Machine Politics in Chicago's Menu Program*

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Abstract

In many urban political systems, machine politics drives policy towards a loyal base, contrasting with common theories where incumbents direct policy to win marginal voters. 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 their budget fraction decrease by 1.14pp, while those that did not saw a 2.59pp increase, amounting to a total difference of $56,000 difference each year.

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

JEL codes: H41 H72 L98

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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? In most contexts, these are tricky questions to answer, as politicians rarely have unilateral control over public spending. When they do, it is often in a dictatorial or development context that does not generalize to other contexts. In first-world contexts, such as voting on city councils, strategic voting makes it difficult to differentiate what policies politicians prefer from what they vote for. However, one such program 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. Chicago Department of Transportation (CDOT) delivers to each alderman a "menu" of common expenditures, from which the program's name is derived, that each alderman can choose from. However, aldermen are not limited to these options, and can spend the money on other projects as well.

This paper asks whether the menu funding towards each alderman's supporters or detractors changes 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 complicated. 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 reinforce Dixit and Londregan (1996)'s theory of machine politics.

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 8 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. 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 decennial census results, but the overall map is subject to a city council vote for approval. The Chicago Board of Elections draws the precinct map using the ward map, according to the available number of polling places, and 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 the program and providing 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 this program and elections occur in the spring, new aldermen can only spend their entire menu funds the following year and often rely on the previous Alderman's programmed budget the year they are elected.

"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 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 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 model wanting in addressing obvious cases of machine politics 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 maintained 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 matches the Chicago setting to a tee: they assume that politicians have a fixed budget to allocate to public goods and can distribute it to pressure groups to maximize their vote share. In that model they find two equilibria: one where

politicians allocate to supporters and one to marginal voters. The critical difference between the two is whether or not the politician's spending is more effective on supporters. If a politician has specific ties that allow them to distribute more benefits at a lower cost to supporters, they will allocate to supporters. This 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 expected to win will cater more towards special interests.

Numerous empirical papers look at the political allocation of public goods. For example, Finan and Mazzocco (2021)'s study 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's 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. In addition, there is Margaret Frank, Hoopes and Lester (2022) find that governors in the US select place-based tax incentive locations more often when the tract's state representative is a member of the governor's party and is greatest with Republican governors. 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.

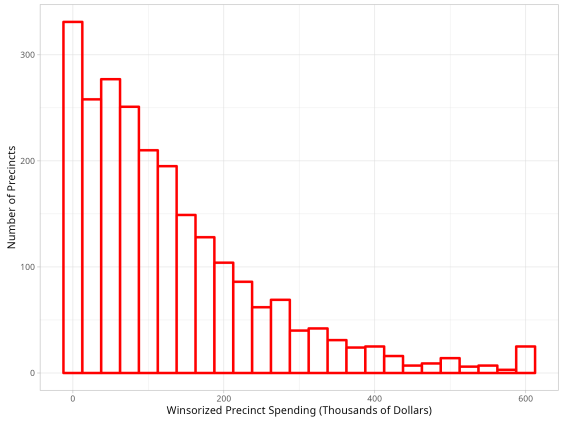
This study is different from traditional political economy studies as it focuses on a municipal environment where the public good at play is primarily infrastructure. Thus, it is also related to the literature on municipal infrastructure provision and the new quantitative spatial economics literature. 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 misallocation results in higher-cross-jurisdiction commuting costs, less concentrated employment, and a more comprehensive spatial distribution of production. She finds that infrastructure centralization would increase aggregate infrastructure investment and population and yield large welfare gains.

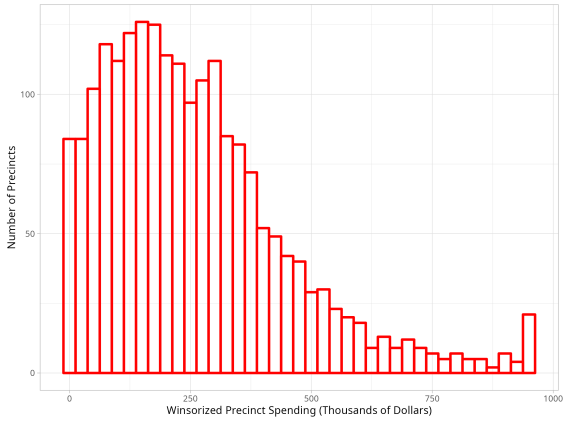
4 Data Description

The primary data this paper employs 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 the OBM OBM (2022). I then scraped these PDFs and used the resulting cost total, ward, and location description data to create a map of shapes of the locations of the expenditures. I then used the location description text to locate each project's described vertices using the Census geocoding API. If the Census's API failed, Google Maps' API was used instead. In total, 43,596 projects needed to be located, and 83% For example, spending on playground equipment would be a singular point, while spending on a street would be a line, and spending on all alleys within a given block would be a polygon. This dataset contains 41,381 precinct-year observations, which record the total spending in a given voting precinct in a given year.

Below is Figure 2, which depicts 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. The decentralized nature of the menu program leads to a considerable 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 significant within-ward 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 spending is more evenly distributed in others.

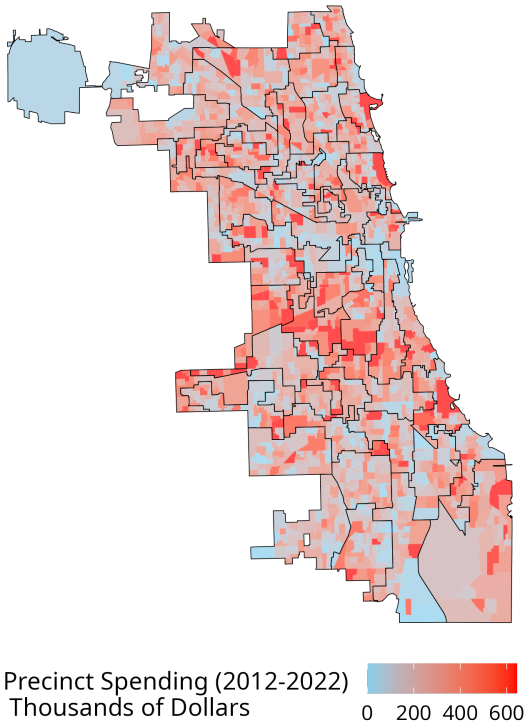


Figure 3: Map of Spending per Precinct, 2012-2022

However, we focus instead on the fraction of observed spending per precinct to account for

Table 1: Summary statistics of fraction of total spending by precinct from 2012 to 2022

mean	median	sd	upper quartile	lower quartile
2.42	0.23	4.48	3.35	0

shifts in the fraction of "observable" spending. "Observed" means one of the two methods above successfully located it to a location in Chicago. Thus, if Y_{py} is the fraction of spending located in precinct p in year y, then $Y_{py} = \frac{S_{py}}{S_{wy}}$, where S_{py} is the spending in precinct p in year y, and S_{wy} is the total amount of ward w's successfully located spending in year y.

Below in table 1 we see summary statistics for this variable. Due to the long right tail of the distribution, the mean is much larger than the median. Half of precincts get almost no spending.

TODO: Add a scatterplot of spending fraction per precinct vs. net votes for the incumbent alderman

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."

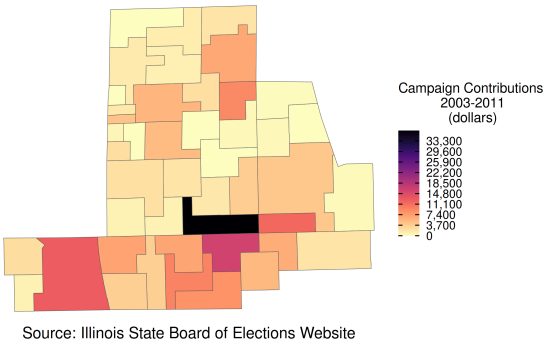
> "You take care of the people who take care of you — you know, the people who voted for you, That's not Chicago politics, that's Politics 101." - Alderman Bernie Stone (50th ward), Quoted from Zekman (2009)

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

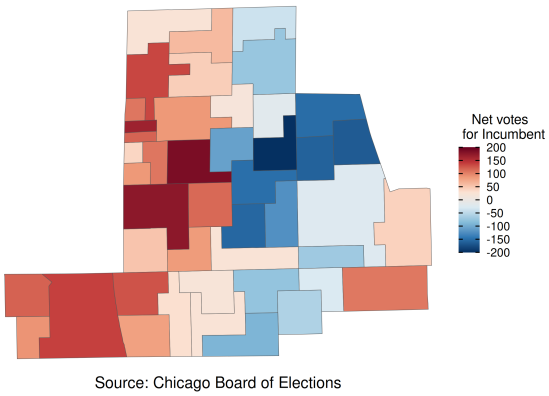
> "Well, I grew up in the 50th Ward and you know, God bless [the late former Ald.] Bernie Stone, may he rest in peace, but I remember crossing California going west, every street was resurfaced almost every year. They always had brand new lighting and then east of California, where he would lose the 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 phenomenon could not be verified previously because the CDOT did not make the 2005-2011 documents publicly available. Furthermore, the 2011-2022 data was in PDF form, making locating the spending tedious and difficult. 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 4, 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 see that the southwestern portion of the ward is the most supportive of Stone, on average.



(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 the average fraction of the total located budget spent in each quintile. "other" refers to all other precincts. Note that the precincts that contributed the most to Stone's campaign are the same precincts that contributed the most net votes to Stone in the 2007 runoff election. We see that after his reelection in 2007, Stone's spending per precinct was heavily concentrated in the precincts that supported him. After his defeat, spending per precinct is much more evenly distributed across the ward.

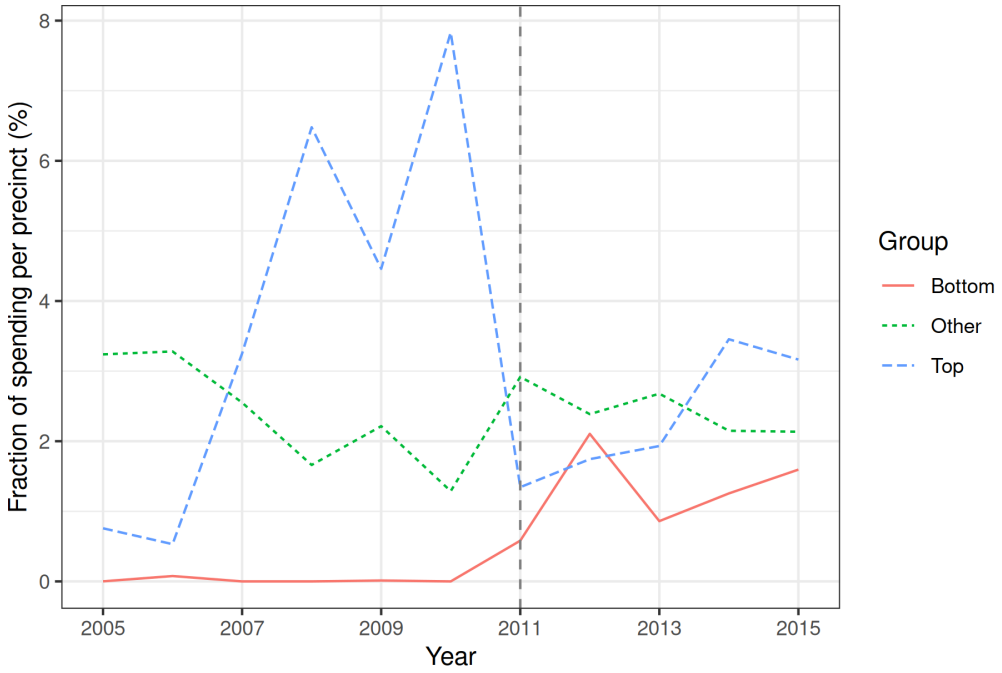
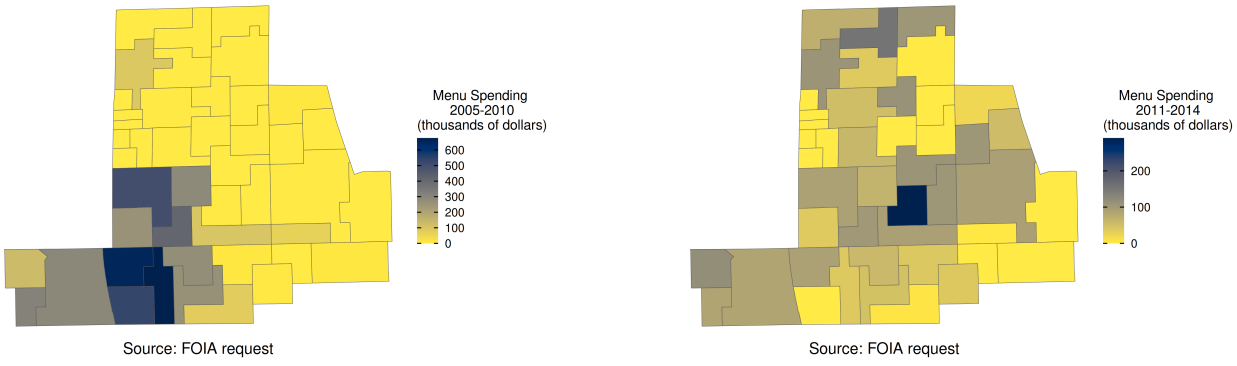


Figure 5: Average Spending per Precinct in the 50th Ward, 2005-2016

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 via a map in Figure 6. This figure shows a clear shift in spending from the south-western portion of the ward to a roughly even distribution.



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

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

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

6 Empirical Framework

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

$$Y_{pt} = \alpha_p + \gamma_t + \beta T_{pt} + \epsilon pt \tag{1}$$

Y_{pt} is the fraction of observed spending in precinct p in year t. T_{pt} is a dummy variable equal to 1 if the incumbent alderman was removed from 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, a negative β would indicate that the incumbent alderman was allocating more spending to those that supported them than the following alderman would have chosen. Yet, this model should not be naively applied with two-way fixed effects 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). I use the heterogeneous-treatment effect robust estimator proposed by Callaway and Sant'Anna (2021) to address this issue.

Why not use a continuous treatment design, with an indicator of support as a marker of treatment strength? The reason for this comes from **?**. A much stronger form of parallel trends must be satisfied for a continuous treatment design to be valid. **?** describe a set of assumptions that allow the identification of the "average causal response of treatment (ACRT) function" that is a weighted average of causal responses to a unit change in treatment intensity. They find that identifying an ACRT function requires not only the traditional, support, common trends, and no anticipation assumptions, but also a "homogenous ATT" assumption. This assumption means politicians only allocate spending based on support, regardless of precinct characteristics. That is, no precincts are more efficient at giving support than others. However, this assumption is directly at odds with the Dixit and Londregan model, which shows that for machine politics to exist, the politician must be able to distribute goods more efficiently to supporters than non-supporters. This assumption is just the converse of precincts being more efficient at giving support than others. Thus, using a continuous treatment design would be equivalent to assuming that machine politics does not exist in this context.

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 for each ward in the 2015 or 2019 election, whichever is appropriate to the treatment group. The second set of precincts is the bottom quintile precincts by vote margin for each ward in the 2015 or 2019 election, 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. These aldermen were Daniel Solis, Ricardo Munoz, and Willie Cochran. Daniel Solis left office after being caught by the FBI and wearing a wire to record Alderman Ed Burke, who was indicted in 2019 but not removed from office until 2023. Ricardo Munoz retired shortly after reporters discovered that he had spent PAC money on personal expenses. Willie Cochran retired after pleading guilty to wire fraud and misusing campaign funds for gambling and personal expenses. 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 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 from the precinct in the 2015 and 2019 elections. 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 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 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.

7 Results

First, we can look at the result of the competitive election 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 2. Also shown are the estimate's standard errors, confidence intervals, and Wald-test p-values for the pre-test of the parallel trends assumption. We see that both estimated ATTs are not statistically significant for the close election design. Furthermore, the least supporting precinct's ATT is not economically significant. 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 test

indicates that the close election design likely does not guarantee that parallel trends hold. This failure may be because factors influencing the trend of infrastructure spending and needs correlate with 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 susceptible to the number of precincts included, often changing the sign of both estimated ATTs. Next, we can look at the results of the indictment design in. We note that the treatment effect for the least supporting precincts is over five times 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. These values indicate 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 treatment effect of the competitive election design. The results shown Table 2 are only sensitive to increasing the number of precincts, not decreasing it.

Table 2: Comparison of Average Treatment Effects: Combined Designs

	Competitive Election		Indictment	
	Opposing ATT	Supporting ATT	Opposing ATT	Supporting ATT
ATT	0.50	-1.51	2.59	-1.15
Std. Error	0.45	1.12	0.78	0.32
95% Conf. Int.	(-0.38, 1.39)	(-3.71, 0.68)	(1.06, 4.11)	(-1.77, -0.52)
Pre-Trends P-value	0.005	0.076	0.199	0.174
Obs	1680	1680	1144	1144

TODO: Add a figure that shows how the ATT of each changes for each design as the number of precincts included changes from 5 to 12.

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 in the close election context. As inferred from the standard errors in Table 2, the estimated effect over time is noisy. This is likely because if you think about an optimal social planner, they will 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, you would expect lots of noise in the estimated effect. This noise is also present when we look at the top supporting precincts.

Finally, we can look at how the average treatment effect changes over time in Figure 8, which depicts how the least supporting precincts estimated treatment varies over time in the indictment design. 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, as the incumbent alderman leaves office, they allocate more spending to their most supporting precincts than their least keeping precincts. These results must be taken with a grain of salt due to the high standard errors and the

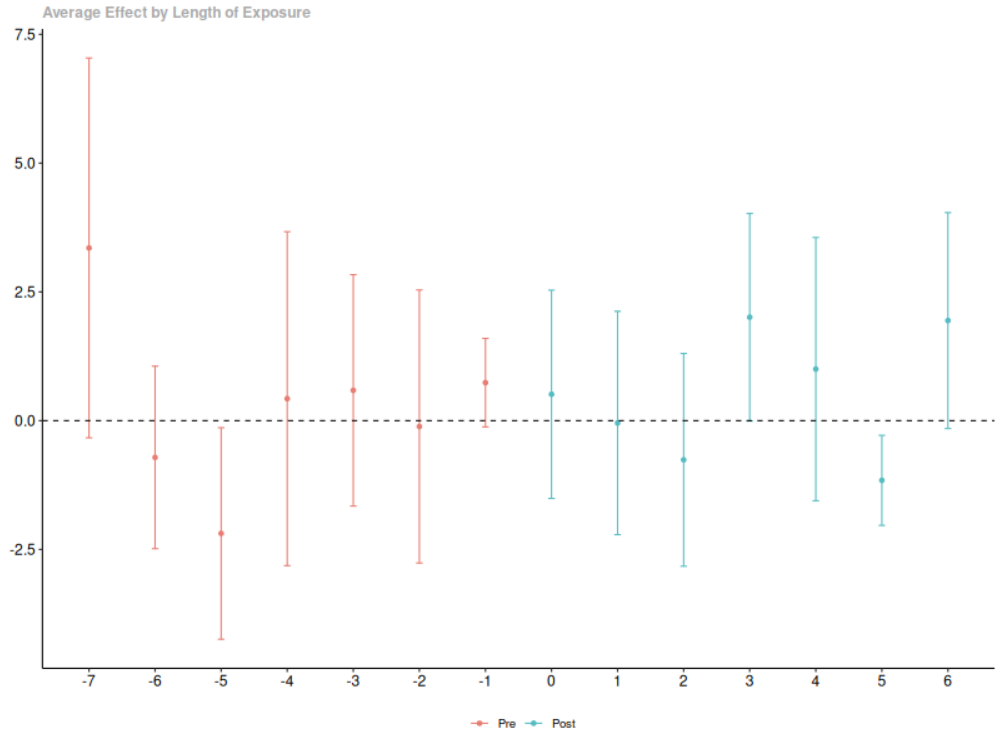


Figure 7: Average treatment effect over time for least supporting precincts: competitive election design

likely pre-trends violation.

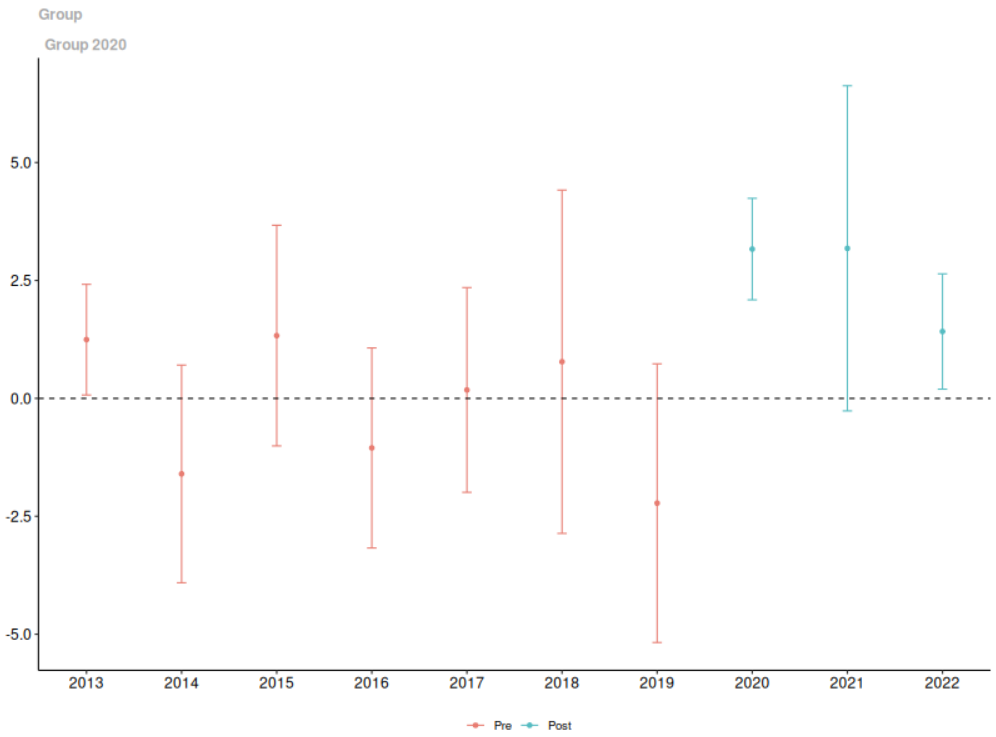


Figure 8: Average Treatment Effect over Time: Indictment Designs

TODO: Create custom figures because the did's package figures are ugly.

8 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 show-

ing 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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