

Machine Politics in Chicago’s Menu Program”

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Abstract

In many urban political systems, machine politics drives policy towards loyal bases, contrasting with common theories where incumbents direct policy to win marginal voters and maximize their vote share. This paper examines the role of patronage and weak electoral competition in allocating public goods using novel data from Chicago’s menu program, where city council members distribute \$1.5M for public goods such as infrastructure maintenance and parks within their wards. By examining the 50th Ward’s menu money spending before and after his 2011 election loss, this paper confirms the long-standing rumor of Alderman Bernie Stone favoring supportive precincts through this program. Using this as a baseline, it then examines whether other aldermen allocate funds preferentially using a differences-in-differences approach after the incumbent leaves office. We focus on two groups of aldermen where the parallel trends assumption is likely to hold: those who won by a small margin and those whose indictments forced them out of office. We find no statistically significant evidence for preferential spending in the former but moderate evidence in the latter. Precincts that supported an indicted alderman saw a 1.14% decrease in spending, while those that did not saw a 2.59% increase, amounting to a total difference of \$56,000 difference each year.

Keywords: Menu Program, Aldermen, Infrastructure Maintenance, Local Politics, Spatial Distribution, Machine Politics

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1 Introduction

Do local politicians use machine style politics to drive public goods towards their supporters? Is it uniform across municipalities or does it depend on other factors, such as electoral competition? This is a hard question to answer in most contexts, as politicians rarely have unilateral control over public spending, and when they do it is often in a dictatorial or development context that does not generalize to other political systems. Thus, due to strategic voting, it is difficult to differentiate what policies politicians prefer from what they vote for. However, there is one such program that exists in the United States: Chicago’s Aldermanic Menu Program. This program gives each of Chicago’s 50 aldermen \$1.5 million each year to spend on infrastructure maintenance and public goods within their ward, which they can spend on whatever they see fit. They are given a “menu” of common expenditures, from which the program’s name is derived, but can spend freely as they wish.

The precise question this paper asks is does the menu funding towards each alderman’s supporters or detractors change after the alderman leaves office? If so, what determines the magnitude of this change? To answer this, this paper uses a differences-in-differences design to compare the time trends of each supporting or opposing precinct before and after the alderman leaves office. There are two cases where parallel trends are likely to hold: in close elections where the incumbent wins by a small margin and in cases where the incumbent is indicted and forced to leave office. In the former, both wards where the aldermen just barely won and just barely lost should have similar characteristics. Furthermore, both winning and losing aldermen in these cases should have similar expectations of winning, so they should behave similarly in the run-up to the election. In the latter, the incumbent alderman is forced to leave office unexpectedly, so there should be no anticipatory behavior, albeit constructing a control group is more difficult. The value added from this paper derives from its introduction of this unique setting to urban, spatial, and political economics literature, as well as its results which reinforces Dixit and Londregan (1996)’s theory of machine politics, the first paper to explicitly do so.

Section 2 of this paper describes the background of the program, including the program’s history, the program’s rules, and the program’s 2017 audit. Section 3 of this paper describes the public economics literature on public goods allocation and lobbying and the spatial and urban economics literature on infrastructure allocation and how this paper relates to both literatures. Section 4 of this paper describes the dataset collected for this paper. It first goes through the data collection process, then describes summary statistics of the data itself, and displays a map of total spending distribution. Section 5 presents a case study of Alderman Bernie Stone, rumored to favor supporters with menu program funds. This paper offers the first quantitative proof, showing changes in fund allocation to the lowest and highest 20% of precincts by campaign contributions before and after Stone’s 2011 defeat by Debra Silverstein. Post-defeat, the bottom 20% precincts saw a \$20,000 yearly increase in funds, while the top 20% precincts experienced a decrease in their budget share. This constitutes a difference of 1.65% of the budget, or \$21,383 per year. Section 6 explains this paper’s empirical strategy to determine if the Stone case study can be generalized to other

aldermen. Section 7 shows the results of said empirical strategy, which finds that Aldermen removed or retired due to criminal indictments, which has similar results to the Stone case study. However, this does not generalize to competitive elections. The results from the indictment-based differences-in-differences design are statistically weak and sensitive to the number of precincts included, but are economically large and significant. Section 7 concludes.

2 Background

The aldermanic menu program was initiated in 1994 and continues to this day Ferguson (2017). The program delegates approximately \$75 million every year to be split equally amongst the 50 aldermen in Chicago’s city council to be spent on projects they unilaterally select for their ward, given a “menu” of acceptable expenditures. Thus each alderman allocates approximately \$1.5 million per year to their ward. Each ward is defined to be approximately equal by population every 10 years, depending on the results of the decennial census. Precinct maps are drawn using the ward map, and precincts are defined to each contain between 500 to 800 voters Crowley (2022). Each year in the spring, the Mayor, CDOT, and OBM send letters to the aldermen explaining Menu and provides a menu of cost estimates and a list of possible projects. Before the aldermen select projects, CDOT and OBM provide a briefing packet with 311 complaint data. Finally aldermen more or less spend the money as they see fit, with the only hard restriction being that they cannot spend more than \$1.32 million on any one project. Because both this program and elections take place in the spring, new aldermen are not able to spend their entire menu funds until the following year. However, “off-menu” expenditures are also allowed, of which most “off-menu” funds go towards Parks, Chicago Public Schools, and miscellaneous beautification projects such as trees, murals, decorative garbage cans, designer bike racks, and more Ferguson (2017). While on-menu items are typically also provided by other funding sources within Chicago’s Capital Improvement Program, off-menu items such as murals and statues are usually directly credited to the Aldermen, thus giving an incentive to reward supporters’ loyalty with public goods. The program is unique insofar as it gives elected politicians a wide berth over a significant portion of the City’s infrastructure budget and allows its use for items one does not typically think of as core infrastructure. An example of a portion of a menu from 2013 is shown below in Figure 1.

Figure 1: An Example of an Aldermanic Menu from 2012/2013

DEPARTMENT/PROGRAM	2012	2013
CDOT	ESTIMATED PRICING	ESTIMATED PRICING
Residential Street Resurfacing	\$36,000 for First 5 Blocks \$58,000 for Subsequent Blocks	\$38,000 for First 5 Blocks \$66,500 for Subsequent Blocks
Residential Alley Resurfacing	\$28,000 for First Alley \$37,500 for Subsequent Alleys	\$29,500 for First Alley \$47,500 for Subsequent Alleys
Green Alley Program	\$120,000 per Block	\$150,000 per Block
Alley Speed Hump Program	\$1,400 per Block	\$1,400 per Block
Concrete Alley Aprons	\$10,000 per Location	\$10,000 per Location
Street Speed Hump Program	\$3,700 per Block	\$3,700 per Block

The Chicago Office of the Inspector General audited the program in 2017 and found that the program was rife with misallocation – since wards are defined to be approximately equal by population but not equal by area, so wards with a larger area have more infrastructure to maintain Ferguson (2017). Thus, the OIG found that the program resulted in significant funding disparities between wards relative to infrastructure needs. Secondly, the OIG audit found that from 2012 through 2015, the program permitted aldermen to use \$ 15.1 million in menu funds for projects unrelated to so-called “core” infrastructure. Finally, the OIG audit found that CDOT allowed aldermen to use \$825,292 of menu funds on projects outside of the ward they were elected to represent so that they could spend it on the wards they were running for reelection in.

3 Literature Review

Most of the literature on political allocation of public goods in political economy focuses intently on theoretical models to explain behavior but comparatively little empirical testing of that behavior. This literature on looks primarily at the political incentives to redistribute. The early literature in political economy focused on variations of targetting the median voter, the seminal paper being Downs (1957). This earlier literature was largely successful in explaining platform convergence in two-party systems. However, many political scientists and historians found this clean and economical model as only useful for explaining a small subset of political phenomena Rakove (1975) Golway (2014). The harsh examples of the New York City Tammany Hall machine and the Chicago Democratic Machine are puzzling in a downsian framework, as they were able to maintain power through tight control of patronage jobs and distributing public goods to reward supporters. The resolution to this puzzle came in Dixit and Londregan (1996), which develops a general model of politics that encompasses both the median voter and patronage models. The model they use actually matches the Chicago setting to a tee: they assume that politicians have a fixed budget to allocate to public goods, and that they can allocate it to pressure groups to maximize their vote share. In that model

they find two equilibria: one where politicians allocate to supporters and one where they allocate to marginal voters. The key difference between the two is whether or not the politician’s spending is more effective on supporters or not. If a politician has specific ties that allow it to distribute more benefits at a lower cost to supporters, then they will allocate to supporters. This key difference drives our choice of estimator, as this rules out some traditional continuous-treatment tools.

In addition, this paper is related to the lobbying literature, which studies how special interest groups influence policy. The key paper in this literature is ?, which develops a model of lobbying where firms can lobby politicians to influence policy that is determined by seats in a legislature. Their model finds that the party that is expected to win will cater more towards special interests.

There are numerous empirical papers that look at the political allocation of public goods. Then For example, Finan and Mazzocco (2021)’s study that looks at the allocation of funds from Brazil’s federal legislature, where similarly, each of the 513 legislators in Brazil receives a fixed budget of BRL\$1.5 million each year for similar public infrastructure projects. Furthermore, electoral competition in Brazil is intense: Only 75% of legislators even choose to run for reelection compared to Chicago’s city council actual reelection rate of 87%. Furthermore, incumbents can be challenged by other incumbents due to overlapping districts, whereas in Chicago, this problem only rarely happens when wards are redrawn. In this paper, Finan and Mazzocco estimate a structural model to find that 26% of public funds are distorted relative to a social planner’s allocation. After estimating their structural model, they also found that implementing an approval voting system would reduce the distortions by 7.5%. They also find that term limits may reduce distortion but increase corruption. However, this paper borrows the most from the Fowler, Garro and Spenkuch (2020) study, which uses a combination of regression discontinuity and first-differences design to study whether there is evidence of successful corporate campaign contributions influencing the stock prices of the donors. From this two-pronged approach, Fowler et al. found that there really is no impact of a preferred candidate on winning, and thus, it is hard to argue that campaign contributions are a profitable venture for companies.

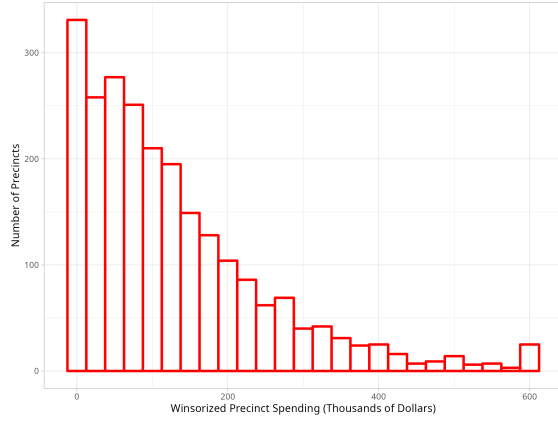
This study is different from traditional political economy studies as it focuses on a municipal environment. Thus, it is also related to the literature on municipal infrastructure provision and the new quantitative spatial economics literature. This includes Glaeser and Ponzetto (2018), Fajgelbaum et al. (2023), Allen and Arkolakis (2022), and Bordeu (2023). Glaeser’s seminal paper focuses on infrastructure’s “visible” and “invisible” effects. In particular, he finds that governments spend too much on new infrastructure projects and not enough on maintenance. Furthermore, local voters are less likely to support new projects due to noise, land use, and other externalities from new construction. Glaeser uses this framework to explain the decline of urban mega-projects. Our framework differs as we look at the allocation of relatively low-nuisance maintenance and public goods projects rather than new construction. Thus, we see the opposite problem in maintenance: electoral concerns lead to too much spending on supporters and not enough on the rest of the municipality. Fajgelbaum et al. examine how political economy influenced the planning of California’s high-speed rail (CHSR) project. They find that preferences for widespread approval

lead to the planner placing CHSR stations farther from dense metro areas than a politically blind planner. Treb and Arkolakis’ paper uses a quantitative spatial model to evaluate the impact of improving any segment of the infrastructure network on the entire network’s welfare, and finds in an empirical application that there are highly variable returns to investment across different links in the network. Finally, Bordeu looks at how infrastructure is allocated across a similarly decentralized city, Santiago, Chile, and finds that the sub-city municipalities over-invest in core areas and under-invest in areas near their boundary using a quantitative spatial model. This results in higher-cross-jurisdiction commuting costs, less concentrated employment, and a wider spatial distribution of production. She finds that infrastructure centralization would increase aggregates infrastructure investment and population and yields large welfare gains.

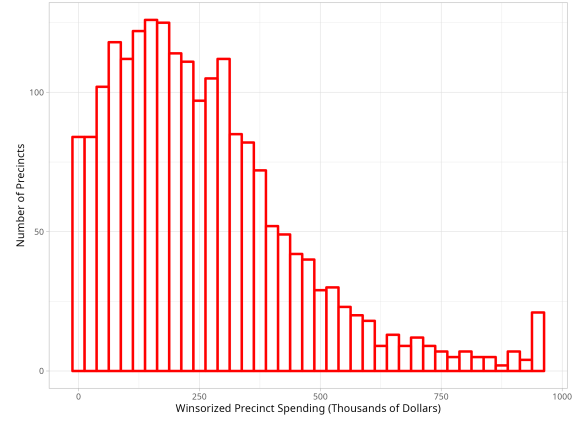
4 Data Description

The primary data employed are located menu expenditures, which contain the yearly allotted allocations from Aldermen and their respective locations from 2005 to 2022. This dataset comes from Menu spending reports that are publicly available from 2011 through 2022, and records that were not previously publicly available that were obtained through a FOIA request to Chicago’s office of budget and management of Budget and Management (2022). I then scraped these PDFs and used the resulting cost total, ward, and location description data to create map of shapes of the locations of the expenditures. I then used the location description text to locate the described vertices of each project using the Census’ geocoding API. If the census’s API failed, google maps’ API would be used instead. In total, there were 43,596 projects that needed to be located, and 83% of them were successfully located using one of the two above methods. For example, spending on playground equipment would be a singular point, while spending on a street would be a line, and spending of all alleys within a given block would be a polygon. This dataset contain 41,381 precinct-year observations which record the total amount of spending in a given voting precinct in a given year.

Below in Figure 2 are two side-by-side histograms of the distribution of spending per precinct aggregated across the 2005-2011 period which used the 2003-2011 ward boundaries, and the 2012-2022 period with the 2012-2022 ward boundaries. We generally see that the decentralized nature of the menu program leads to a large variation in spending per precinct, but the distribution has a long right tail. Both figures are winsorized at the 99th percentile to remove outliers.



(a) Distribution of Spending per Precinct, 2005-2011



(b) Distribution of Spending per Precinct, 2012-2022

Figure 2: Distribution of Spending per Precinct for both ward maps in the dataset

Next we can visualize how the decentralized nature of the menu program leads to large within-precinct spending variation through a map of the 2012-2022 spending per precinct in Figure 3. This figure shows how the program's decentralization leads to numerous precincts with large concentrations of spending. Furthermore, the figure shows that in some wards, spending is heavily concentrated in a few precincts, while in others, spending is more evenly distributed.

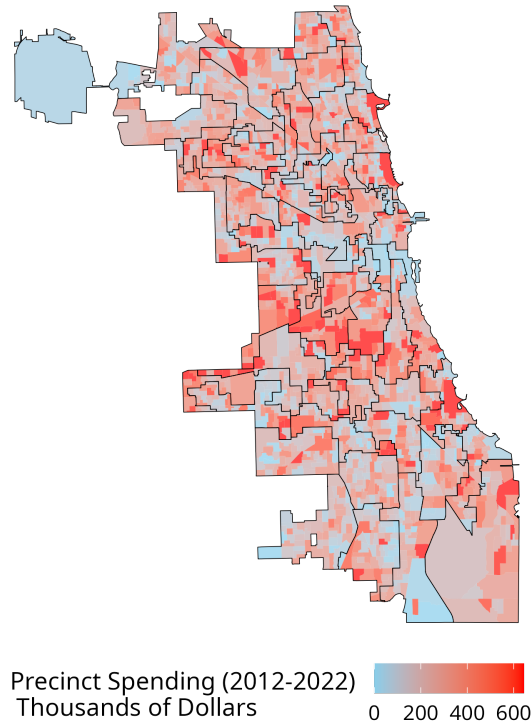


Figure 3: Map of Spending per Precinct, 2012-2022

Question for Readers What else should I include here?

5 Bernie Stone Case Study

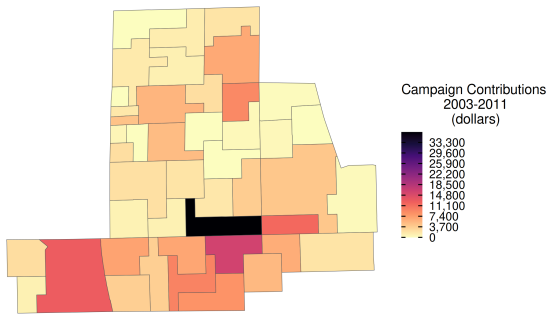
This section discusses the Bernie Stone case study, which is the primary motivation for this paper. Bernie Stone was an alderman in Chicago's 50th ward from 1973 to 2011. He was well known for his, "political philosophy."

"You take care of the people who take care of you — you know, the people who voted for you, That's not Chicago politics, that's Politics 101." - Alderman Bernie Stone (50th ward), Quoted from Zekman (2009)

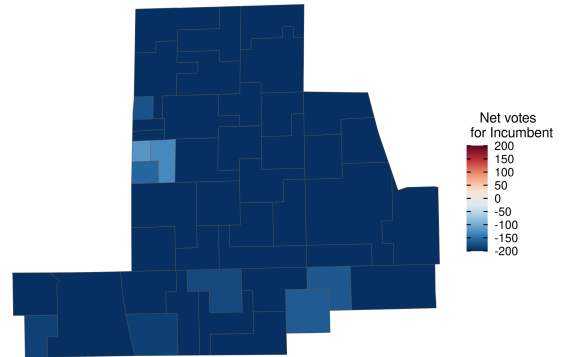
In fact an alderman who grew up in the 50th ward once remarked that,

"Well, I grew up in the 50th Ward and you know, God bless [the late former Ald.] Bernie Stone, may he rest in peace, but I remember crossing California going west, every street was resurfaced almost every year. They always had brand new lighting and then east of California, where he would lose the precincts consistently, I mean the streets were in shambles. Many people felt he was spending the bulk of the menu money west of California, where he was getting the bulk of the vote." - Alderman Carlos Ramirez-Rosa (35th Ward), Quoted from Vevea (2017)

This quote is a clear example of the type of behavior that this paper seeks to investigate. This phenomena could not be verified previously because the data was not made publicly available. Furthermore, the data that did exist, was in the form of PDFs, which are not easily machine readable. Thus this paper is the first to put numbers to this anecdotal evidence. First we can look at a map of the precincts that supported Stone financially and electorally. Below in Figure 6 we can see the precincts that supported Stone in the 2007 runoff election and the precincts that gave Stone the most individual contributions. In both maps we can clearly see that the south western portion of the ward is the most supportive of Stone, on average.



Source: Illinois State Board of Elections Website



Source: Chicago Board of Elections

(a) Campaign contributions to Alderman Stone, 2003-2011

(b) Net votes for Alderman Stone, 2007

Figure 4: Distribution of Spending per Precinct for both ward maps in the dataset

Next, we can look at a time series of the spending per precinct for the 50th ward. There are approximately 44 precincts in the 50th ward, so Figure 5 gathers the top and bottom quintile of precincts by contributions to Stone and shows average fraction of the total located budget spent in each quintile. “other” refers to all the precincts that are not in the top or bottom quintile.

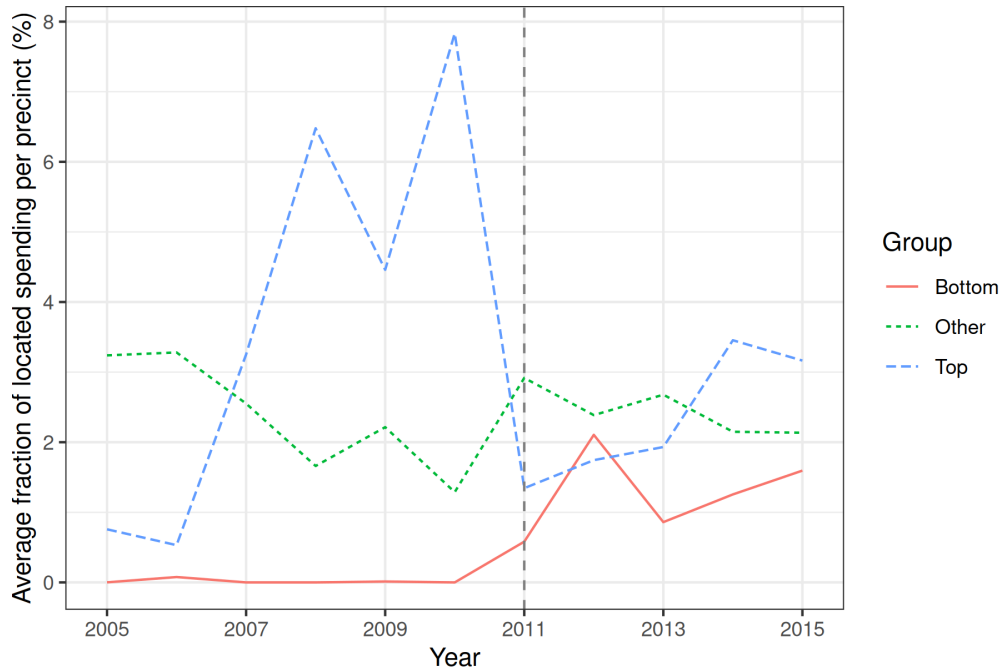
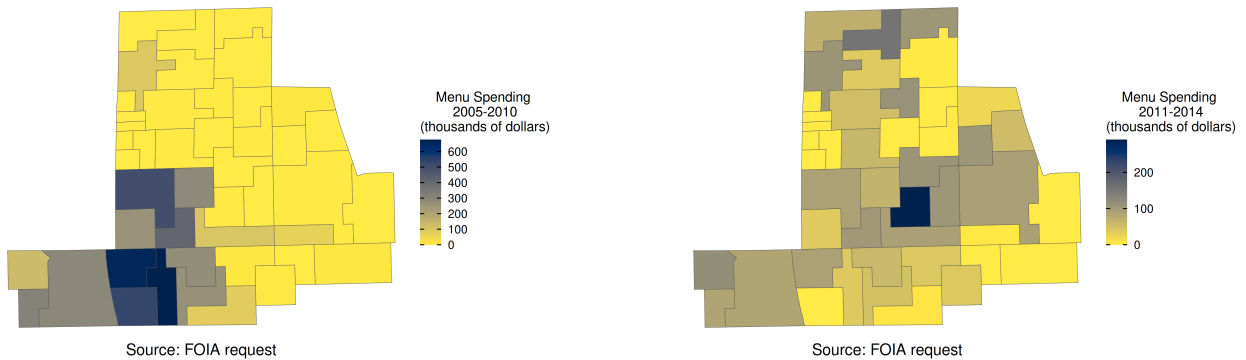


Figure 5: Average Spending per Precinct in the 50th Ward, 2005-2016

Finally, we can look at the 50th ward’s spending per precinct in the years leading up to and following Stone’s defeat in 2011. This shows a clear shift in spending from the south-western portion of the ward, to a roughly even distribution across the ward.



(a) 50th Ward Menu Allocation, 2005-2010

(b) 50th Ward Menu Allocation, 2011-2015

Figure 6: 50th Ward Menu Allocation, 2011-2016

Question for Readers Is there anything else you’re curious about with this case study?

6 Empirical Framework

This section discusses the empirical framework used to analyze the data. To determine whether aldermen are allocating spending to precincts that support them, I use a differences-in-differences approach. However, I focus on a heterogeneous-treatment effect robust estimator. The most standard specification is given as follows:

$$Y_{pt} = \alpha_p + \gamma_t + \beta T_{pt} + \epsilon_{pt} \quad (1)$$

Where Y_{pt} is the fraction of observed spending in precinct p in year t . T_{pt} is a dummy variable that is equal to 1 if the incumbent alderman was removed by office in year t . α_p and γ_t are precinct and year fixed effects respectively. ϵ_{pt} is the error term. β represents how much spending on an average precinct in the sample changes after an alderman is removed from office. Under parallel trends, this represents the causal impact of removing an alderman from office on spending in the precincts contained in the sample. Thus, if we focus on primarily supporting precincts, then a negative β would indicate that the incumbent alderman was allocating more spending to the precincts that supported them than the following alderman would have chosen. Yet, this model should not be naively applied due to the recent literature on heterogeneous treatment effects in

differences-in-differences designs. The growing literature shows that the standard two-way fixed effects estimator biases the coefficient β , is a weighted average of several differences-in-differences that compare how Y_{pt} progress across pairs of groups, of which some of them can be treated in both periods de Chaisemartin and D’Haultfœuille (2020) Callaway and Sant’Anna (2021). To address this issue, I use the heterogeneous-treatment effect robust estimator proposed by Callaway and Sant’Anna (2021).

This paper estimates four variations of Equation 1. The first two rely on a close-election assumption to justify the parallel trends assumption. By focusing only on wards where the incumbent alderman won by a small margin, we can assume that incumbent aldermen who win by a small margin have similar characteristics to those who lose by a small margin. For this study, we use a margin of victory of 10% or less to define a close election, this corresponds to approximately 300 votes in either election. Therefore, they should behave similarly in the run-up to the election as they have similar expectations of winning. We then examine two sets of precincts. The first set of precincts is the top quintile (8) precincts by vote margin in the 2015 or 2019 election for each ward whichever is appropriate to the treatment group. The second set of precincts is the bottom quintile precincts by vote margin in the 2015 or 2019 election for each ward, whichever is appropriate to the treatment group. We use the 2012 through 2022 years to estimate this model, due to the 2011 redistricting complicating the use of 2005-2011 data.

The second two variations rely on a simultaneous set of indictments of aldermen in 2019, causing three aldermen to either be ineligible for reelection, or to retire. We compare this group to a set of 10 control aldermen who were not indicted, have been in office for at least 10 years, and won reelection in 2019 in the general election, indicating that they were not in a competitive election. To measure whether or not a precinct supported an alderman, we use the total number of campaign contributions donated to the aldermen in the 2015 and 2019 elections from the precinct. We do this because many of the “entrenched” aldermen have not faced a competitive election in decades, so we cannot use the vote margin to determine whether or not a precinct supported an alderman. Despite this, all aldermen still accept campaign contributions even when there is no challenger, so we can use this as a proxy for support. In this case, we expect that the trends for the indicted and control aldermen will be the same, as they are all not in competitive elections and thus their spending preferences should both be stable over time. Furthermore, the unexpected nature of indictments should preclude any anticipatory behavior. In both cases I cluster standard errors at the ward level, as that is the level at which the treatment is assigned.

Question for Readers Do you have any other ideas for related questions I can explore with this data? Is there anything I’m obviously doing wrong here?

7 Results

First we can look at the result of the competitive elections design. We compute the dynamic aggregation of the average treatment effect on the treated group for the least and most supporting

precincts and display the results in Table 1. Also shown are the estimate’s standard errors, confidence intervals, and wald-test p-values for the pre-test of the parallel trends assumption. For the close election design we see that both estimated ATTs are not statistically significant. Furthermore, we see that the least supporting precinct’s ATT is not particularly economically significant either. Half a percent of the menu program’s budget is roughly \$7,500. That is not even enough to afford two street-wide speed bumps. Additionally concerning are the extremely low p-values for the pre-trends test. This indicates that the close election design likely does not guarantee that parallel trends hold. This is may be because factors that influence infrastructure spending and needs are correlated with the the election outcome. Alternatively, it could be because the margin chosen is too large to ensure that the two groups are similar. The results of the competitive elections design is very sensitive to the number of precincts included, often changing the sign of both estimated ATTs.

Table 1: Comparison of Average Treatment Effects: Competitive Election Designs

	Least Supporting Precincts ATT	Most Supporting Precincts ATT
ATT	0.5003	-1.5105
Std. Error	0.4512	1.120
95% Conf. Int.	(-0.384, 1.385)	(-3.705, 0.684)
Pre-Trends P-value	0.005	0.0755
Obs	1680	1680

We can look at how the average treatment effect changes over time in Figure 7 which depicts how the least supporting precincts estimated treatment varies over time. As can be inferred from the standard errors in Table 1, the estimated effect over time is incredibly noisy and unreliable. This is likely because if you think about an optimal social planner, they would not allocate spending using a highly auto-correlated spending rule. More likely, they would allocate spending based on the state of decay of the infrastructure stock of the precincts. If you imagine that close elections push aldermen closer to a hypothetical social planner, then you would expect lots of noise in the estimated effect. This noise is also present when we look the top supporting precincts.

Next we can look at the results of the indictment design in Table 2. We note that the treatment effect for the least supporting precincts is over five time larger than the treatment effect estimated in the competitive election design. We also see a much larger wald-test p-value for the pre-trends test. This indicates that perhaps the indictment design’s assumption is more believable than the close election design’s assumption. However, we also see that the most supporting precinct’s treatment effect, while statistically significant is similar in magnitude to the competitive election design’s treatment effect. The results shown Table 2 are only sensitive to increasing the number of precincts, not decreasing it.

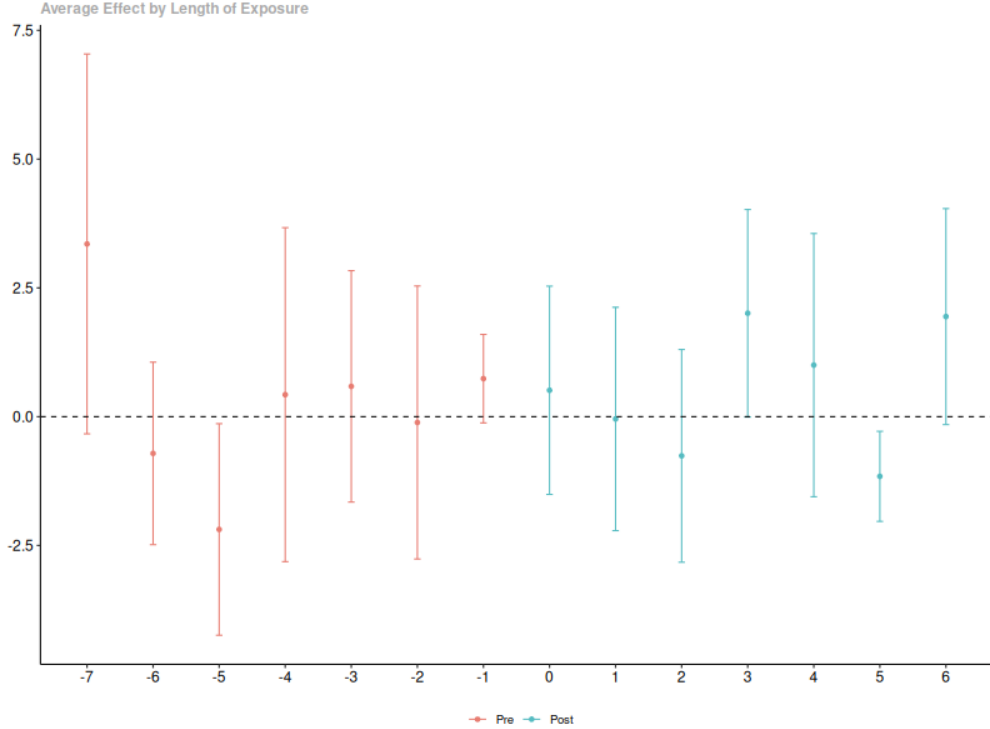


Figure 7: Average treatment effect over time for least supporting precincts: competitive election design

Table 2: Comparison of Average Treatment Effects: Indictment Designs

	Least Supporting Precincts ATT	Most Supporting Precincts ATT
ATT	2.5881	-1.1467
Std. Error	0.7776	0.3191
95% Conf. Int.	(1.064, 4.1121)	(-1.7721, -0.5214)
Pre-Trends P-value	0.1989	0.17374
Obs	1144	1144

Finally we can look at how the average treatment effect changes over time in Figure8 which depicts how the least supporting precincts estimated treatment varies over time. We see that the standard errors, while large, are much smaller and the mean estimate is much more stable. However, we see some evidence of a pre-trends violation in the year before the first treatment, as the 2019 estimate is significantly smaller than the other estimates. This holds for the most supporting precincts as well, albeit in reverse. Thus it seems that as the incumbent alderman is leaving office, they are allocating more spending to their most supporting precincts from their least supporting precincts. Overall, these results must be taken with a grain of salt, due to the high standard errors the likely pre-trends violation.

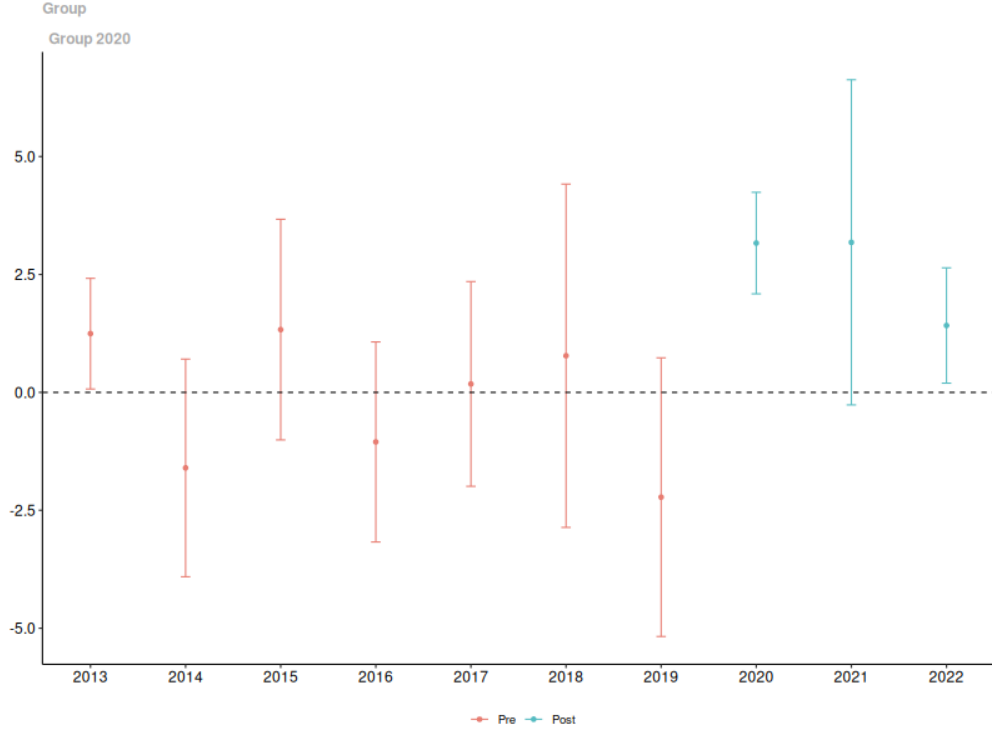


Figure 8: Average Treatment Effect over Time: Indictment Designs

Conclusions

Overall we find some evidence that aldermen may sometimes disproportionately allocate spending to their most supporting precincts, particularly when they are long-entrenched and not facing a competitive election. The paper starts by verifying a rumor that a particular alderman disproportionately allocated spending to his most supporting precincts. Then it uses two applications of a differences-in-differences research design to arrive at this fact. The first application focuses on aldermen who lost by a small margin, and finds that the evidence for disproportionate spending is very weak. While the magnitude of the estimated effect on the top precincts in the close election design is large, it is not even close to statistically significant, and even the sign of the effect is not robust to changes in the number of supporting/opposing precincts included in the sample. We find that the effect is economically large and statistically significant when we use the indictment design. The statistical significance is sensitive to parameters such as the number of supporting or opposing precincts included per ward, but the economic significance is not and stays largely the same for this design so long as you decrease the number of precincts. This is likely due to the fact that increasing the number of precincts dilutes the average treatment effect, so it decreases the aggregated treatment effect.

The results help build on the burgeoning urban economics of infrastructure literature by showing that political incentives can distort the allocation of infrastructure spending. Secondly, the

differences between the competitive election and indictment designs show that the electoral competition can be a powerful force in constraining the clientelistic tendencies of politicians. There is also a lesson in urban planners that while discretion can be useful, it can also be abused and lead to unintended consequences. Therefore, the capacity for discretion should be carefully considered when designing a program.

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