# Discretion and Political Favoritism:
# Evidence from Two Reforms in Public Procurement

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# Agenda

**1** Introduction

**2** This paper: changes in regulation and political favoritism
    Changes in discretionary thresholds: Two reforms in the Czech Republic
    Contracts records, political connections, firm data

**3** Empirical strategy: discontinuities and bunching
    Misuse of discretion and contract value manipulation
    Regression discontinuity with two running variables

**4** Conclusion and discussion

# Discretion and Political Favoritism: Evidence from Two Reforms in Public Procurement

- How much discretion should public procurement officers have?

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  - Inefficiency, contract value manipulation, corruption
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- Research questions

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  2. How does political favoritism confounds the effects of reforms on procurement market outcomes?

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  1. Adaptation of discretion misuse when rules change

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  1. Adaptation of discretion misuse when rules change
  2. Identification of the effects of two levels of discretion on market outcomes

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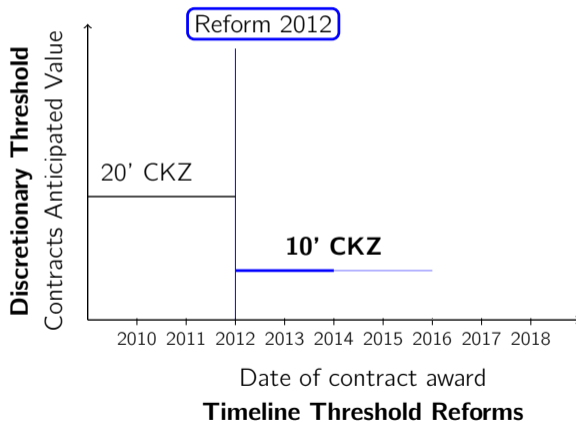   Regression discontinuity with two running variables

4. Conclusion and discussion

# Agenda

- We study a salient form of regulation discretionary thresholds determined by public procurement laws.
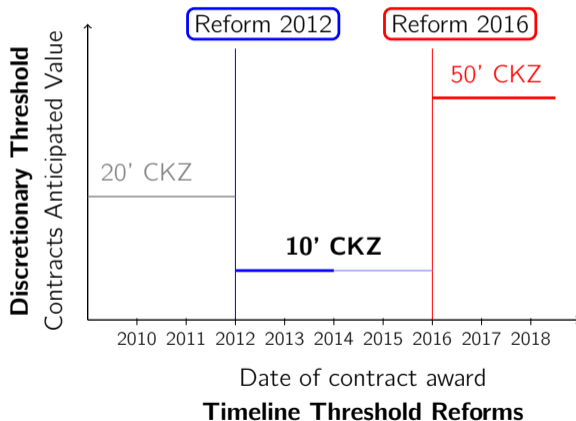
# Two reforms in the Czech Republic public procurement national regulation

- We study a salient form of regulation discretionary thresholds determined by public procurement laws.



**Timeline Threshold Reforms**

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**Timeline Threshold Reforms**

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# Data sources

- We use four sources of data:
  1. Public procurement contract records. Contracts awarded in the construction sector. Final sample of 26000 awarded contracts.
  2. Public datasets of political candidates, annual reports of political parties, and anonymously owned companies
  3. Public companies' registry with board members
  4. *Orbis* dataset Bureau van Dijk with firms' input

  ▸ Table

# Agenda

# Empirical strategy: discontinuities and bunching

- Bunching estimators for studying the misuse of discretion as contract value manipulation
  1. We measure binned distribution of contracts pre and post-reform and estimate bunching at thresholds post-reform (Chetty, 2011; Kleven, 2013; Palguta and Pertold, 2017; Carril, 2022)

  - Demand for discretion: sorting of contracts under cutoffs

  ⟫ Bunching

- Regression Discontinuity Design, Fuzzy estimator and two scores
  1. We use the arbitrary discretionary threshold and the date of the reform as two conditions to define treatment and control.(Cataneo et al, 2016; Cattaneo et al, 2020; Gori, 2023)

  - Contract price
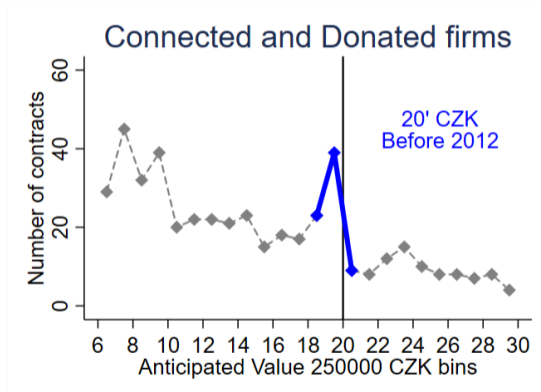  - Number of bidders
  - Productivity of the firm

  ⟫ RDD

# Agenda

# Misuse of discretion is higher when discretion is restricted
*Firms connected or donated to political parties - Reform 2012*



Connected and Donated firms

20' CZK
Before 2012

*Number of contracts* (y-axis: 0, 20, 40, 60)
*Anticipated Value 250000 CZK bins* (x-axis: 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30)

14

# Misuse of discretion is higher when discretion is restricted
*Firms connected or donated to political parties - Reform 2012*

Contract value manipulation adjusts to new defined thresholds
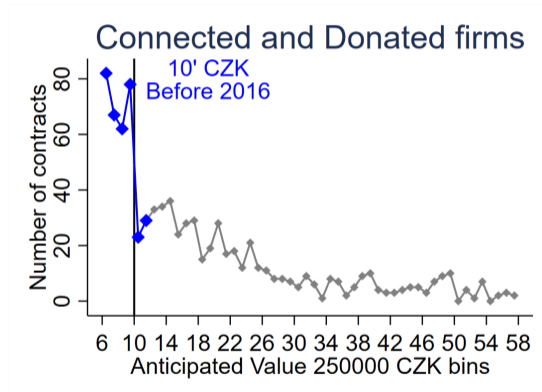


**Connected and Donated firms**
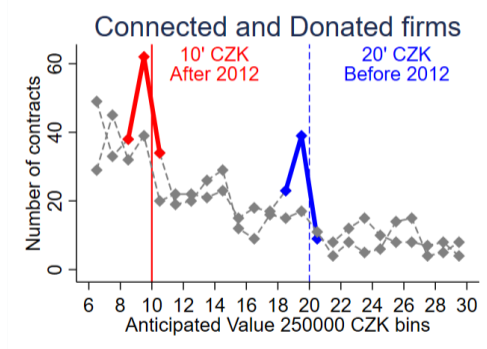
Estimated number of contracts awarded to firms with political favoritism after the 2012 reform is 55% higher in the bunching area at the new threshold. It is 14% lower at the old threshold.

▸ Sample

# Misuse of discretion is less evident when discretion is broadened

*Bunching Connected and Donated Firms - Reform 2016*



Connected and Donated firms

10' CZK
Before 2016

Number of contracts

Anticipated Value 250000 CZK bins

# Misuse of discretion is less evident when discretion is broadened
*Firms connected or donated to political parties - Reform 2016*



Connected and Donated firms
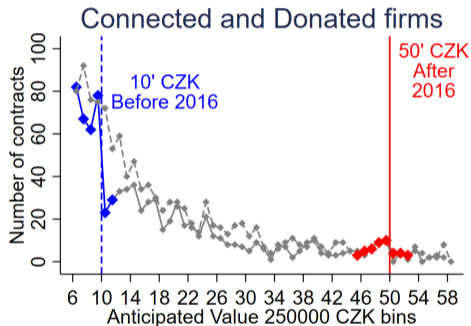
Estimated number of contracts awarded to firms with political favoritism after the 2016 reform is 28% lower in the bunching area at the new threshold. It is also 23% lower at the old threshold.

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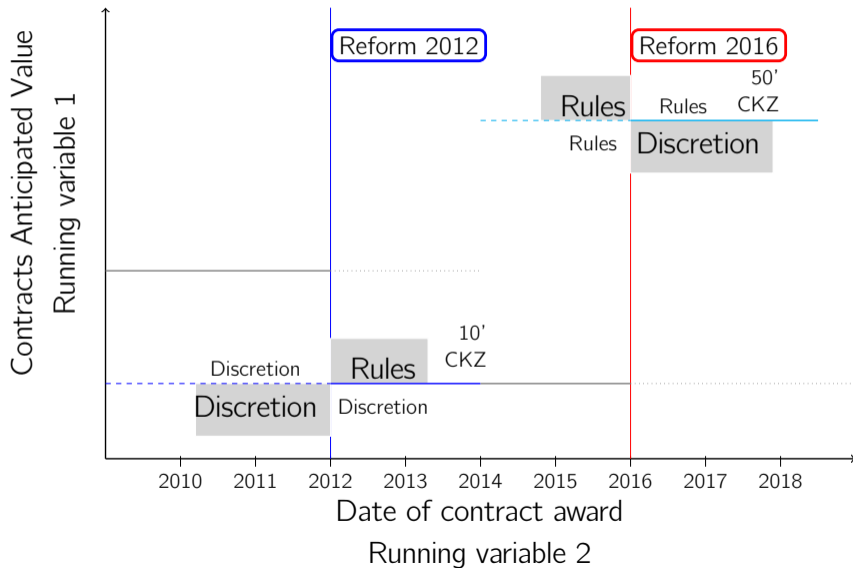
The final price of contracts awarded to firms with political connections was lower after reform 2012.



Price
Reform 2012

Price
Reform 2016
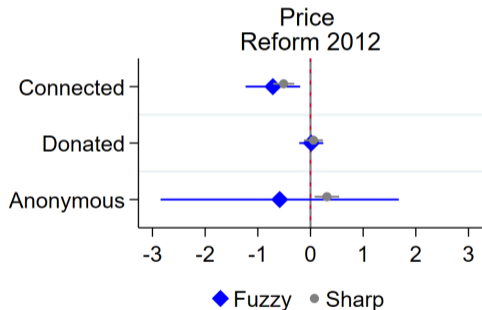
Estimates rdrobust Calonico et al. (2014)

Estimates rdrobust Calonico et al. (2014)

# Number of competitors increases when discretion is restricted



Bids
Reform 2012

Estimates rdrobust Calonico et al. (2014)

Bids
Reform 2016

Estimates rdrobust Calonico et al. (2014)
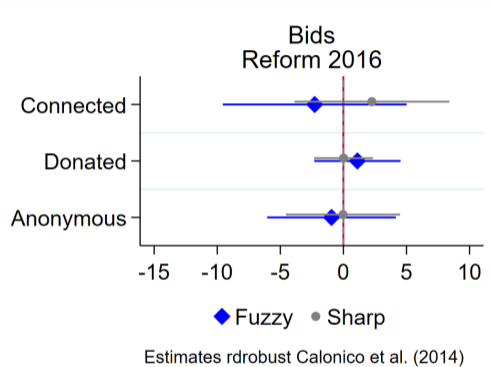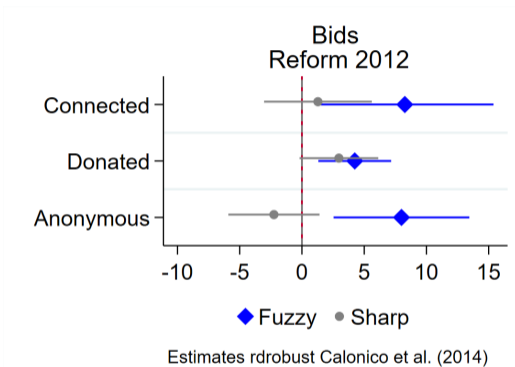
When discretion is granted, firms with political favoritism tend to compete with fewer bidders.

Firms with political connections that were awarded contracts after the reform 2012 under less discretion seem to be more productive that the average of other firms in the same sector.



Productivity
Reform 2012

Productivity
Reform 2016
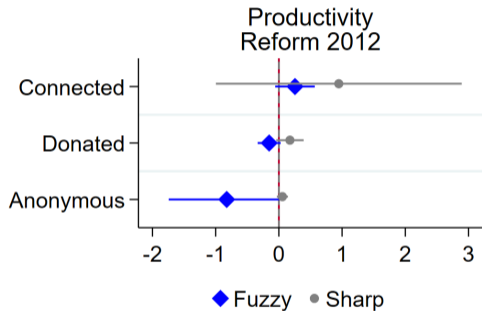
Estimates rdrobust Calonico et al. (2014)
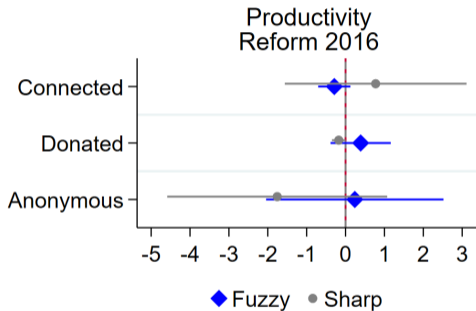
Estimates rdrobust Calonico et al. (2014)

When contracts are awarded under more discretion, firms that donated to political parties are more productive than an average firm.

# Agenda

- Misalignment issues between principals and agents, driven by the agents' preference for discretion (Bandiera et al (2019); Bosio et al (2022); Szucs (2020) )in an institutional context where corrupt activities are likely to occur Decarolis et al (2024); Baranek and Titl (2024).

- Theoretical framework of active and passive waste in public spending of Bandiera et al (2019) and on the definition of demand for discretion proposed by Szucs (2020).

- Similarly to Decarolis et al (2024), we consider that risks of corruption and political favoritism are institutional factors that confound the preference for discretion.

# Conclusions

- In the reform of 2012 (Decrease discretion), firms with both personal and financial connection with politicians had an increase of 52% for contracts awarded at the post-reform threshold of 10 million after the reform in 2012.
- In the reform of 2016 (Increase discretion) bunching decreases.
- When discretion is restricted in 2012, 39 million dollars were transferred to firms with political favoritism.
- When discretion is encouraged there are potential savings of 22 million dollars associated to less contracts awarded to connected and donors firms.

# Conclusions

- When discretion is restricted the final prices of the contracts awarded are more efficient.

- Discretionary reform that grants more discretion does not increase nor decrease final prices

- Political favoritism is a crucial channel that affects the number of bids in tendering process.

# Appendix

# Bunching - all contracts reform 2012 (1)
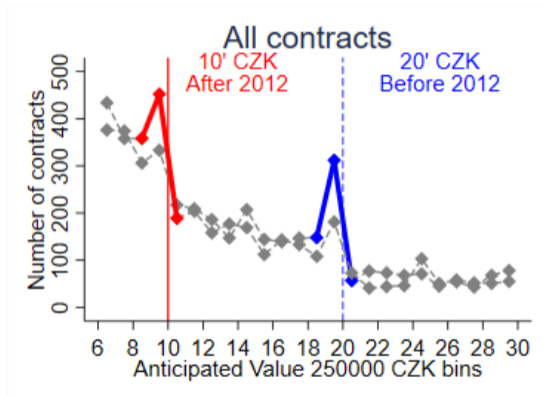
# Regulatory context

| Period | Date Acts' modifications | | Simplified | | | National | | | EU | |
|---|---|---|---|---|---|---|---|---|---|---|
| Reform | Effective 1st July 2006<br>Valid 19 April 2006 | $6$ | $<$ | $X_i$<br>range 14' | **20** | $\leq$ | $X_i$ | $\leq$ | 132 | $\leq$ | $X_i$ |
| 2012 | Effective 1st April 2012<br>Valid 24 February 2012 | $3$ | $<$ | $X_i$<br>range 7' | **10** | $\leq$ | $X_i$ | $\leq$ | 132 | $\leq$ | $X_i$ |
| Reform | Effective 1st January 2014<br>Valid 30 September 2013 | $6$ | $<$ | $X_i$<br>range 4' | **10** | $\leq$ | $X_i$ | $\leq$ | 132 | $\leq$ | $X_i$ |
| 2016 | Effective 1st October 2016<br>Valid 29 April 2016 | $6$ | $<$ | $X_i$<br>range 43' | **50** | $\leq$ | $X_i$ | $\leq$ | 132 | $\leq$ | $X_i$ |

◄ Back

Note: Effective date refers to the exact date when the law or amendment comes into effect. Valid date refers to the date when the law or amendment is announced or enacted. We exclude contracts within this transition period. The column simplified refers to simplified procedure. The column National refers to all other procurement processes that are above the simplified procedure threshold, and that ‹ Back are below the European threshold for procurement. EU refers to the limit above which contracts are tendered in the European market. The numbers are millions of CZK, as follows: 3 CZK ($140k), 6 CZK ($280k), 10 CZK ($470k), 20 CZK ($940k), 50 CZK ($2.36M), 132 CZK ($6.23M)

# Descriptive data sources (1)

- Administrative records of all Czech procurement contracts for the 2006 to 2021. 26.378 procurement contracts awarded in the construction sector from 2010 to 2018. (Source Datlab)

- From Bureau van Dijk to measure productivity and market competitiveness of suppliers. (Orbis)

|  | Mean | SD | N |
|---|---|---|---|
| *Tenders Outcomes* | | | |
| Anticipated Value (CZK) | 18.582 | 14.934 | 26,378 |
| Final Value (CZK) | 15.086 | 15.707 | 26,291 |
| Normalized Price (Final/Anticipated) | 0.797 | 0.214 | 26,218 |
| Log Normalized Price | -0.278 | 0.372 | 26,218 |
| Competition (Number bids) | 6.060 | 3.966 | 25,910 |
| Competitiveness(Lagged Z Productivity) | 0.052 | 0.630 | 10,043 |

# Descriptive data sources (2)

- Public companies' registry with board members
- Public datasets of political candidates and annual reports of political parties, and anonymously owned companies. (Web scraped)

|  | Mean | SD | N |
|---|---|---|---|
| *Favoritism* | | | |
| Political Donor | 0.199 | 0.399 | 26,378 |
| Political Connection | 0.085 | 0.278 | 26,378 |
| Anonymously Owned | 0.069 | 0.254 | 26,378 |
| Donor & Connected | 0.069 | 0.254 | 26,378 |
| Connected & Anonymous | 0.048 | 0.214 | 26,378 |
| Donor & Anonymous | 0.036 | 0.185 | 26,378 |
| Connected & Donor & Anonymous | 0.046 | 0.210 | 26,378 |
| Value donations | 0.186 | 0.257 | 9,244 |
| Number donations | 3.289 | 3.086 | 9,244 |
| Number of connections | 1.429 | 1.179 | 8,003 |

# Empirical strategy: Bunching estimation
## Contract value manipulation, discretion and favoritism

- We measure binned distribution of contracts pre and post-reform and estimate bunching at thresholds post-reform (Chetty (2011) ; Kleven (2013) ; Palguta and Pertold (2017); Carril (2022)

- Counterfactual scenario: distribution pre-reform around the new threshold. The threshold would have stayed the same after the reform.

- Assumption: bunching affects the control distribution only at the pre-reform threshold not at the post-reform threshold.

$$NC_{jt} = \alpha_j + \alpha_t + \sum_{i=-AC_Y^-}^{C-} \gamma_i \mathbb{1}[Bin_j = i]\mathbb{1}[t > Y_{LM}] + \sum_{i=-AC_Y^+}^{C+} \eta_i \mathbb{1}[Bin_j = i]\mathbb{1}[t > Y_{LM}] + \varepsilon_{jt} \qquad (1)$$

Grouped contracts into sorted accumulated bins of 1 million CZK ($47k) per year. $NC_{jt}$ is a counting variable that indicates the number of contracts in each bin. Poisson Fixed Effects regression model to equation 1. ◂ Back

All contracts

10' CZK
Before 2016
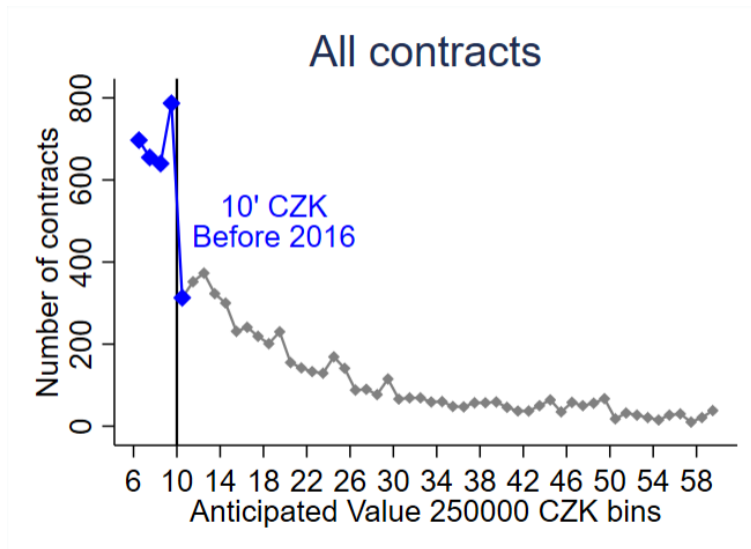
◂ After

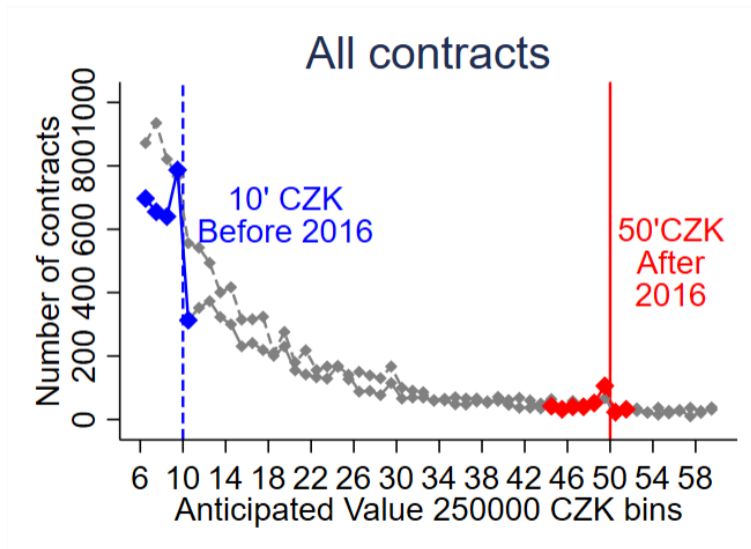# Estimates reform 2012 - restricted bureaucratic discretion.

Firms with both personal and financial connection with politicians had an increase of 52%

| | All contracts | Non connected | Connected | Donated | Anonymous | Connected & Donated | Connected & Anonymous | Donated & Anonymous | Connected & Donated & Anonymous |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| $\hat{\gamma}_1$ | -0.467* | -0.556** | -0.386 | -0.003 | -0.497*** | -0.939** | 0.028 | -0.898*** | -0.198 |
| | (0.253) | (0.265) | (0.333) | (0.172) | (0.149) | (0.436) | (0.478) | (0.228) | (0.434) |
| $\hat{\gamma}_2$ | -0.275*** | -0.306** | 0.041 | -0.462*** | 0.076 | -0.465** | -0.738** | -0.148 | -0.619 |
| | (0.054) | (0.138) | (0.317) | (0.119) | (0.242) | (0.211) | (0.375) | (0.343) | (0.474) |
| $\hat{\eta}_1$ | 0.447*** | 0.475*** | 0.585* | 0.720*** | -0.004 | 0.419*** | 0.194* | 0.070 | 0.131 |
| | (0.070) | (0.107) | (0.302) | (0.083) | (0.179) | (0.078) | (0.112) | (0.234) | (0.210) |
| $\hat{\eta}_2$ | 0.218*** | 0.142 | 0.565** | 0.243* | 0.591*** | 0.277*** | 0.034 | 0.508* | 0.288 |
| | (0.072) | (0.097) | (0.233) | (0.135) | (0.185) | (0.087) | (0.113) | (0.292) | (0.223) |
| Constant | 4.484*** | 3.923*** | 1.995*** | 2.785*** | 1.579*** | 2.185*** | 1.907*** | 1.848*** | 1.369*** |
| | (0.017) | (0.020) | (0.034) | (0.027) | (0.034) | (0.030) | (0.029) | (0.030) | (0.038) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Bins FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 293 | 293 | 250 | 290 | 254 | 290 | 273 | 281 | 252 |
| ll | -888.7 | -671.1 | -356.9 | -575.9 | -373.5 | -490.7 | -454.6 | -459.5 | -340.3 |

Standard errors in parentheses

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

We interpret coefficients as $(\exp(\gamma - 1)) * 100$ and $(\exp(\eta - 1)) * 100$

# Estimates reform 2016 - broader bureaucratic discretion.

Firms both with personal and financial political connection show decrease 23%

| | All contracts | Non connected | Connected | Donated | Anonymous | Connected & Donated | Connected & Anonymous | Donated & Anonymous | Connected & Donated & Anonymous |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| $\hat{\gamma}_1$ | -0.317*** | -0.327*** | -0.284 | -0.286** | -0.347** | -0.446* | -0.319 | -0.306 | -0.225 |
| | (0.065) | (0.043) | (0.224) | (0.118) | (0.162) | (0.229) | (0.322) | (0.419) | (0.593) |
| $\hat{\gamma}_2$ | 0.107 | 0.250* | -0.384*** | -0.029 | -0.219 | -0.185 | 0.034 | -0.315* | -0.436*** |
| | (0.096) | (0.143) | (0.146) | (0.175) | (0.213) | (0.129) | (0.156) | (0.182) | (0.163) |
| $\hat{\eta}_1$ | 0.203 | 0.457 | 0.950 | 0.171 | -0.953*** | -0.288 | 0.475 | 0.149 | -0.134 |
| | (0.280) | (0.333) | (0.732) | (0.338) | (0.345) | (0.459) | (0.336) | (0.335) | (0.554) |
| $\hat{\eta}_2$ | -0.408 | -0.614 | -0.554*** | -0.348 | 0.705** | -0.317 | -1.471*** | -1.103 | -1.520** |
| | (0.313) | (0.554) | (0.193) | (0.495) | (0.293) | (0.336) | (0.329) | (0.741) | (0.732) |
| Constant | 4.488*** | 3.821*** | 2.219*** | 2.860*** | 1.611*** | 2.264*** | 2.016*** | 1.688*** | 1.329*** |
| | (0.012) | (0.014) | (0.031) | (0.021) | (0.027) | (0.028) | (0.037) | (0.037) | (0.054) |
| Bins FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 413 | 413 | 398 | 407 | 403 | 409 | 401 | 404 | 370 |
| ll | -1,273.2 | -1,012.2 | -563.4 | -789.9 | -597.8 | -656.0 | -650.8 | -595.7 | -461.5 |

Standard errors in parentheses

* p¡0.1, ** p¡0.05, *** p¡0.01

We interpret coefficients as $(\exp(\gamma - 1)) * 100$ and $(\exp(\eta - 1)) * 100$

# Empirical strategy: Discontinuities estimation
## Restricting discretion, granting discretion and favoritism

We use the arbitrary discretionary threshold and the date of the reform as two conditions to define treatment and control.cattaneoInterpretingRegressionDiscontinuity2016, Cattaneo2020, Gori2023

$$P(R_i|X_i) = \begin{cases} g_1(X_i) \text{ if } X_{it} \geq C_Y \wedge & X_{it} > Y_t \\ g_0(X_i) \text{ if } X_{it} < C_Y \wedge & X_{it} < Y_t \end{cases} \tag{2}$$

We rely on Multi-Score Regression Discontinuity design assumptions [?], [?], [?], and [?] The treatment group corresponds to contracts upon which more strict rules apply and are excluded of using simplified procedures. The control group does not follow strict rules and is observed before the reforms. ◂ Back

## Fuzzy RDD

- As instrument we use the uptake of simplified procedures, $Z_i$ and its interaction with the cutoff $Z_i(X_i - C_Y)$.

- The effect of interest is then estimated by $\hat{\tau}_{FRD} = \frac{\delta_{Y_i}}{\delta_{D_i}}$

$$Y_i = \alpha_B + \alpha_{EUF} + \alpha_{mse} + \beta(X_i - C_Y) + \lambda D_i(X_i - C_Y) + \delta D_i + \varepsilon_i \qquad (3)$$

$$D_i = \alpha_B + \alpha_{EUF} + \alpha_{mse} + \beta(X_i - C_Y) + \lambda Z_i(X_i - C_Y) + \delta Z_i + \mu_i \qquad (4)$$

The separation between the reform of 2012 and the reform of 2016 allows us to draw conclusions from the institutional context where the scope of discretion got constrained by law and an institutional context where the law enabled broader discretion in public procurement.

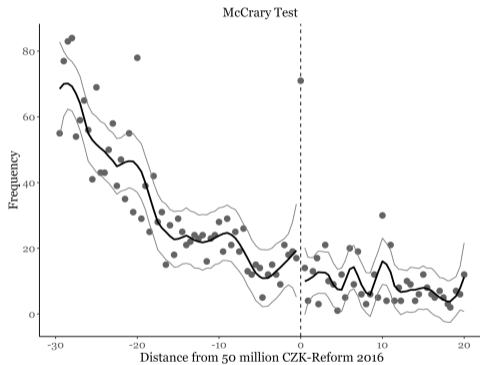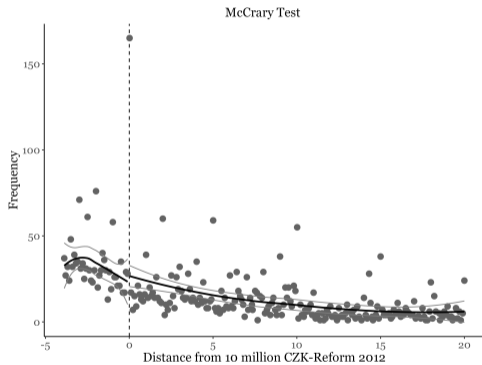# Discontinuity in running variable 1: Anticipated value
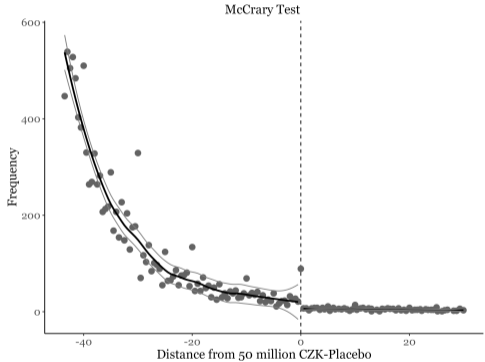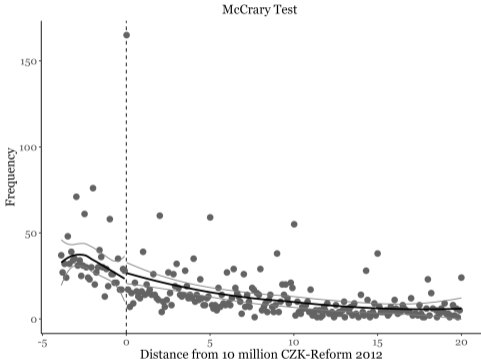
# Discontinuity in running variable 2: Date of award
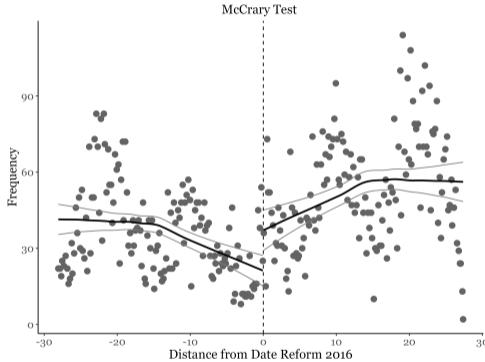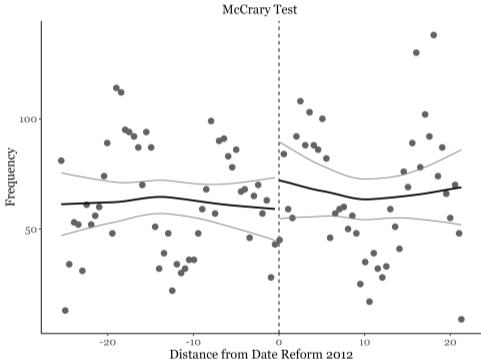
# Discontinuity in multiscore running variable

# Regression discontinuity design estimations for normalized price, number of bids and competitiveness

| | Normalized Price | | | | Bids | | | | Competitiveness | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Restricted Discretion | | Granted Discretion | | Restricted Discretion | | Granted Discretion | | Restricted Discretion | | Granted Discretion | |
| | 2012 | | 2016 | | 2012 | | 2016 | | 2012 | | 2016 | |
| | $\tau_F$ | $\tau_S$ | $\tau_F$ | $\tau_S$ | $\tau_F$ | $\tau_S$ | $\tau_F$ | $\tau_S$ | $\tau_F$ | $\tau_S$ | $\tau_F$ | $\tau_S$ |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| Connected | -1.10 | -0.26 | -0.03 | -0.01 | 7.08 | 3.32 | -1.56 | -0.90 | 0.03 | -0.01 | 0.16 | 0.09 |
| | (2.05) | (0.09)** | (0.15) | (0.07) | (5.81) | (1.43)* | (2.08) | (1.10) | (0.11) | (0.03) | (0.13) | (0.08) |
| Donated | -0.19 | -0.08 | -0.01 | -0.00 | 10.84 | 3.93 | 2.79 | 1.28 | -0.23 | -0.04 | 0.03 | 0.01 |
| | (0.12) | (0.04)* | (0.08) | (0.05) | (4.92)* | (1.20)** | (2.35) | (1.05) | (0.24) | (0.03) | (0.13) | (0.06) |
| Anonymous | -0.74 | -0.11 | -0.13 | -0.06 | -6.90 | -2.13 | 3.65 | 1.57 | 0.29 | -0.35 | -0.20 | -0.18 |
| | (1.80) | (0.05)* | (0.18) | (0.08) | (5.84) | (1.21) | (5.58) | (1.99) | (0.10)** | (0.03)** | (0.64) | (0.45) |
| Non connected | 0.10 | 0.03 | -0.05 | -0.03 | 1.70 | 0.49 | 4.28 | 2.63 | 0.11 | 0.03 | 0.13 | 0.05 |
| | (0.09) | (0.03) | (0.06) | (0.04) | (2.07) | (0.59) | (1.46)** | (0.80)** | (0.12) | (0.03) | (0.10) | (0.04) |
| All sample | -0.13 | -0.04 | -0.06 | -0.03 | 2.87 | 0.81 | 3.65 | 2.03 | 0.13 | 0.03 | 0.01 | 0.00 |
| | (0.06)* | (0.02)* | (0.04) | (0.02) | (1.55) | (0.41)* | (0.92)** | (0.47)** | (0.11) | (0.02) | (0.05) | (0.03) |

Standard errors in parentheses

* p¡0.1, ** p¡0.05, *** p¡0.01

Sharp and Fuzzy RDD rdrobust Calonico (2014). Covariate adjusted, local polynomial regression, uniform