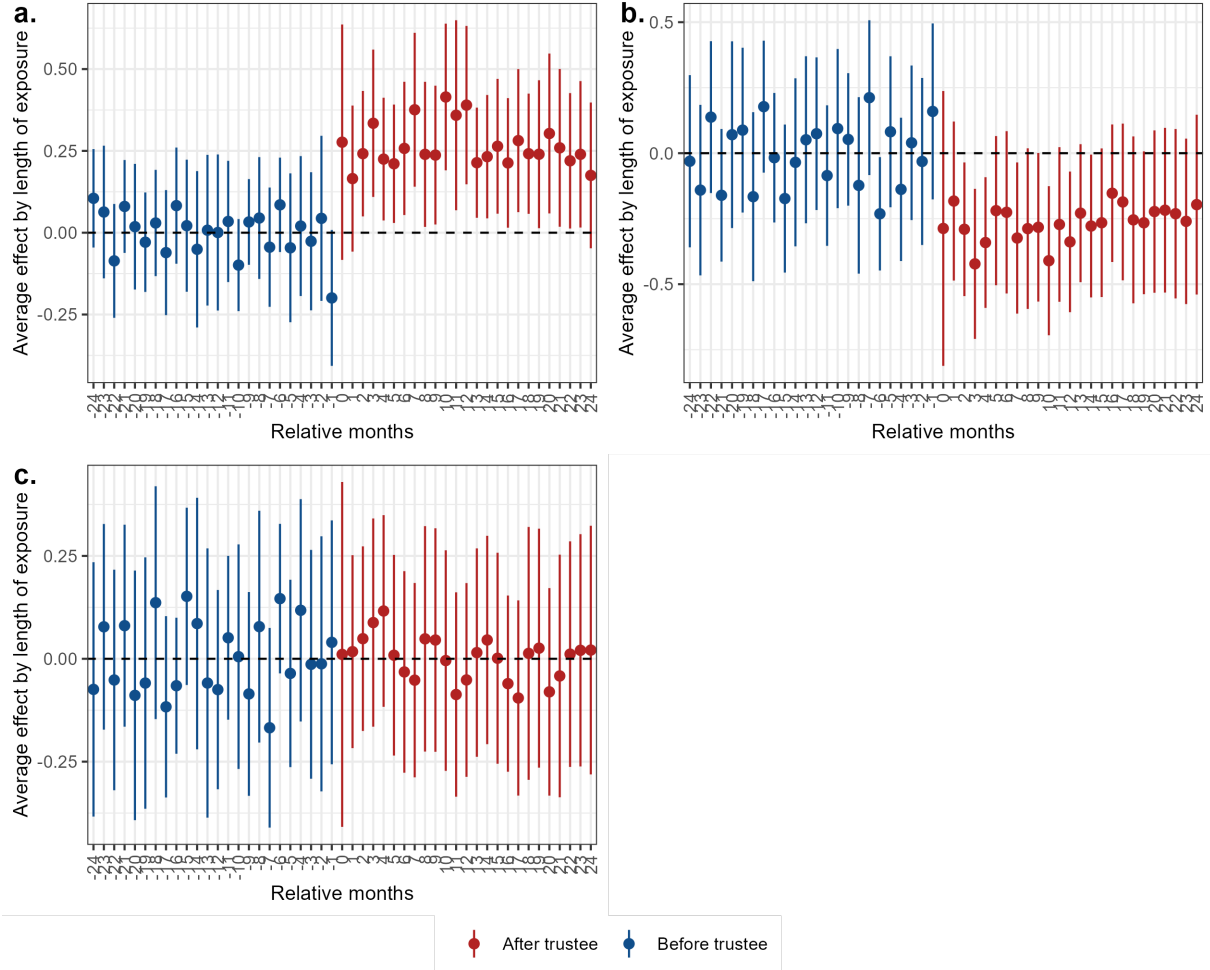
Figure A.2: Dynamic effects: share of spending based on contract prices



*Notes:* The figure plots the dynamic effects from staggered DiD estimations using Callaway and Sant'Anna (2021) based on length of exposure to the treatment. The outcome variable is the monthly share of spending based on contract prices with unforeseen event clause in Panel (a), sealed-bid auction in Panel (b), and threshold clause in Panel (c). Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

### A.2.2 Outcome III: monthly share of spending based on estimated cost of contracts

Figure A.3: Dynamic effects: share of spending based on estimated cost of contracts

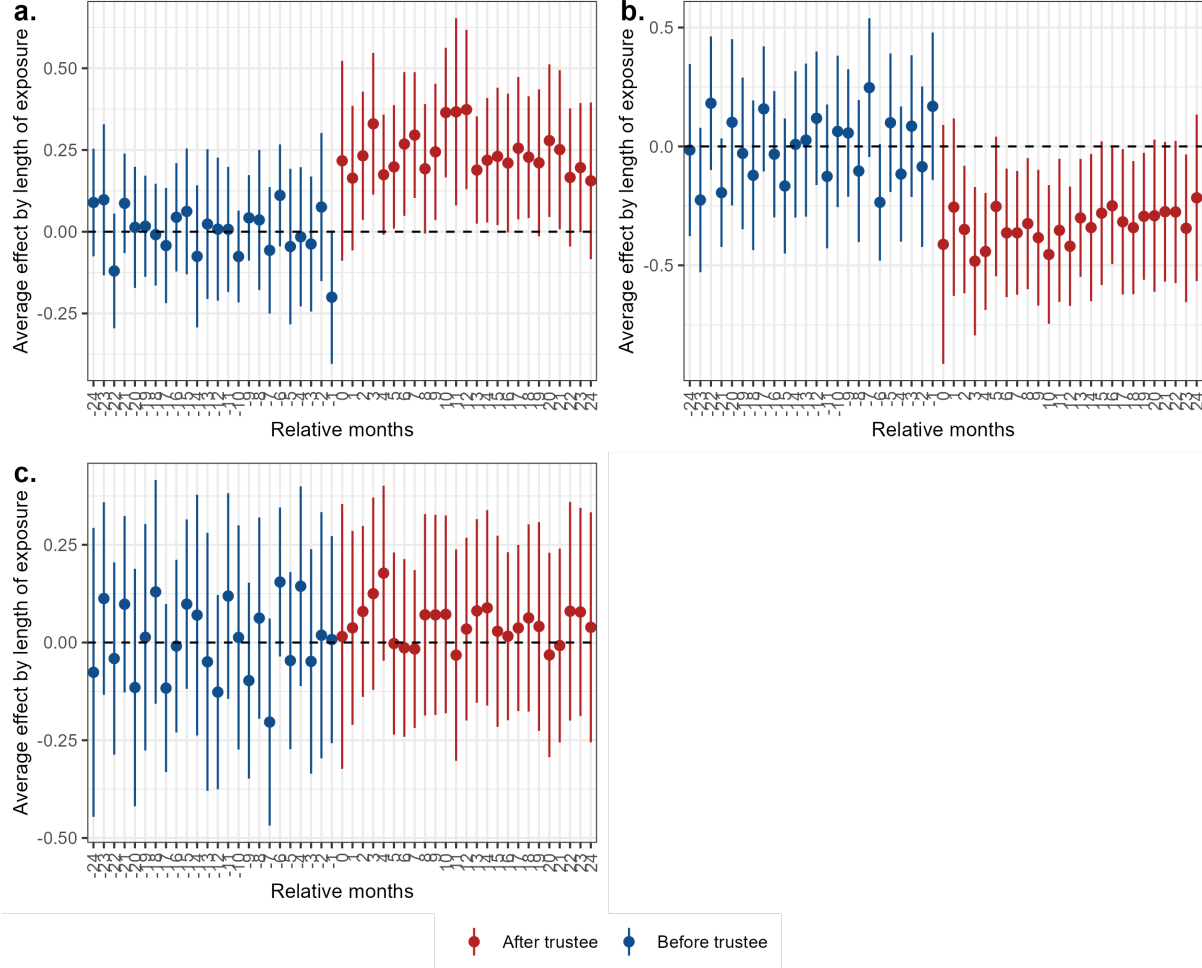


*Notes:* The figure plots the dynamic effects from staggered DiD estimations using Callaway and Sant'Anna (2021) based on length of exposure to the treatment. The outcome variable is the monthly share of spending based on estimated cost of contracts awarded with unforeseen event clause in Panel (a), sealed-bid auction in Panel (b), and threshold clause in Panel (c). Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

## A.3 Conditional Parallel Trends

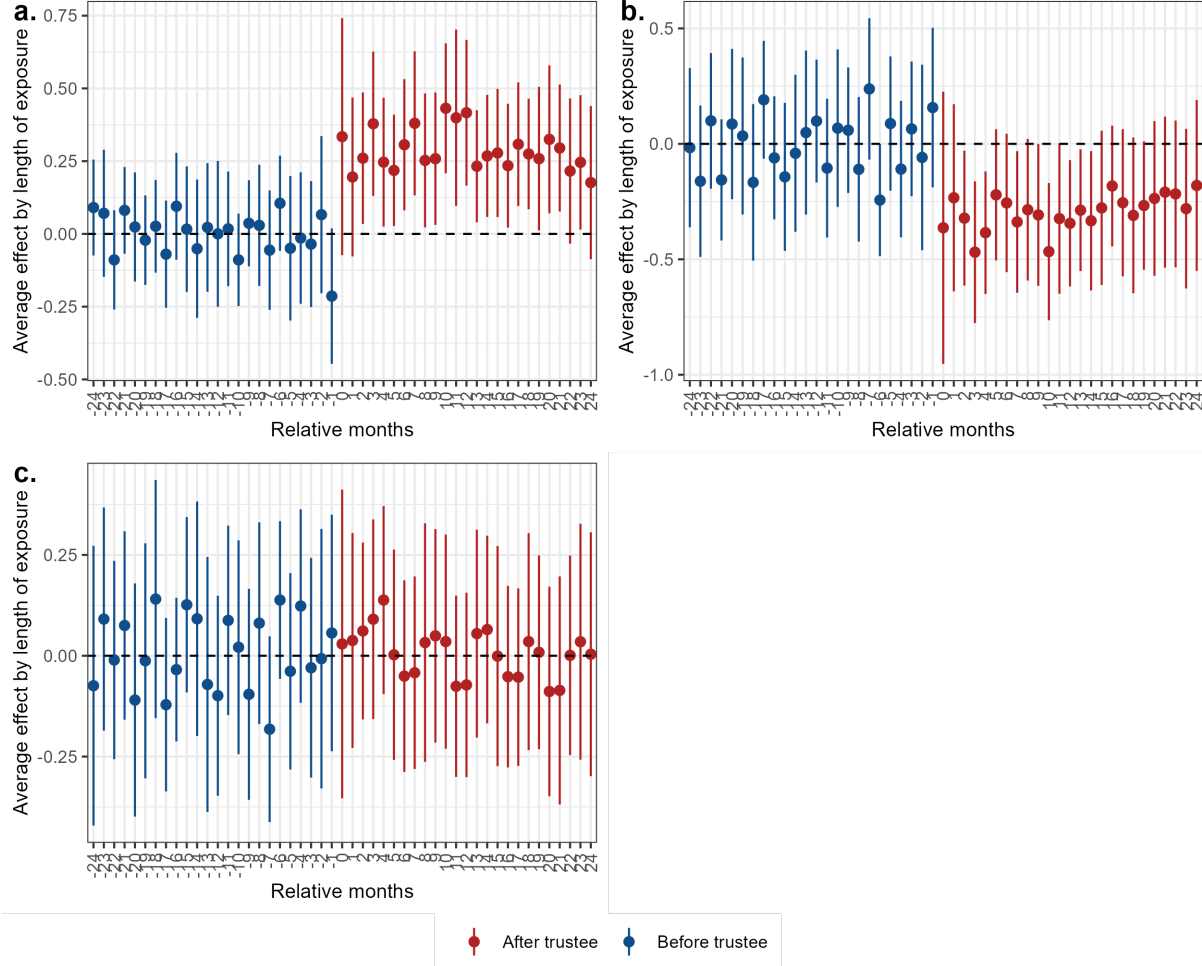
### A.3.1 Outcome I: monthly share of contract awarding methods

Figure A.4: Dynamic effects: monthly share of contract awarding methods



### A.3.2 Outcome II: monthly share of spending based on contract prices

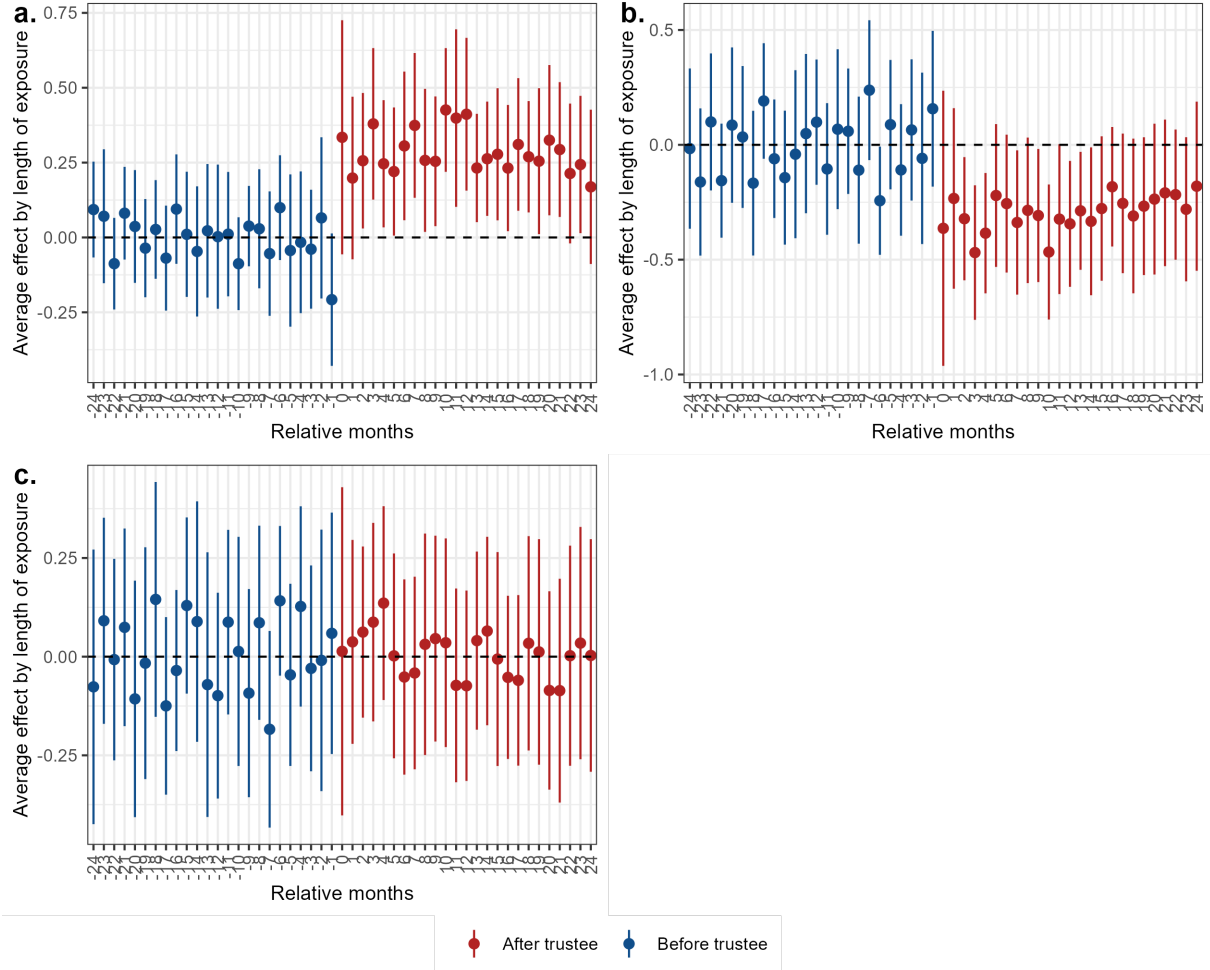
Figure A.5: Dynamic effects: monthly share of spending based on contract prices



*Notes:* The figure plots the dynamic effects from staggered DiD estimations using Callaway and Sant'Anna (2021) based on length of exposure to the treatment. The outcome variable is the monthly share of spending based on contract prices with unforeseen event clause in Panel (a), sealed-bid auction in Panel (b), and threshold clause in Panel (c). The estimations control for population, number of business enterprises at the municipal level and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

### A.3.3 Outcome III: monthly share of spending based on estimated cost of contracts

Figure A.6: Dynamic effects: monthly share of spending based on estimated cost of contracts



## A.4 Dropping Trustees Who Ran for Election

Table A.2: DiD estimates: monthly share of contract awarding methods

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Trustee	0.223 [0.146, 0.299]	0.225 [0.141, 0.309]	-0.296 [-0.422, -0.171]	-0.307 [-0.440, -0.174]	0.024 [-0.103, 0.152]	0.030 [-0.096, 0.157]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4849	4849	4849	4849	4849	4849

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of the respective contract awarding method. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Table A.3: DiD estimates: monthly share of spending based on contract prices

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Trustee	0.269 [0.188, 0.351]	0.278 [0.187, 0.368]	-0.250 [-0.387, -0.113]	-0.258 [-0.404, -0.112]	-0.020 [-0.148, 0.109]	-0.020 [-0.148, 0.109]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4801	4801	4801	4801	4801	4801

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on contract prices. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Table A.4: DiD estimates: monthly share of spending based on estimated cost

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Trustee	0.268 [0.183, 0.352]	0.276 [0.183, 0.368]	-0.247 [-0.388, -0.106]	-0.258 [-0.406, -0.109]	-0.021 [-0.155, 0.113]	-0.021 [-0.151, 0.109]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4801	4801	4801	4801	4801	4801

The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on the estimated cost of contracts. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

## A.5 Not-yet-treated Municipalities as a Control Group

Table A.5: DiD estimates: monthly share of contract awarding methods

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Trustee	0.223 [0.141, 0.305]	0.228 [0.144, 0.312]	-0.306 [-0.439, -0.174]	-0.325 [-0.456, -0.194]	0.034 [-0.098, 0.165]	0.044 [-0.075, 0.163]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4685	4685	4685	4685	4685	4685

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of the respective contract awarding method. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Table A.6: DiD estimates: monthly share of spending based on contract prices

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Trustee	0.270 [0.184, 0.357]	0.282 [0.191, 0.372]	-0.259 [-0.402, -0.115]	-0.277 [-0.427, -0.126]	-0.012 [-0.145, 0.121]	-0.005 [-0.135, 0.125]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4636	4636	4636	4636	4636	4636

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on contract prices. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Table A.7: DiD estimates: monthly share of spending based on estimated cost

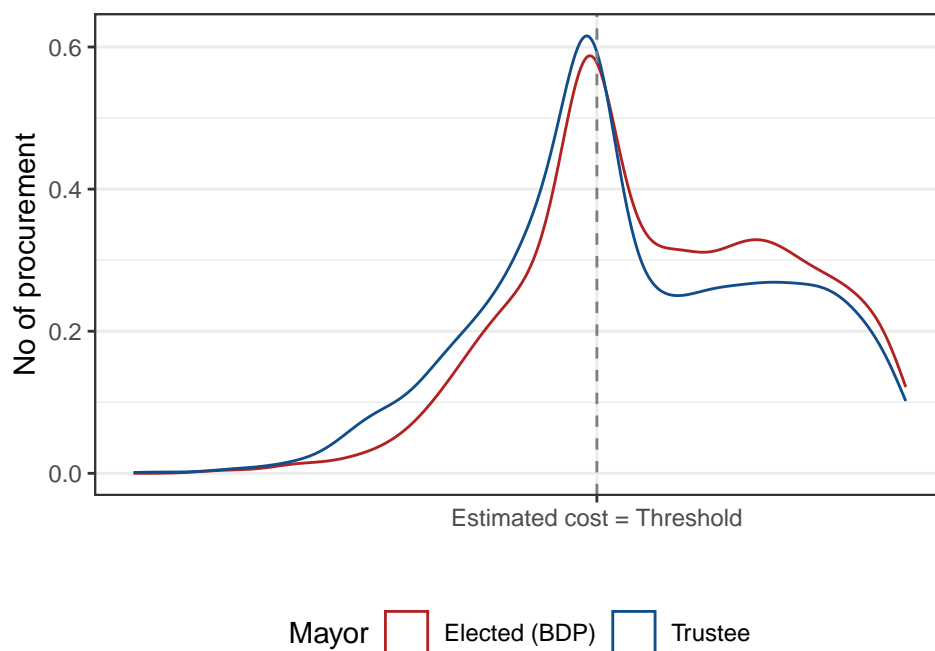
	Unforeseen events		Sealed-bid auctions		Threshold clause	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Trustee	0.269 [0.183, 0.354]	0.280 [0.188, 0.372]	-0.255 [-0.390, -0.121]	-0.277 [-0.416, -0.137]	-0.013 [-0.137, 0.111]	-0.007 [-0.126, 0.112]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4636	4636	4636	4636	4636	4636

The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on the estimated cost of contracts. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.



## A.6 Cost Manipulation: Trustee mayors vs. Elected (DBP) Mayors

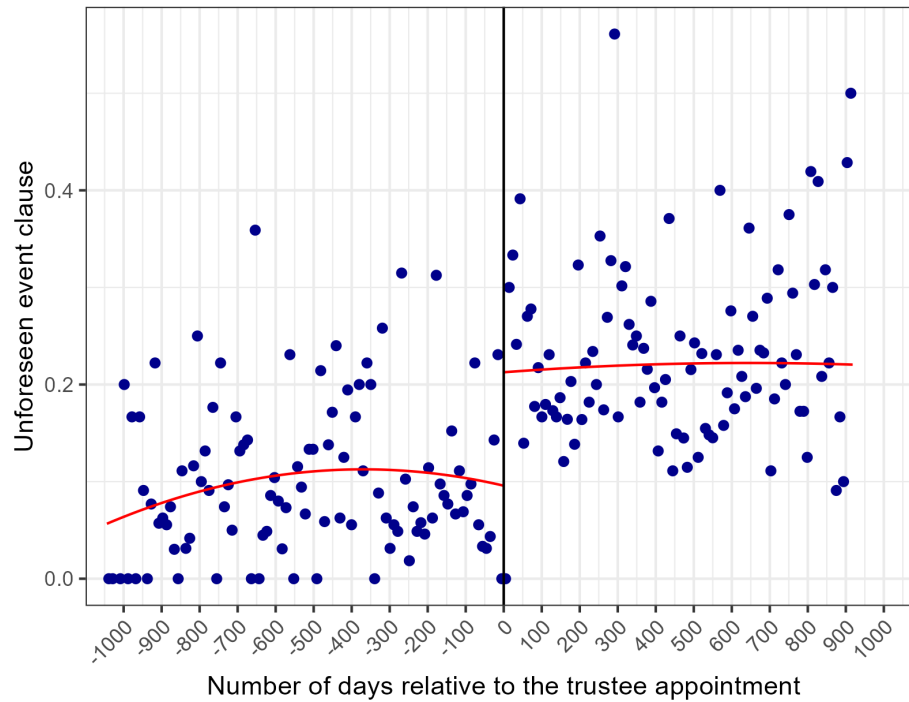
Figure A.7: Bunching around the threshold for expanded discretion: elected (DBP) vs. trustee mayors



*Notes:* The figure plots distributions of estimated cost of contracts under elected (DBP) and trustee mayors. The dashed line corresponds to the threshold value below which the procuring authority attains more discretion in contract awarding process.

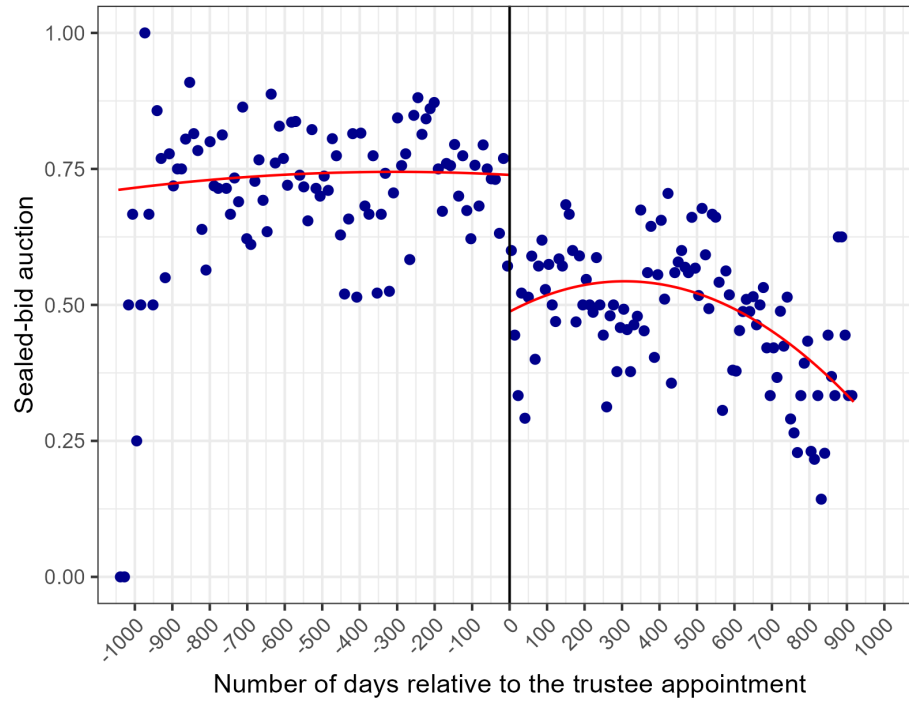
## A.7 RDiT Analysis: RD Plots and Estimates

Figure A.8: Regression discontinuity (RD) plot: unforeseen event clause



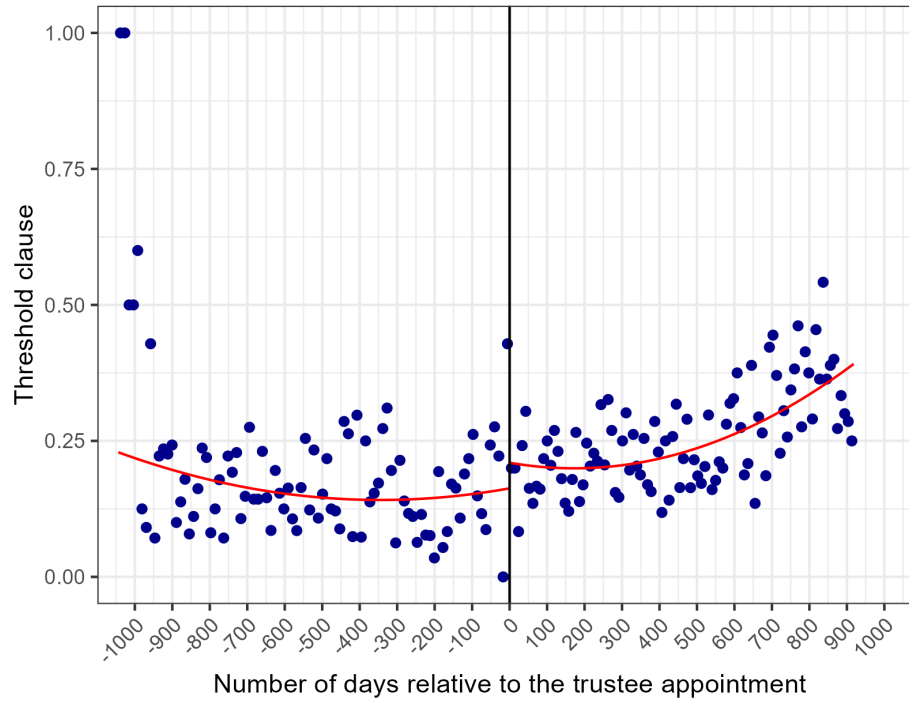
*Notes:* The figure presents the RD plot for the use of unforeseen event clause with binned sample mimicking the underlying variability of the data (Calonico et al., 2015). The dependent variable is a binary indicator of whether the contract is awarded with the unforeseen event clause. The cut-off is the trustee appointment day. Polynomials of order 2 are fitted on each side of the cut-off using a triangular kernel.

Figure A.9: Regression discontinuity (RD) plot: sealed-bid auction



*Notes:* The figure presents the RD plot for the use of sealed-bid auctions with binned sample mimicking the underlying variability of the data (Calonico et al., 2015). The dependent variable is a binary indicator of whether the contract is awarded with a sealed-bid auction. The cut-off is the trustee appointment day. Polynomials of order 2 are fitted on each side of the cut-off using a triangular kernel.

Figure A.10: Regression discontinuity (RD) plot: threshold clause



*Notes:* The figure presents the RD plot for the use of threshold clause with binned sample mimicking the underlying variability of the data (Calonico et al., 2015). The dependent variable is a binary indicator of whether the contract is awarded with the threshold clause. The cut-off is the trustee appointment day. Polynomials of order 2 are fitted on each side of the cut-off using a triangular kernel.

Table A.8: Regression discontinuity in time (RDiT) estimates using manual bandwidth: 360 days

	Unforeseen event		Sealed-bid acution		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee mayor	0.209*** (0.069)	0.240*** (0.056)	-0.243*** (0.092)	-0.262*** (0.070)	-0.060 (0.074)	-0.057 (0.066)
Num.Obs.	7812	7812	7812	7812	7812	7812
Covariates	No	Yes	No	Yes	No	Yes
Year FE	No	Yes	No	Yes	No	Yes
Province FE	No	Yes	No	Yes	No	Yes
Procurement type FE	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes
Kernel	Triangular	Triangular	Triangular	Triangular	Triangular	Triangular
Num.Obs.Effective.Left	1358	1358	1358	1358	1358	1358
Num.Obs.Effective.Right	1819	1819	1819	1819	1819	1819

*Notes:* The table reports estimates obtained from RDiT estimations using Calonico et al. (2015) with triangular kernel and the manually chosen 360-day bandwidth for both sides of the cut-off. The dependent variables are binary indicators of whether the contract is awarded with the respective contract awarding method. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. *Procurement type FE* indicates the type of the procurement: goods, services, or construction. *Industry FE* variable indicates the industry code of the procurement and include 44 levels. Standard errors are clustered at the municipality level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

## B Appendix: Alternative Mechanisms

### B.1 Adverse Selection of Governors as Trustee Mayors

Table A.9: Adverse selection of governors as trustee mayors

	Unforeseen events	Sealed-bid auctions	Threshold clause
Trustee Governor	−0.018 (0.037)	−0.050 (0.077)	0.086 (0.082)
Year FE	Yes	Yes	Yes
Province FE	Yes	Yes	Yes
Procurement type FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Num.Obs.	1825	1825	1825
R2	0.145	0.300	0.371
R2 Adj.	0.084	0.250	0.326

*Notes:* The table reports results from OLS estimations on the sample of contracts awarded by all district governors before the trustee appointments take place. The dependent variable is a binary indicator of whether the contract is awarded with the respective contract awarding method. The main explanatory variable, *Trustee Governor*, is a binary indicator of whether the contract is awarded by a governor who has been appointed as a trustee mayor later on. Covariates include population and number of enterprises at the municipality level, and the level of nightlight at the district level. *Procurement type FE* indicates the type of the procurement: goods, services, or construction. *Industry FE* variable indicates the industry code of the procurement and include 44 levels. Standard errors are clustered at the province level.  $*p < 0.1$ ,  $**p < 0.05$ ,  $***p < 0.01$ .

## B.2 DiD Analysis: Geographically Matched Sample

Table A.10: DiD estimates: monthly share of contract awarding methods

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee	0.209 [0.113, 0.305]	0.191 [0.093, 0.288]	-0.287 [-0.410, -0.164]	-0.283 [-0.412, -0.154]	0.048 [-0.056, 0.152]	0.059 [-0.040, 0.158]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	3771	3771	3771	3771	3771	3771

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of the respective contract awarding method. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Table A.11: DiD estimates: monthly share of spending based on contract prices

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee	0.235 [0.120, 0.350]	0.217 [0.106, 0.329]	-0.225 [-0.360, -0.091]	-0.219 [-0.363, -0.076]	-0.010 [-0.129, 0.109]	0.002 [-0.105, 0.109]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	3722	3722	3722	3722	3722	3722

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on contract prices. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Table A.12: DiD estimates: monthly share of spending based on estimated cost

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee	0.237 [0.130, 0.343]	0.220 [0.113, 0.328]	-0.224 [-0.354, -0.093]	-0.219 [-0.354, -0.085]	-0.013 [-0.121, 0.096]	-0.001 [-0.106, 0.104]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	3722	3722	3722	3722	3722	3722

The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on the estimated cost of contracts. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

### B.3 DiD Analysis: Excluding Municipalities with Violent Events

Table A.13: DiD estimates: monthly share of contract awarding methods

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee	0.206 [0.127, 0.286]	0.212 [0.125, 0.300]	-0.273 [-0.426, -0.119]	-0.285 [-0.448, -0.121]	0.012 [-0.129, 0.153]	0.016 [-0.123, 0.154]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4311	4311	4311	4311	4311	4311

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of the respective contract awarding method. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Table A.14: DiD estimates: monthly share of spending based on contract prices

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee	0.245 [0.161, 0.329]	0.259 [0.157, 0.361]	-0.226 [-0.387, -0.064]	-0.234 [-0.391, -0.077]	-0.020 [-0.162, 0.123]	-0.025 [-0.162, 0.111]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4270	4270	4270	4270	4270	4270

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on contract prices. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Table A.15: DiD estimates: monthly share of spending based on estimated cost

	Unforeseen events		Sealed-bid auctions		Threshold clause	
	(1)	(2)	(3)	(4)	(5)	(6)
Trustee	0.243 [0.162, 0.324]	0.257 [0.158, 0.357]	-0.222 [-0.379, -0.064]	-0.234 [-0.392, -0.076]	-0.022 [-0.151, 0.108]	-0.028 [-0.161, 0.105]
Controls	No	Yes	No	Yes	No	Yes
Num.Obs.	4270	4270	4270	4270	4270	4270

The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the monthly share of spending with the respective contract awarding method and calculated based on the estimated cost of contracts. Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.



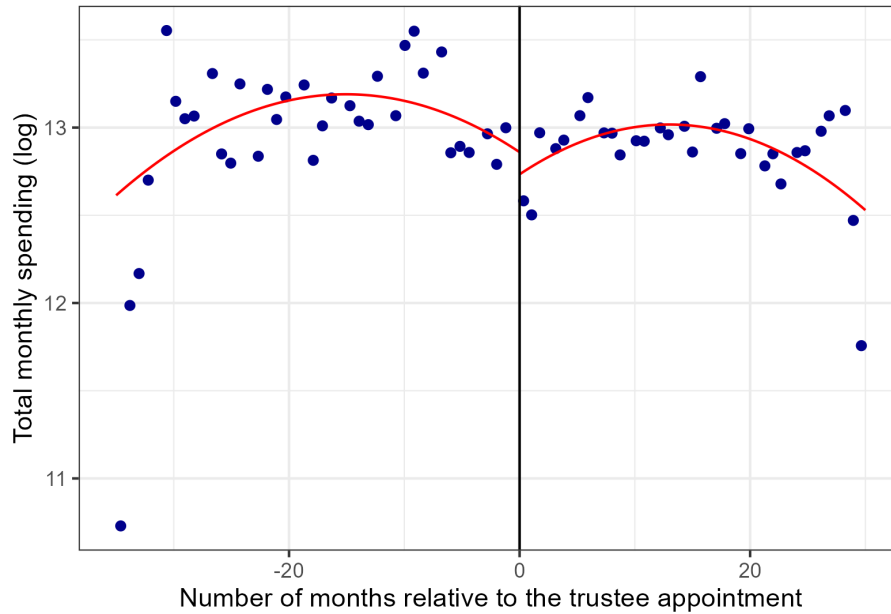
## B.4 Total Monthly Procurement Spending

Table A.16: DiD estimates: total monthly spending in procurement

	Total spending in procurement (in million TL)	
	(1)	(2)
Trustee	1.301 [−0.647, 3.249]	1.605 [−0.400, 3.610]
Controls	No	Yes
Num.Obs.	4968	4968

*Notes:* The table reports the DiD estimates obtained from staggered DiD estimations using Callaway and Sant’Anna (2021). The outcome variable is the total monthly spending in public procurement calculated from contract prices (in million TL, in real terms). Controls include population and number of enterprises at the municipality level, and the level of nightlight at the district level. Bootstrapped-based 95% confidence intervals are given in parentheses and are robust to multiple hypothesis testing.

Figure A.11: Regression discontinuity (RD) plot: total monthly spending in procurement



*Notes:* The figure presents the RD plot for the total monthly spending in procurement with binned sample mimicking the underlying variability of the data (Calonico et al., 2015). The cut-off is the trustee appointment day. Polynomials of order 2 are fitted on each side of the cut-off using a triangular kernel.