

Political competition and the use of discretionary procedures in public procurement: evidence from Italian data

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Abstract

This paper empirically investigates the effect of political competition on the utilization of discretionary award procedures in public procurement. It leverages data from Italian municipalities in 2009-2016 and the entry of a new political party, the 5 Star Movement, through matching estimators. The findings indicate that probity-based political opposition is linked to a reduced likelihood, ranging from 4% to 7%, of opting for negotiated procedures over formal auctions. The results align with two potential explanations: (i) bureaucratic defensive strategies and (ii) diminished reliance on relational contracting or favoritism/corruption. However, the application of repeated cross-section regressions using key indicators from the literature to capture political competition does not reveal significant effects. Following the two possible interpretations, it is argued that (a) the entry of an external actor disturbed an equilibrium built on ‘sharing compromising information’; and/or (b) ‘third-party opportunism’ limits well-intentioned public administrators.

1 Introduction

Public procurement is contracting between public and private entities. As such, it shows all the issues related to contracting in general – unverifiable quality, cost/time overrun – on top of a principal-agent relationship between citizens and public officials (Banfield, 1975), thus making it vulnerable to corruption and favoritism. As for private-to-private transactions, the inclusion of reputational and relational elements (Macneil, 1977; Klein, 1996) in the choice of suppliers could relieve part of the contractual issues linked to non-verifiability (Spagnolo, 2012; Picci et al., 2006). For instance, in a dynamic setting, public procurers could screen between the possible suppliers, inviting only bidders that performed well in the past (Calzolari and Spagnolo, 2017; Albano et al., 2017). Nevertheless, many legal settings across the world limit public officials’ discretion to curb corruption and ensure impartiality. Indeed, discretionary awarding procedures in public procurement

often emerge among the red flags for corruption, when accompanied by other indexes (Fazekas et al., 2016; Fazekas and Kocsis, 2020; Decarolis and Giorgiantonio, 2022). A usual regulatory choice is to leave public officials choosing between formal auctions and private negotiations only for contracts of limited amounts. In this context, there is empirical evidence of discretion being used to screen reputable suppliers and implement relational contracting (Bajari et al., 2009; Bafundi et al., 2023).

While a wide and ever-growing literature is analyzing the regulation/rules trade-off, this paper focuses on a particular aspect that crosscuts both the contractual and corruption sides of public procurement: political competition. Political competition is linked to discretion in public procurement through two main channels. On the one hand, it is supposed to curb corruption, as political opponents should control the behavior of the governing party with the intent to replace it.¹ Since corruption is limited by political checks, discretionary award procedures have less scope of action, possibly related to efficiency motives. On the other hand, probity challenges might raise personal and political liability on the public contractual side, posing additional threats to contractual relationships since voters and courts cannot easily discern efficient relational contracting from favoritism. Spiller (2008) labeled this effect *third-parties opportunism*. A possible consequence is that public entities might give up discretionary awarding procedures as self-defense against wrongful accusations, a form of so-called bureaucratic defense.²

This paper empirically investigates this straightforward hypothesis: political competition limits the use of discretionary procedures in public procurement. In the first part, it exploits established indicators of political competition developed in literature, based on the share of votes at the preceding elections. As illustrated below, this analysis does not provide significant estimates. In the second part, the entry of a probity-based and anti-establishment political party — the 5 Star Movement — into municipal councils as a treatment. It is argued that this party represented a shock in the Italian political environment, thus representing a suitable natural experiment theoretically able to raise the level of electoral competition. This natural experiment, coupled with the random nature of election dates in the Italian institutional framework, allows the estimation of the average treatment effect on the treated. The estimates come from techniques based on matching, namely nearest-neighbor matching and coarsened-exact-matching. While political indicators do not show significant effects, matching-based estimates reveal a reduced likelihood of choosing discretionary procedures ranging from 4 to 7 p.p., which represents an important effect to acknowledge.

Paragraph 2 reviews the pertinent literature, while paragraph 3 delineates the Italian institutional framework regarding public procurement and the political environment. In paragraph 4, we detail the data and indicators employed in the analysis, and paragraph 5 outlines the empirical methodology and presents the results. The discussion of these results takes place in paragraph 6, where two possible interpretations are examined. Finally, paragraph 7 offers a conclusion. The study is constrained by two limitations. Firstly, like any natural experiment, its applicability beyond the specific context in which it takes place may be restricted, potentially limiting its external validity. Secondly,

¹A thorough discussion about the political factors that influence corruption is offered by Della Porta (2004), which discusses the possible relationships and vicious circles between political-institutional and organizational aspects, among which the effects of voters' partisanship, the degree of fragmentation of political parties, and the possibility of collusion among parties. Highlights of the empirical evidence on the matter are supplied in the literature review section below.

²Beuve et al. (2019) called this effect *proceduralization*.

the study cannot distinguish whether the observed effect is associated with curbed corruption or a self-defense mechanism, thus leaving its theoretical interpretation to future endeavors.

2 Literature review

This paper draws on four key strands of literature, encompassing: (i) the economics of contracts, with a focus on the choice between auctions and negotiation; (ii) analyses of the discretion/rules trade-off in public procurement; (iii) the impact of political competition on corruption, both generally and in the context of public contracts; and (iv) the influence of third-party opportunism on public contractors. The economics of contracts supplies the background for the study. In detail, a wide literature has examined both the choice between auctions and negotiation and the types of supply strategies in dynamic contexts. Here are the main results. The main prediction in a single transaction context is that complex objects should be purchased through negotiations, which ensure a better *ex-ante* exchange of information³ and better-fit cost-plus contracts⁴, whereas low-complexity, whereas open auctions are apt for low-complexity goods where *ex-post* adaptation costs are less likely to emerge (Bajari and Tadelis, 2001).⁵ This proposition gained support in several empirical applications, notably in public procurement contexts (Bajari et al., 2009; Baldi et al., 2016; Guccio et al., 2012).

In a dynamic context, relational contracting and reputational effects also become relevant. A useful distinction is made by Taylor and Wiggins (1997), which sees spot contracts based on auctions and relational long-term contracts as opposite poles in the selection of suppliers. However, public procurement differs from private contracting because relational contracts are formally denied. That is when discretion kicks in. Indeed, the possibility of banning or penalizing underperforming suppliers from future bids can be seen as a punishment belonging to the relational contracting sphere (Calzolari and Spagnolo, 2017; Albano et al., 2017). Indeed, there is empirical evidence that public authorities subject to contractual incompleteness make use of negotiations or restricted auctions to repetitively select trusted firms, so steering the execution of the obligations (Bajari et al., 2009; Bafundi et al., 2023). Negotiated procedures, therefore, can be seen to install relational contracts or, similarly, to include reputation in the choice of the supplier (Spagnolo, 2012).

The relationship with corruption is however slippery: Lambsdorff and Teksoz (2004) argues that legitimate relationships between public and private firms born out of trust can degenerate into corruption by creating a suitable environment for it. Discretionary procedures favor that outcome (Fazekas and Kocsis, 2020; Decarolis et al., 2020), creating a trade-off. A growing literature is therefore investigating the overall consequences of limiting public buyers' discretion in selecting

³an issue underlined by Goldberg (1977)

⁴Allowing adaptation to transaction costs, Bajari and Tadelis (2001)

⁵Other important contributions are Spulber (1990) highlighting the importance of contract enforcement on bidding behavior, where imperfect enforcement leads to adverse selection; Manelli and Vincent (1995), who showed that negotiations (which they model as sequential bidding mechanisms) are better suited for situations where quality is prominent.

suppliers. Kelman (1990) pioneered the policy view that discretion could improve outcomes in the aggregate. Empirical evidence is however mixed. Bandiera et al. (2009) analyzed Italian data finding that most of the wasted resources are due to inefficiencies (passive waste), rather than corruption (active waste), relating it to different governance structures of public bodies. Coviello et al. (2018) finds that discretion raises the probability that buyers award contracts to the same contractors, but overall, this is not reflected in worse outcomes in Italy. Finocchiaro Castro and Guccio (2021) also find that discretion enhances efficiency in Italy, but may also open to corruption where social capital and institutions are weak. On the contrary, Baltrunaite et al. (2021), also with Italian procurement data, finds that higher discretion increases the probability that a contract is awarded to politically connected firms in more corrupted contexts, while not increasing its *ex-ante* productivity, thus *selectively* suggesting potential misallocation of resources. In the Hungarian context, Szucs (2023) finds that discretion raises prices and reduces *ex-ante* productivity while leading to a higher likelihood of selecting politically connected firms. In the Czech Republic, Palguta and Pertold (2017) finds that discretion increases the likelihood that anonymously owned firms are selected. On the other hand, Carril et al. (2021) finds that value is lost in banning discretion in the US. Notably, Bosio et al. (2022) showed in a cross-country study that procurement rules are correlated with better practices, but their benefits depend on the quality of the public sector capabilities.

Pertaining closely to the central focus of this paper, a particular strand of literature delves into the intricate relationship between political competition and corruption. Theoretically, the failure of the electoral process as a deterrent to corruption is justified by factors such as clientelism, the absence of corruption-free alternatives, collective-action problems, and entry barriers in the political arena (Kurer, 2001). The relationship is acknowledged to be complex and contingent on specific contexts. Moreover, parties can collude, tilting towards an equilibrium based on blackmail (Della Porta, 2004), a possibility that Gambetta (2009) labels ‘*sharing compromising information*’ equilibrium. Unsurprisingly, the empirical evidence is mixed. Evidence of punished corruption comes from Ferraz and Finan (2008), who find incumbent mayors in audited Brazilian municipalities have a lower probability of reelection. Bågenholm (2013) finds that European voters punish corrupt politicians, although with a limited magnitude. Other scholars found evidence of politically unsanctioned corruption. Among them, Chang et al. (2010) found that Italian voters tolerated corruption for a long time, suddenly punishing it when a large-scale judicial investigation exposed large scandals in 1992-1994. Therefore, they underline the importance of press coverage and the overall informational environment for political accountability in elections. In addition, voters could tolerate corrupt politicians because of political alignment or partisan bias (Rundquist et al., 1977; De Sousa and Moriconi, 2013), or because of the perception of larger public spending and the creation of positive externalities Pereira and Melo (2015); Fernández-Vázquez et al. (2016).⁶ In a comparative study, Ecker et al. (2016) found that the punishment depends on the context and the individual-level characteristics of the voters with a cross-country study from European countries. Other studies find a correlation between political competition and diminished corruption, in general. Among these, Alfano et al.

⁶It should be noted, however, that corruption can bring about other political distortions such as polarization (Apergis and Pinar, 2023), voters’ disaffection (Giommoni, 2021), and populism (Daniele et al., 2023; Foresta, 2020), rather than simply promoting “clean” competition.

(2023) with Italian data, although limited to *grand* corruption. Montinola and Jackman (2002) also find a negative effect of political competition on corruption in a cross-country study with data from the 80s, using perception indexes as the dependent variable. Yet, Sharafutdinova (2010) shows that in the Russian regions, political competition along with press freedom affects corruption perception, rather than corruption itself, because of its use in political battles.

Examining the effects of political competition within public procurement, the empirical evidence also presents a mixed picture. Coviello and Gagliarducci (2017) shows that political tenure in Italy is linked to a deterioration in the functioning of the auction mechanism (fewer bidders, lower rebates, etc.) at the expense of contractual outcomes (cost and time overrun). This result is interpreted as the consequence of collusion between long-tenure mayors and locally embedded bidders, as opposed to better screening selection due to learning effects. Baldi et al. (2016) notably finds the level of corruption to soften the positive link between the use of discretion and the complexity of the project. Findings of misallocation linked to political accountability are also reported by Ferraz and Finan (2011) for Brazilian municipalities. They find that mayors having re-election incentives are misappropriated less than mayors who do not run for the next elections. Although not focusing on political competition directly, Olken (2007) provides evidence of a scarce effect of civic accountability on corrupt outcomes when compared with top-down monitoring in the context of a field experiment in Indonesia. Notably, the closer contributions to this paper come from Broms et al. (2019) and Chong et al. (2011). Broms et al. (2019) analyzes the effect of political competition on non-competitive outcomes in public procurement with Swedish data, finding that municipalities that are long-lasting one-party dominated are more likely to show single-bidding. Note that single-bidding here proxies for favoritism or corruption. Chong et al. (2011) finds a correlation between political competition indicators, such as those used in the first part of this paper, and the likelihood of using open auctions instead of negotiations in French municipalities.

Notably, Chong et al. (2011) justifies these results by (cautiously) referring to Spiller (2008) *third-parties opportunism*. More in detail, Spiller's theory suggests that political pressure influences public bargaining in the form of contract rigidity, i.e., the inclusion of contractual clauses limiting informal adaptation Spiller (2008); Moszoro and Spiller (2012); Moszoro et al. (2016). Following this view, formal renegotiations (due to rigidity) can be seen as physiological for public contractual relationships. Empirical evidence on this is scarce but growing. Beuve et al. (2019) compares private-to-private and public-to-private contracts for French parking services finding that (i) public contracts are more rigid, (ii) rigidity clauses increase with political risks. Similarly, Beuve et al. (2021) find that public contracts are lengthier, based on more rule-based rigid clauses, and subject to formal renegotiations, which increase with political competition. Closely related to the choice of award mechanism is the contribution from Beuve and Saussier (2021), which examines the impact of contract renegotiation on the probability of contract renewal, finding that there exists an optimal level of renegotiation. Notably, this result holds when public administration had more discretion in the choice of the contractual counterpart. Beuve et al. (2019) suggests that besides rigidity, which is expressed in the contract, there is *proceduralization*, a form of strict adherence to bureaucratic rules to preempt probity challenges. This concept is close to the concept of *defensive bureaucracy*.⁷

⁷On this, see Battini et al. (2020).

3 The institutional framework

3.1 Corruption and the political environment

Italy is an interesting case study since it ranks relatively low in corruption perception indexes compared with similar GDP countries. For instance, Italy ranked 72nd in Transparency International’s corruption perception index in 2012 (period under study here) with a score of 42, the same as Bosnia and Herzegovina and Sao Tome and Principe, below South Africa, North Macedonia, and Brazil (sharing a score of 43).⁸ Gambetta (2018) offers a possible explanation for the Italian anomaly, which he labels *Sharing Compromising Information*. In summary, this consists of a network of people holding compromising information as hostages, creating an equilibrium based on mutual threats. In his opinion, the Italian institutional framework creates a particularly suitable environment for corrupt agreements to be sustained through tacit complicity. Meanwhile, the complexity and ambiguity of the law, coupled with an ineffective and overburdened judiciary lowers the probability of being caught and punished by external investigations.

The trajectory of corruption in Italy took a drastic change in 1992, when a wave of judicial investigations discovered widespread corruption across all spheres of political actors, with public procurement being prominent.⁹ Before the scandals, corruption was mainly linked to the illicit financing of political parties and characterized by mutual forbearing. As described by Della Porta et al. (2015), while before 1992 corruption “*was organized around the hidden structures of the political parties*”, corruption networks have then adapted to finding new organizational structures capable of governing and enforcing hidden transactions.¹⁰ The change also resonates with recent analyses carried out by the Italian Anti-corruption Authority (ANAC).¹¹ ANAC uses judicial data for the period 2014-2020 to describe the tendencies in corruption linked to public procurement. Notably, it finds that the role of politics in corruption is ancillary – though not negligible – compared with before-1992 Italy: only 23% of suspected people were politicians, of which nearly half were municipalities’ mayors. However, as described above, opposition parties may exert a check (or an undue limitation) on bureaucrats, too.

3.2 Regulation: public procurement, governance, and elections

The Italian law regulating public works in place for the period 2009-2016¹² considered open and restricted sealed-bid auctions as the standard procedures for the choice of the contractor. The public administration carries out a technical estimate of the value of the project, which is the maximum price it is willing to pay for its realization, and asks private operators to rebate it (then a trimming procedure is in place to eliminate unusually low offers). In open-sealed-bid auctions, every firm

⁸<https://www.transparency.org/en/cpi/2012>

⁹See Golden and Picci (2006) for a historical picture of corruption in Italy.

¹⁰Della Porta et al. (2015) describes two post-1992 scandals, related to the construction of the MOSE (a system to avoid flooding in Venice) and to Milan’s Expo in 2015. It describes the former as a centripetal organization, with a central authority organizing the corruptive system, and the latter as a centrifugal system based on a polycentric network formed by connections with intermediaries.

¹¹ANAC, *La corruzione in Italia (2016-2019) Numeri, luoghi e contropartite del malaffare*. <https://www.anticorruzione.it/-/la-corruzione-in-italia-2016-2019.-numeri-luoghi-e-contropartite-del-malaffare>

¹²Legislative Decree 163/2006, modified in 2008 (legislative decree 152/2008) and 2011 (law decree 70/2011)

qualified for the object at stake can submit an offer, while in restricted auctions the public administration fixes a maximum number of accepted offers, following a pre-qualification stage. However, the law allows for the use of more flexible and cheaper procedures within some monetary thresholds or provided that certain extraordinary circumstances are verified. Notably, projects whose value ranges between 100 and 500 thousand Euros can be assigned through private negotiation (negotiated procedure) after a comparison of at least five offers. Such a procedure entails a discretionary restriction of the firms invited to negotiations and a private negotiation on contractual terms. A 2011 reform¹³ extended the range of values for which the use of a negotiated procedure is available to 1 million, though raising the number of offers to be compared from 5 to 10 for the 500 thousand-1 million euros range. In the governance of local public administrations, the Italian regulation¹⁴ establishes a fundamental principle of separating political direction, handled by locally elected mayors, from administrative, financial, and technical management, overseen by local managers. Local managers, responsible for procurement procedures and contract agreements, implement projects chosen by the political body in alignment with their strategic plans. While the political body has the authority to select projects, the actual implementation is entrusted to bureaucrats. Legally, the decision on the awarding procedure and the selection of contractors is excluded from the political sphere. However, this separation may lead to friction in the execution of political programs. In practice, although there are signs of an increasing emergence of a “spoils system” in Italy (Borgonovi et al. (2011); Bellodi et al. (2022)),¹⁵ in most cases a mayor still finds a public manager not directly chosen. On the other hand, both descriptive (e.g., ANAC, 2019) and econometric evidence (Baltrunaite, 2020) show that the separation is not always perfect. In any case, bureaucrats are not immune from political scrutiny too, as the use of “defensive bureaucracy” is documented¹⁶ and still highly debated.¹⁷

Concerning the electoral mechanisms, the Italian system¹⁸ differentiates municipalities with a population lower than 15 thousand from those with a higher population. Smaller municipalities elect the mayor at the first turn (unless votes are tied) and municipal council seats are awarded through a majoritarian system.¹⁹ Moreover, each candidate can be associated with one party only. Municipalities with a population higher than 15 thousand people instead elect their mayors on the base of the absolute majority, while a second turn between the first two candidates is needed in case none has reached the 50% plus one threshold. Each candidate is associated with one or more parties, and council seats are divided proportionally, although the winner is granted at least 60% of the seats.

¹³Law decree 70/2011

¹⁴D.Lgs. 267/2000

¹⁵Public managers are generally hired through public competitions. However, they can be hired through temporary contracts, an option that is increasingly chosen: the average share of managers hired through temporary contracts increased from 16% in 2003 to 25% in 2019 (Bellodi et al. (2022)).

¹⁶Battini et al. (2020) found that a residual, albeit significant (about 13%), the share of public managers interviewed indicates the reduction of political pressure (exerted by the mayor) among the major remedies for defensive administration.

¹⁷One of the pillars of the envisioned 2023 Italian reform of public contracts is the “principle of the result”, aimed at shifting the focus of public bureaucrats from the strict respect of the rules to the efficiency of their action.

¹⁸See articles 71 and 72 of the Italian *Testo unico delle leggi sull'ordinamento degli Enti Locali* (d. lgs. 267/2000).

¹⁹Two-thirds are assigned to the winner party and the other are split proportionally.

4 Data

The study exploits data from public procurement of works issued between 2009 and 2016 by Italian municipalities, coupled with elections data spanning from 2004 to 2016. Public procurement data comes from ANAC (the Italian anti-corruption authority) and includes, for each project, some variables related to pre-assignment features and some to contract outcomes. Municipalities belonging to regions with special autonomy are excluded, to avoid any possible differences in fine-grained regulation.²⁰ The analysis focuses on contracts ranging from 100 to 500 thousand euros since they are subject to the same regulation (see paragraph 3.2) and they are relatively comparable. Among the available variables, the following are retained for the analysis: the total value of the project, the municipality that is issuing it, the publication date, the type of procedure used for the choice of the contractor, the criteria of assignment (lower price or most economically advantageous offer), and the sector of the work (CPV²¹ code).

Municipal elections data come from the platform *Eligendo*, issued by the Italian Minister of Home Affairs (*Ministero dell'Interno*), further elaborated to obtain indicators of political competition. Following Chong et al. (2011), the first part of the analysis makes use of the Herfindhal-Hirschman Index (sum of squared vote shares for each candidate i at the first-round t of municipal elections preceding the publication date of the project, HHI) as a measure of political fragmentation. As Beuve et al. (2019), however, it is used as the reciprocal of the HHI, called the *Number of Effective Parties* (NEP), since it can loosely be interpreted as the number of effective candidates.²² Moreover, as Beuve et al. (2019), the *Number of Residual Effective Parties* (NREP), computed as the reciprocal of the HHI computed on opposing candidates only, is used to account for political concentration within the political minorities. Indeed, as theorized by Moszoro and Spiller (2012), the higher the concentration of the opposition, the higher the stakes in case of successful probity challenges. However, Della Porta (2004) illustrates when and why this might not hold in terms of reducing corruption, as parties may end up tolerating each other in a sort of collusive equilibrium. Finally, the *SD* indicator, computed as the difference in vote shares between the mayor and the main political opponent, is used as an alternative measure of political competition:²³

$$HHI_{m,t} = \sum_{i=0}^n PS_{i,m,t}^2, \quad NEP_{m,t} = \frac{1}{HHI_{m,t}} \quad (1)$$

$$Residual_HHI_{m,t} = \sum_{i \neq y}^n PS_{i,m,t}^2, \quad NREP_{m,t} = \frac{1}{Residual_HHI_{m,t}} \quad (2)$$

$$SD_{m,t} = PS_{i=y,m,t} - PS_{i=s,m,t} \quad (3)$$

for contracts for municipality m at time t ; where i is the election candidate and y and s are respectively the mayor and the main opposition candidate. Concerning the impact of the 5 Star

²⁰These are: Trentino-Alto-Adige, Friuli-Venezia-Giulia, Val d'Aosta, Sicilia, Sardegna.

²¹Common Procurement Vocabulary following the classification of the European Union.

²²The interpretation is however similar.

²³Note that the main opponent might have a greater share than the mayor in case a second turn overturns the first turn results.

Movement, I focus on the entry of the party into the municipal council as a binary treatment. Therefore, I consider treated observations in which there is at least one municipal councillor representing the 5SM. Since the focus is on the opposition's strength, this part of the analysis excludes contracts for municipalities where the 5SM expressed the mayor. However, I also provide estimations using the percentage share of municipal councillors held by the M5S and their absolute number.

Finally, I retrieved information about the mayors for each municipality issuing contracts from the database of public administrators held by the Italian Minister of Home Affairs. From this, I retain information on the age, gender, and education level (whether the major holds a degree or not). Finally, I use two indicators developed by Nifo and Vecchione (2015) at the provincial-year level to account for the institutional environment, namely for the incidence of corruption and voice (indicating the degree of participation from the society). A summary of the data is reported in Table 1 below.

Table 1: Descriptive statistics.

Variable	Obs	Mean	Std. dev.	Min	Max
Discretion	48,712	0.704	0.457	0	1
Political:					
SD	47,590	0.173	0.166	-0.300	0.965
NREP	47,590	1.879	0.923	1	8.868
NEP	48,712	2.688	0.794	1.021	7.923
5SM treated	48,712	0.099	0.298	0	1
5SM relative presence	48,344	0.727	3.473	0	62.500
5SM $n_{councillors}$	48,712	0.193	0.943	0	20
Mayor:					
Male	48,712	0.907	0.290	0	1
Age	48,712	50.268	9.581	18.652	86.367
Degree	48,712	0.573	0.495	0	1
Municipality:					
Population	48,712	159011.300	542011.800	30	2617175
Prov. Capital	48,712	0.193	0.394	0	1
Altitude	48,712	259.622	265.064	0	2035.000
Institutional:					
Corruption	48,712	0.828	0.198	0	1
Voice	48,712	0.610	0.210	0	1
Contract:					
Project value	48,712	233399.400	108944.200	100000.100	499999.800
Award criteria (MEAO = 1, LP = 0)	28,746	0.124	0.330	0	1

5 Empirical analysis

5.1 Regressions with competition indicators

In the first part I use different specifications of the following Linear Probability Model:²⁴

$$\text{NegotiatedProcedure}_{i,m,t} = \alpha + \beta \text{political}_{j,t} + \gamma X_i + \lambda M_m + \theta J_{m,t} + \delta I_m + v_{r/p} + y_t + u_{i,j,t} \quad (4)$$

Here, contract i is awarded by municipal administration m at time t . Political competition variables are those detailed in section 3 (namely *Number of Effective Parties*, *Number of Residual Effective Parties*, and *Share Difference*), $v_{r/p}$ are regional or provincial fixed effects, y_t are year (of publication) dummies. The other controls can be divided into three main groups. The first relates to the contract's characteristics X_i , and it includes a second-degree polynomial in project value, a set of dummies for the 4 digits CPVs denoting project sector²⁵, and the criteria used in the adjudication procedure (most economically advantageous or lower price). The second group controls for municipalities' characteristics M_m : population, altitude, and whether the municipality is a local capital. The third group $J_{m,t}$ includes controls for the mayor's characteristics, namely sex, age, and whether he/she holds a degree. Finally, the last set of controls I_m accounts for corruption and social capital at the provincial level.²⁶

In contrast to Baldi et al. (2016), who use similar data (though restricted to 2009-2013) and a similar model, this paper relies on regional and provincial fixed effects – instead of municipalities' fixed effects – for two reasons: firstly, data are sparse at the municipality's level, and secondly, the variable of interest only varies at the elections (every 5 years). The latter provides a strong limitation to the analysis since political pressure can change in both directions during the electoral terms, therefore making any transformation or interaction unreliable.

Results are reported in Table 2 below. None of the proxies for political competition are found to be significant. Interestingly, neither corruption nor voice appears significant. In addition, the use of the most economically advantaged criteria is associated with the use of formal tender, rather than with negotiated procedures, possibly suggesting that the rigidity of formal auctions (coupled with intricate regulations to select the best price) is often attenuated with the choice criteria.

²⁴Baldi et al. (2016) also use OLS to estimate the binary choice between the use of negotiated procedures and open auctions, motivating the choice with the high use of binary variables as covariates and a small share of predicted values fall outside [0-1]. The same applies to this study.

²⁵Common Procurement Vocabulary following the classification of the European Union.

²⁶At the base year (i.e. 2009), to avoid double causality. Note also that using, for instance, voter turnout at the election to control for social capital would interfere with the estimations, as it is correlated with political competition, but the causality runs both ways as both variables are the outcomes of people's preferences.

Table 2: LPM on the use of discretion (1 for negotiated procedures, 0 for open or restricted formal auctions) at the contract level. Specifications 1-3 use regional fixed effects, and 4-6 use provincial fixed effects. All controls for mayors and municipalities characteristics and work type (4 digits CPVs) and project value (second-degree polynomial). Errors are clustered at the municipal level. Table B also controls for the award criteria (most economically advantaged offer = 1, lower price = 0). As the data for the criteria used to adjudicate the offer is often unreported, the number of observations used is significantly lower.

A) Dependent: discretion	(1)	(2)	(3)	(4)	(5)	(6)
SD	0.039 (0.033)			0.053* (0.029)		
NREP		-0.002 (0.006)			-0.001 (0.006)	
NEP			-0.007 (0.006)			-0.007 (0.006)
Corruption (prov)	0.080 (0.068)	0.078 (0.069)	0.077 (0.068)			
Voice (prov)	-0.041 (0.074)	-0.038 (0.075)	-0.037 (0.074)			
Mayor	X	X	X	X	X	X
Municipality	X	X	X	X	X	X
Work	X	X	X	X	X	X
Year	X	X	X	X	X	X
Region FE	X	X	X			
Province FE				X	X	X
Constant	0.925*** (0.091)	0.936*** (0.089)	0.948*** (0.086)	0.973*** (0.049)	0.984*** (0.047)	0.996*** (0.046)
Observations	47,590	47,590	48,712	47,590	47,590	48,712
R-squared	0.250	0.250	0.249	0.276	0.276	0.274
N_municipalities	5536	5536	5738	5536	5536	5738
Regions/Provinces	15	15	15	87	87	87

Clustered standard errors in parentheses

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

B) Dependent: discretion	(1)	(2)	(3)	(4)	(5)	(6)
SD	0.029 (0.042)			0.039 (0.035)		
NREP		-0.002 (0.007)			-0.001 (0.006)	
NEP			-0.008 (0.007)			-0.006 (0.007)
Award criteria	-0.153*** (0.016)	-0.154*** (0.016)	-0.151*** (0.016)	-0.150*** (0.015)	-0.151*** (0.015)	-0.148*** (0.015)
Corruption (prov)	0.190** (0.074)	0.188** (0.074)	0.183** (0.073)			
Voice (prov)	-0.122 (0.088)	-0.118 (0.089)	-0.121 (0.088)			
Mayor	X	X	X	X	X	X
Municipality	X	X	X	X	X	X
Work	X	X	X	X	X	X
Year	X	X	X	X	X	X
Region FE	X	X	X			
Province FE				X	X	X
Constant	1.406*** (0.097)	1.415*** (0.097)	1.439*** (0.094)	1.490*** (0.057)	1.496*** (0.058)	1.509*** (0.059)
Observations	28,207	28,207	28,746	28,207	28,207	28,746
R-squared	0.260	0.260	0.260	0.288	0.288	0.288
N_municipalities	4504	4504	4659	4504	4504	4659
Regions/Provinces	15	15	15	87	87	87

Clustered standard errors in parentheses

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

5.2 The political treatment, matching, and matching-plus-regression

5.2.1 The treatment: history and assumptions (SUTVA)

The core analysis of this paper exploits matching techniques using the entrance of the 5 Star Movement in Italian municipalities as a natural experiment. Although the 5 Star Movement originated — as a political formation — in 2009, the influence of its founder, Grillo, started in 2005 from the success of a personal blog. Therefore, an informal political activity was carried out before 2009 with citizens’ “meetups” and the external approval of Grillo to autonomous local civil lists. Although informally, therefore, groups of citizens inspired by the principles of what would become the Movement, entered a handful of minor municipalities with civic lists under different names. To avoid any confusion, this part of the analysis focuses on the 2012-2016 period (until the reform

– Legislative Decree 50/2016) and only identifies lists labeled “5 Star Movement” as a treatment. The staggered election framework,²⁷ leaving temporarily untreated units, coupled with the scattered lack of local organization by the Movement, leaves a suitable and large pool of possible contracts as counterfactuals.

Notably, the movement’s founder and the initial affiliates had probity and legality as the main value and political purpose, along with a general opposition towards traditional political parties, considered ancient and scarcely democratic (Veltri and Ceri, 2017). Most importantly, the fight against corruption, embodied by traditional parties, represented one of the pillars of the Movement’s action (Biorcio and Natale, 2013). Given their fight against corruption and their probity-related political values, the entrance of the Movement’s councillors represents a suitable natural experiment to test my hypothesis. Indeed, the entry of “*honesty-promoting’ competitors in the political arena*” might represent one of the “*countervailing forces external to the corrupt environment*” (Vannucci (2015)).

The stable unit treatment value assumption (SUTVA) assumption includes two requisites that must be satisfied to proceed with identification: firstly, the ‘no hidden variations of treatments’, and secondly the ‘no interference’ (Imbens and Rubin, 2015). As for the first, it requires units to be treated to the same amount. This is a rather strong assumption in the case at stake, as it would require the M5S to exert the same amount of political pressure in all the municipalities they entered. This is difficult to maintain exactly, as the number of council seats is different depending on the number of votes and the number of council seats available, which depends on the population of the municipality. In addition, it would crucially depend on the quality, competence, and effort of the single politicians entering the councils. Such differences cannot be completely ruled out. However, considering the significance of corruption issues for the 5SM and their initial fervor upon entering the political stage, it is reasonable to assume a substantial level of effort from local movements. Moreover, the 5SM acted as a local binder of unsatisfied people, presumably active in discussions at all levels, as the 5SM was at first a participative democracy experiment, where members voted on a platform for preferred topics. The regulatory framework, however, allowing councillors to intervene during assemblies and formally require further documentation from local governors, makes the presence in councils a prerequisite for thorough opposition on single and technical issues. Hence, the analysis in this section operates on the assumption of a growing yet concave correlation between the number of councillors and the intensity of political opposition, commencing from one and gradually escalating. It is argued that this relationship is plausible, even when taken to the extreme operationally, given that the presence of a second councillor is not expected to significantly augment the overall control over the ruling majority. In any case, in the second part of the analysis, which exploits coarsened exact matching with the binary presence of the M5S, the regressions on the resulting samples also employ two continuous variables, namely the percentage of M5S councillors and their numbers at the election.

The second part of the SUTVA posits that there should be no spillovers among units, meaning that councillors in one municipality should not exert control over neighboring municipalities. While

²⁷A political mandate lasts 5 years, however, it is not rare that a mayor loses the support of her majority, and therefore the entire political body decays.

complete assurance of this condition is challenging, it is crucial to recognize that the degree of control within a municipality is significant, particularly concerning technical issues like awarding mechanisms. Although there may be some supralocal coordination, the primary political interest remains at the municipal level. Councillors, typically individuals with other occupations, often lack the time to monitor activities beyond their mayors. Given these considerations, the presence of at least one councillor is selected as the primary treatment, acknowledging that the assumptions may not be entirely foolproof.

Finally, a remark on the methodology and the choice of matching over diff-in-diff. While the entrance of the 5 Star Movement is staggered and quasi-random, a diff-in-diff approach (like that proposed by Shaikh and Toulis (2021)) is not suitable because of two factors: first and foremost, the treatment coincides with the change in the mayor and administration issuing the contracts, potentially confounding the effects; secondly, the disguised entrance before 2009 potentially represents another source of confusion. Matching, on the other hand, allows to remove (control) the timing issues and only requires unconfoundedness and common support, as will be discussed below.

Therefore, the analysis exploits methods based on matching to estimate the average treatment effect on the treated (ATT). Since municipalities could sort into treatment based on the potential outcomes — in fact, monitoring corruption is one the main goals of the 5SM — the ATT is the only meaningful parameter that can be estimated, as it relies on conditional independence — a part of unconfoundedness — meaning that potential outcomes for untreated units do not depend on treatment, conditional on confounders. In other words, the behavior of untreated observations must be explained by either irrationality or reasons extraneous to the potential outcome, explaining why they did not take the treatment (Cunningham, 2021). Most notably, there are at least two sources of randomness in the treatment level: the first and most important is provided by the staggered timeframe of local elections; the second is the scattered — and possibly random — lack of local organization of the 5SM. Finally, pre-existent corruption levels are controlled for in the coarsened exact matching part, while matched neighbors come from the same region in the first part (nearest neighbor matching). This methodology should ensure that (a) untreated controls provide suitable counterfactuals; and (b) that environmental corruption levels are taken into account by design, instead of relying upon measures suffering from intrinsic limitations due to the hidden nature of the phenomenon.

5.2.2 Nearest-neighbour matching

The first part of the analysis exploits nearest-neighbor matching at the contract level based on Mahalanobis distance to identify the counterfactuals. The variables used for the matching exercise are project value, population, and indicators for the region, the year, and the 2 digits CPVs. Notably, the counterfactuals are forced to come from the same level of indicator variables, namely from the same region, year, and the same sector. This should ensure that all possible confounders are accounted for while avoiding bias in matching. The common support assumption, therefore, only concerns the two continuous variables, namely population and project value. As seen in Figure 1 in the appendix, the overlapping of the densities of treated and controls is not perfect for the

population. However, the estimator uses Abadie and Imbens (2006, 2011) bias-correction adjustment for the continuous variables, which should attenuate the issue. Notably, the methodology assumes a linear relationship between the potential outcomes and the controls since it uses OLS to predict missing counterfactuals (outside the common support) to compute and remove the bias. Here, this means a linear relationship between discretion (the probability of choosing a negotiated procedure) and population. Both the logarithm of the population and the non-logarithm population are used to ensure robustness. Moreover, Table 3 proposes alternative ranges of population estimates to provide some further checks. The selection of the two population thresholds is based on regulatory provisions that could (albeit weakly) impact municipal governance. Specifically, the thresholds correspond to significant changes in the electoral rule (15 thousand, as illustrated in paragraph 3.2) and the presence of local subdivisions at the municipal level, such as electoral constituencies for municipalities with a population exceeding 250 thousand people. Notably, specifications e) and f) provide decent overlap in population for the treated and untreated, adding robustness to the overall results. The average treatment effect on the treated is estimated to range from a 4 to 8 % decrease in the likelihood of using a negotiated procedure for the selection of the private counterpart.

Table 3: ATT estimates using Mahalanobis distance and bias adjustment on contracts since 2012. The total number of treated observations in the sample is 4,585.

Est.	Sample	Pop.	N_obs	N_treated	Matches	Coeff.	std. err.	95% conf. interval
a	Full	log	20,936	4,347	1	-0.062	0.015	-0.091 -0.033
b	Full	log	20,936	4,347	3	-0.068	0.011	-0.090 -0.046
c	Full	n	20,936	4,347	1	-0.085	0.013	-0.110 -0.060
d	Full	n	20,936	4,347	3	-0.090	0.010	-0.110 -0.070
e	pop <250k	n	19,093	3,190	1	-0.043	0.013	-0.069 -0.017
f	pop <250k	n	19,093	3,190	3	-0.039	0.011	-0.060 -0.018
g	15k <pop <250k	n	5,640	2,397	1	-0.047	0.017	-0.081 -0.014
h	15k <pop <250k	n	5,640	2,397	3	-0.055	0.015	-0.084 -0.026

5.2.3 Coarsened exact matching and LPM

This section exploits coarsened exact matching (Iacus et al., 2012) to both provide a stand-alone analysis and a robustness check for the results obtained by nearest-neighbor estimation. The identification strategy here is to refine the sample as much as possible to provide a suitable comparison and repeat the full LPM model in (4) using the presence of the 5 Star Movement in place of the political indicators. Moreover, the introduction of weights ensures the balance between treated observations and their controls (Iacus et al., 2012). In addition, estimations with two continuous variables accounting for the presence of the M5S, namely the number and percentage of M5S councillors, are provided.

The variables used for matching are, as before: project value, population, region, year, and two-digit sector. All variables are matched exactly, although the continuous variables are binned before.

In Table 4. A) the procedure results in a sample of 15,333 observations, of which 3,199 treated and 12,134 untreated, therefore discarding 1,386 treated and 9,193 untreated contracts. In Table 4. B) the same procedure is used using only observations reporting the economic criteria of awarding (the lower price or most economically advantageous) resulting in a sample of 10,006 observations (2,652 treated and 7,354 untreated, therefore pruning away 1,607 treated and 6,165 untreated contracts). Results are provided in Table 4 below, reporting ATTs showing a reduced likelihood of choosing negotiated procedures ranging from -6 to -7%. Moreover, the number of 5SM councillors and their share of the total is always statistically significant too, and negative.

However, as shown in Figure 2 in the appendix, the common support assumption is not entirely satisfied concerning the variable population, as treated observations in the sample are bigger in the aggregate. This partially represents an issue, because matching methods rely on the common support assumption. Nevertheless, as long as there is some degree of overlap between the two groups this is less of a problem for regressions, and the estimates still provide valuable insights, especially when combined with results from nearest-neighbor matching in section 5.2.2. Moreover, the sign of population is positive and significant both in these estimations and in those in section 5.1, showing some degree of linear correlation with the dependent variable, thus strengthening the inference made by extrapolation. Unfortunately, the same analysis repeated on a subsample of contracts issued by municipalities with a population ranging between 15 and 250 thousand is not able to precisely estimate the coefficient for the variable of interest (treatment). Most notably, the number of observations is drastically reduced to 2,137 (of which 985 treated and 1,152 untreated), as is the number of municipalities remaining in the sample. In addition, the coefficient for the variable population is also imprecisely estimated. Results are reported in Table 5 in the appendix, while density overlap is visible in Figure 3 in the appendix. This adds uncertainty to the overall analysis.

Table 4: LPM on the use of discretion (1 for negotiated procedures, 0 for open or restricted formal auctions) at the contract level. Specifications 1-3 use regional fixed effects, and 4-6 use provincial fixed effects. All controls for mayors and municipalities characteristics and work type (4 digits CPVs) and project value (second-degree polynomial). Errors are clustered at the municipal level. Table B also controls for the use of the most economically advantageous price criteria (equals one). As the data for the criteria used to adjudicate the offer is often unreported, the number of observations used is significantly lower. Unbalanced observations have been pruned away with coarsened exact matching, as detailed above.

A) Dependent: discretion	(1)	(2)	(3)	(4)	(5)	(6)
Treated _{M5S} (binary)	-0.064*** (0.018)			-0.054*** (0.017)		
Councillors _{M5S}		-0.026** (0.011)			-0.023** (0.010)	
Councillors _{M5S} %			-0.003* (0.002)			-0.003* (0.002)
Population	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Corruption (prov)	0.227 (0.211)	0.237 (0.210)	0.249 (0.210)	-0.171 (0.329)	-0.166 (0.331)	-0.166 (0.331)
Voice (prov)	0.010 (0.112)	0.004 (0.113)	-0.003 (0.112)	1.447*** (0.233)	1.437*** (0.234)	1.436*** (0.234)
Mayor	X	X	X	X	X	X
Municipality	X	X	X	X	X	X
Work	X	X	X	X	X	X
Year	X	X	X	X	X	X
Region FE	X	X	X			
Province FE				X	X	X
Constant	0.911*** (0.241)	0.905*** (0.241)	0.907*** (0.241)	0.255 (0.217)	0.252 (0.218)	0.256 (0.219)
Observations	15,333	15,333	15,333	15,333	15,333	15,333
R-squared	0.124	0.122	0.121	0.168	0.167	0.166
N_municipalities	4344	4344	4344	4344	4344	4344
Regions/Provinces	15	15	15	86	86	86

Clustered standard errors in parentheses

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

B) Dependent: discretion	(1)	(2)	(3)	(4)	(5)	(6)
Treated _{M5S} (binary)	-0.074*** (0.019)			-0.064*** (0.018)		
Councillors _{M5S} %		-0.031** (0.013)			-0.028** (0.012)	
Councillors _{M5S}			-0.004** (0.002)			-0.003* (0.002)
Award criteria	-0.115*** (0.023)	-0.116*** (0.024)	-0.116*** (0.024)	-0.108*** (0.021)	-0.108*** (0.021)	-0.108*** (0.021)
Population	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Corruption (prov)	0.344 (0.325)	0.345 (0.326)	0.360 (0.326)	-0.736* (0.410)	-0.719* (0.411)	-0.717* (0.412)
Voice (prov)	-0.035 (0.139)	-0.044 (0.141)	-0.056 (0.140)	1.923*** (0.266)	1.905*** (0.264)	1.903*** (0.265)
Mayor	X	X	X	X	X	X
Municipality	X	X	X	X	X	X
Work	X	X	X	X	X	X
Year	X	X	X	X	X	X
Region FE	X	X	X			
Province FE				X	X	X
Constant	0.837** (0.357)	0.838** (0.360)	0.843** (0.360)	0.424 (0.273)	0.412 (0.274)	0.415 (0.275)
Observations	10,006	10,006	10,006	10,006	10,006	10,006
R-squared	0.107	0.103	0.101	0.156	0.154	0.152
N_municipalities	3066	3066	3066	3066	3066	3066
Regions/Provinces	15	15	15	86	86	86

Clustered standard errors in parentheses

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

6 Discussion

The results obtained in this paper showcase the existence of an effect of political competition on the utilization of discretionary award procedures in public procurement in Italy. In detail, it has been offered reasonable evidence of a reduction in the likelihood of choosing a negotiated procedure ranging from 4% to 8%, following the entrance of a new political party. This *prima facie* seems

at odds with pre-existing evidence. Indeed, while not directly addressing discretion, Coviello and Gagliarducci (2017) highlights the ineffective functioning of the political monitoring mechanism in the Italian context. One potential explanation is the perceived lack of political significance attributed to investments of a limited amount, which often constitute a substantial portion of the public expenditure for local authorities. Moszoro and Spiller (2012), exploring Coviello and Gagliarducci (2017) results, point to the electoral dispersion typical of Italian municipalities coupled with an inefficient judiciary. In this view, dispersion reduces the individual incentive of political opponents to monitor the probity of the governing party. Nevertheless, the findings of this study highlight a reduced inclination toward discretionary awarding procedures in the presence of particular political pressure. Indeed, the overall results of this study provide a potential reconciliation for divergent findings. While conventional political indicators do not exhibit a correlation with the use of discretion, the influence of the 5 Star Movement suggests the importance of probity-related political ideals in shaping the targeted outcome. These results, therefore, are not entirely in contradiction with Coviello and Gagliarducci (2017), but rather

A limitation of this study is the impossibility of reaching the precise channel of transmission between political pressure and the use of discretion. Discretionary procedures can be linked to corruption/favoritism, but also represent a suitable way to procure complex objects (Bajari and Tadelis, 2001) or to incorporate relational/reputational aspects in the award decision (Calzolari and Spagnolo, 2017; Bafundi et al., 2023). It is not possible here to discern between the two effects nor to compute a net effect on welfare. Notably, while answering an unanswered empirical question — namely whether political pressure influences the use of discretion — caution is suggested in stretching such results in any direction. The results, indeed, could point towards two nearly opposite interpretations: the destruction of equilibrium based on ‘*sharing compromising information*’ (as Gambetta (2018) describes the Italian case); and Spiller’s ‘*third-parties opportunism*’.

On the one hand, the entrance of the 5 Star Movement represents a suitable experiment. Indeed, it is an actor, in theory, capable of breaking possible collusion between the two preexisting factions. Such a form of political collusion could be sustained by mutual hostages in the form of compromising information (see also Della Porta (2004) interpreting the Italian situation before the scandals in the 90s). It was the common perception of a corrupt establishment that made its vigorous entry feasible, possibly ending up disturbing such equilibrium. The “*entry of ‘honesty-promoting’ competitors in the political arena*” can indeed represent a possible “*countervailing force external to the corrupt environment*” (Vannucci (2015)). The identified negative effect on discretion could substantiate this hypothesis, indicating a reduction in contractual practices linked to favoritism and corruption. Alternatively, it may suggest a shift towards other instruments, such as tailoring requisites in open auctions. This hypothesis also resonates with the results obtained by Alfano et al. (2023) — i.e., the negative correlation in the Italian context between political competition and reported “grand” corruption.

On the other hand, the results may be interpreted through the *third-parties opportunism* lens (Spiller, 2008) as a special case of *bureaucratic defense*. Well-intentioned public administrators, including mayors and bureaucrats, may be refraining from discretionary procedures as a defensive measure to prevent third parties from raising probity accusations. This defensive bureaucracy could

contribute to the inefficiencies of the Italian public procurement system. This could be read in line with Bandiera et al. (2009), which shows that, in the Italian case, public procurement is affected more by inefficiencies than corruption. Note, moreover, that Beuve et al. (2021) takes into due consideration the role of political tolerance in the picture, in particular concerning deviations from the initial contractual arrangements, but the same reasoning extends to the use of discretionary procedures. In detail, political tolerance is defined there as:

“given by the cultural setup (including trust in institutions), the rule of law, and foremost political contestability: high political competition correlates with low political tolerance, as political opponents will take advantage to overturn the incumbent public agent.” (Beuve et al., 2021, p. 5).

Again, the entrance of a political party that might be seen as intolerant represents a suitable testing environment. This, coupled with the findings presented above, raises an important point about the analysis of institutions, in general, and in particular concerning political competition. Importantly, the impact of political competition in this context is not only dictated by formal rules but is instead influenced by the entry of an external actor with inherent motivations, possibly highlighting the importance of informal rules and how the players play the game, rather than the rules themselves. This might resonate with the arguments presented in Bosio et al. (2022), namely that discretion is beneficial in high public sector capability countries and it is instead detrimental in low public sector capability settings. Nevertheless, it should also be stressed that political actors not only play the game but also design its rules, both in general and in public procurement specifically. Dávid-Barrett and Fazekas (2020), for instance, highlights the role of both the design of public procurement law and the possibility of deactivating the controls by civil society in shaping procurement outcomes.

7 Conclusions

This paper empirically examines the impact of political competition on the utilization of discretionary adjudication procedures in public procurement. Leveraging the entry of the 5 Star Movement – a probity-based and anti-establishment political actor – in Italy as a treatment, matching estimators yield an Average Treatment Effect on the Treated (ATT) showing a reduction of 4% to 8% concerning the likelihood of employing negotiated procedures over formal auctions. Unfortunately, the analysis cannot determine the direction of the effect on welfare, as reduced discretion may be associated with both reduced corruption (or differently channeled corruption) and inefficiency stemming from the impairment of pre-contractual screening. The findings are indeed consistent with both bureaucratic defensive strategies – in particular due to *third-parties opportunism* (Spiller, 2008) – and the disruption of a forbearance equilibrium between parties upheld by mutual hostages (Della Porta, 2004; Gambetta, 2018). Additionally, the study tests the impact of various measures from the political economy literature that gauge political competition on the use of discretion, revealing no significant results. This underscores the importance of considering specific political positions

when evaluating effects related to probity or corruption.

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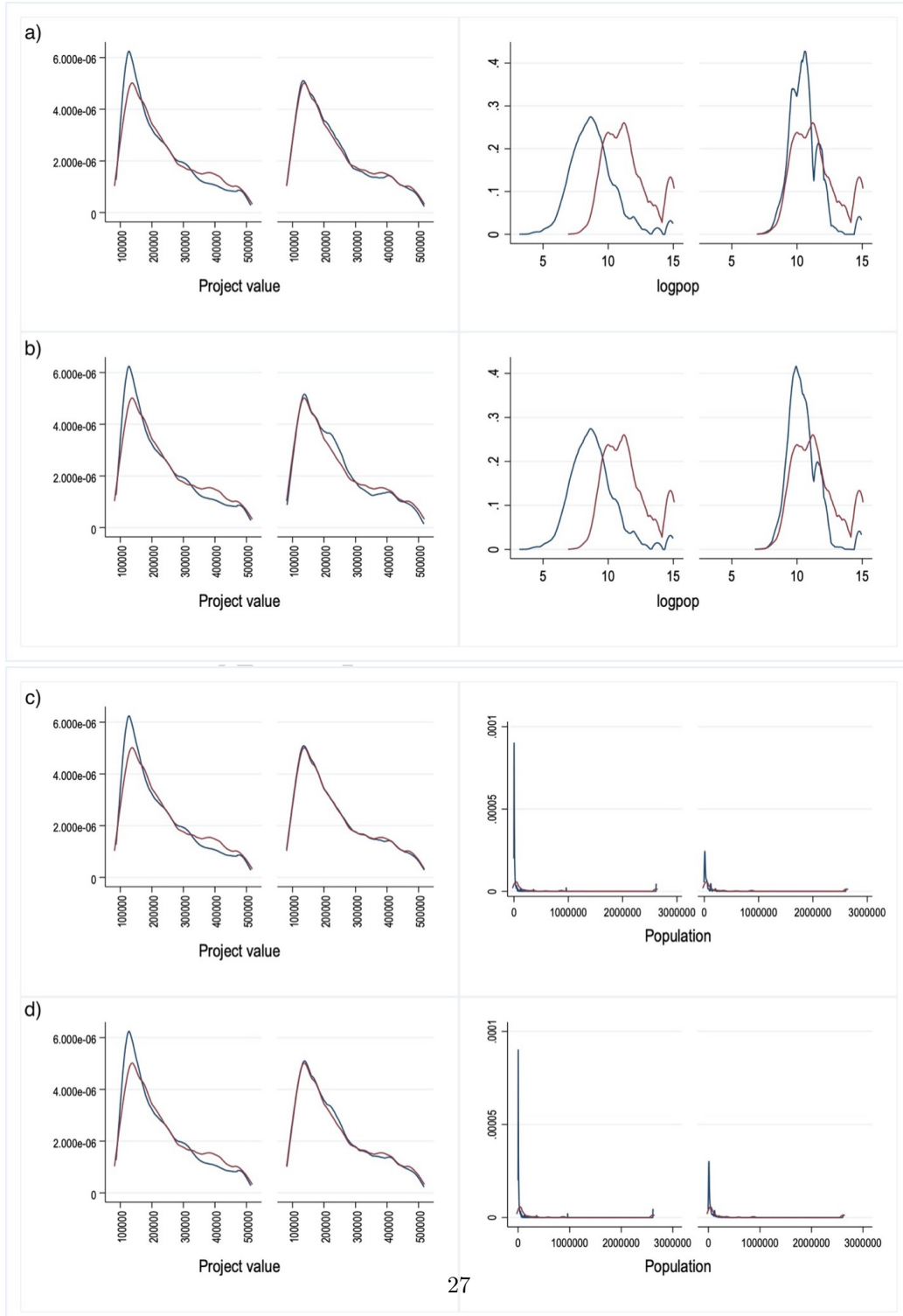
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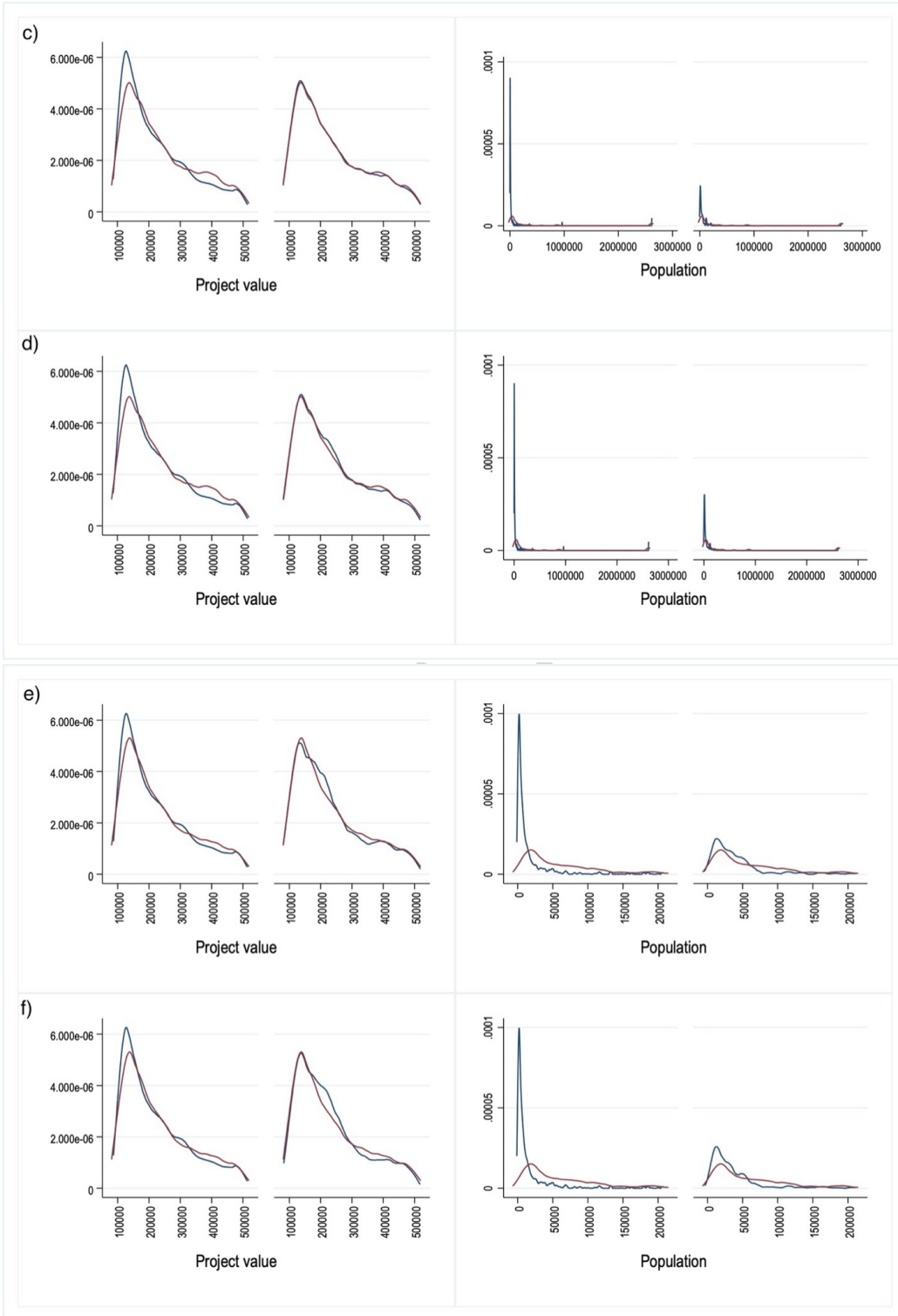
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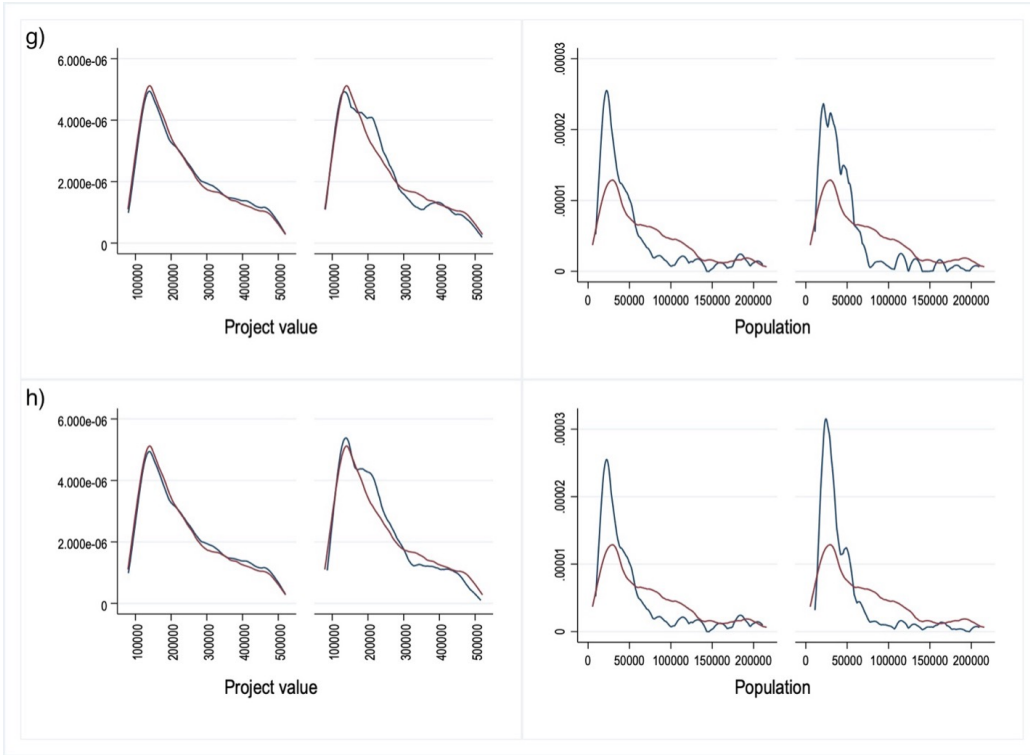
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APPENDIX

Figure 1: Density balance graphs for the quality of the matches in Table 2. Each line represents a match from the table above on the two continuous variables used. For each continuous variable, there is the raw data – on the left – and the matched sample – on the right. The treatment group is in red, while the control group is in blue.







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Figure 2: Density comparison of the variables population and project value for the sample of the estimations in A). The graph for the population only depicts municipalities with a population lower than 250 thousand for exposition clarity.

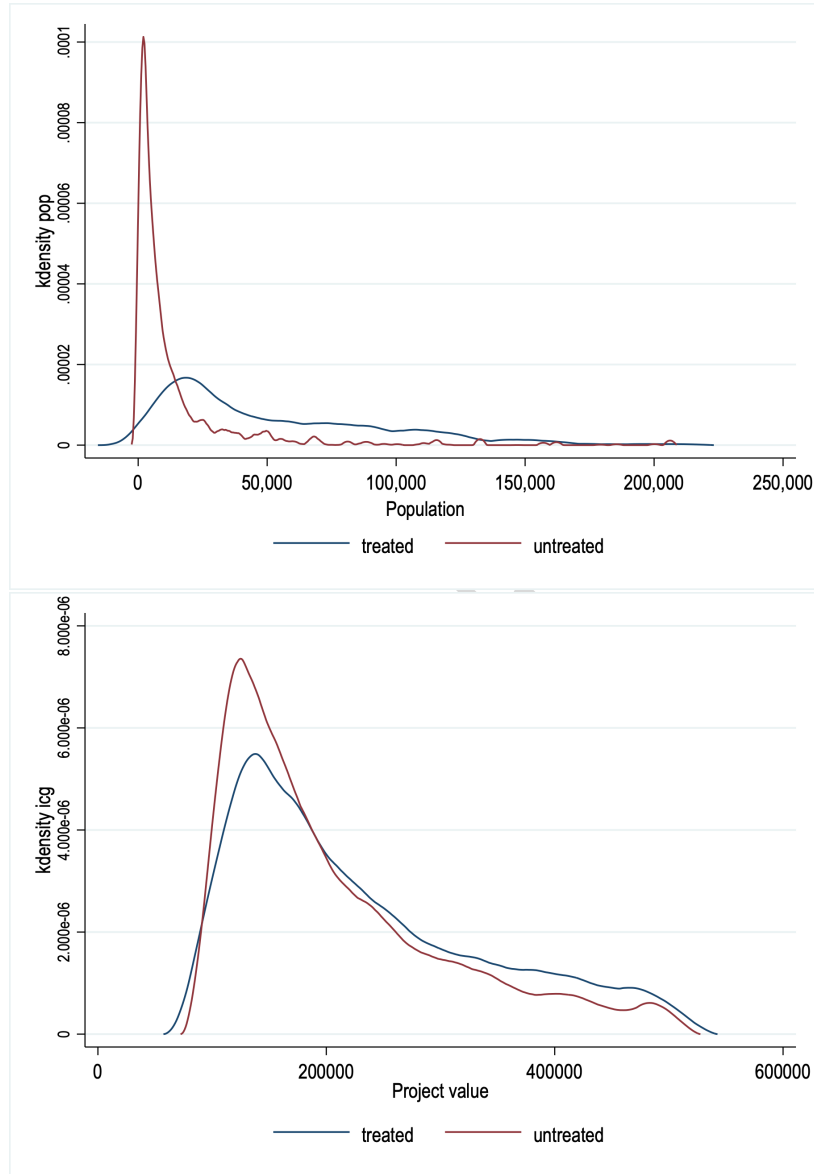


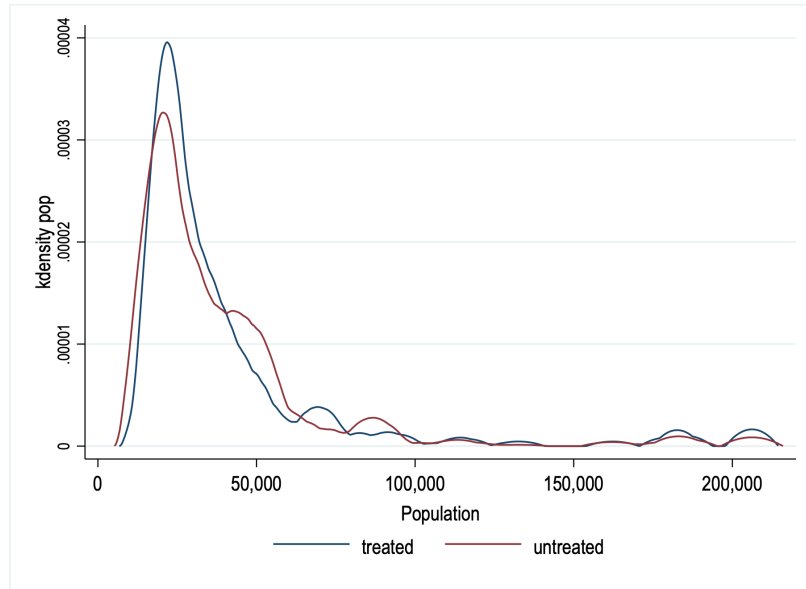
Table 5: LPM on the use of discretion (1 for negotiated procedures, 0 for open or restricted formal auctions) at the contract level. Specifications 1-3 use regional fixed effects, and 4-6 use provincial fixed effects. All controls for mayors and municipalities characteristics and work type (4 digits CPVs) and project value (second-degree polynomial). Errors are clustered at the municipal level. Table B also controls for the use of the most economically advantageous price criteria (equals one). As the data for the criteria used to adjudicate the offer is often unreported, the number of observations used is significantly lower. Unbalanced observations have been pruned away with coarsened exact matching, as detailed above.

Dependent: discretion	(1)	(2)
Treated _{M5S} (binary)	0.004 (0.023)	0.011 (0.025)
Population	0.000 (0.000)	0.000 (0.000)
Corruption (prov)	0.150 (0.264)	-1.151 (1.877)
Voice (prov)	-0.324* (0.173)	0.032 (0.983)
Mayor	X	X
Municipality	X	X
Work	X	X
Year	X	X
Region FE	X	
Province FE		X
Constant	1.234*** (0.313)	1.751* (1.024)
Observations	2,137	2,137
R-squared	0.188	0.280
N_municipalities	409	409
Regions/Provinces	15	86

Clustered standard errors in parentheses

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

Figure 3: Density comparison of treated and untreated units for the sample used in Table 5, using only population between 15 and 250 thousand.



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