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Visual Campaign Strategies under Electoral Reform:

Evidence from Official Election Bulletins in Japan

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Visual Campaign Strategies under Electoral Reform: Evidence from Official Election Bulletins in Japan^{*}

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Abstract

This paper examines how institutional incentives reshape micro-level strategic promotion and visual resource allocation under cognitive and physical constraints. We conceptualize a candidate's campaign space within official election bulletins as a "bounded visual budget," introducing a trade-off between superficial salience and substantive policy transmission. Exploiting Japan's 1994 electoral reform as an exogenous institutional shock, we employ a Difference-in-Differences design—utilizing Upper House candidates as a counterfactual control group—to isolate the causal impact of the reform from long-term typographic and technological trends. Counter to conventional expectations of a shift toward party-centered campaigns, we find that candidates systematically prioritized personal salience, significantly expanding individual name sizes post-reform. These findings suggest that heightened competitive intensity can distort informational environments, crowding out substantive policy communication essential for democratic welfare.

Key Words: Electoral reform; Candidate self-promotion; Personal vote; SNTV-MMD; and SMD

JEL codes: D72, P16

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1.Introduction

1. Research question

To win an election, candidates must achieve high name recognition among voters. However, campaign activities are heavily constrained by time, attention, and resources. For example, within the confines of official election bulletins, candidates face a bounded visual budget where they must distribute space among their own names, party affiliations, and substantive policy messages. This presents a classic constrained resource allocation problem: expanding the visual prominence of one element mechanically reduces the attention paid to others. Under these cognitive and physical constraints, candidates rationally choose the most effective promotion strategy to maximize their political survival. Crucially, a candidate's optimal strategy depends heavily on the institutional incentives embedded in the electoral system. Since institutional rules changes the competitive environment, candidates' behavior will change. Consequently, institutional reforms alter their "survival environment" drastically. This paper examines how politicians dynamically adjust their strategic behavior and visual resource allocation in response to such exogenous environmental shifts.

We focus on Japan's 1994 electoral reform for the House of Representatives (Lower House) to examine how this systemic shift affected candidates' micro-level promotion strategies. Specifically, we estimate the causal impact of the reform on the visual salience of candidate names within the advertising space of official election bulletins. Figure 1 illustrates the manifestos of four candidates published in the bulletin, where the red rectangles indicate the largest display of each candidate's name. The size of these name displays varies significantly across candidates, reflecting distinct campaign strategies. For instance, the name of the candidate at the bottom accounts for 22.4% of the total area,

representing a highly aggressive strategy focused on immediate visual salience.

[Figure 1 about here]

This strategic choice introduces a critical behavioral trade-off: when candidate names are enlarged to capture voter attention, the space available for substantive information regarding campaign pledges and policies is inherently crowded out. Is this outcome desirable from a welfare or democratic perspective? Previous literature confirms that increasing name recognition increases vote shares, even if the marginal effect is bounded (Ho and Imai 2008; Kam and Zechmeister 2013; Green et al. 2016; Fukumoto and Miwa 2018). Increasing visual size is thus a rational optimization strategy for candidates from the perspective of political survival, but may not be optimal. If certain electoral designs incentivize candidates to prioritize visual salience over policy substance, they may inadvertently hinder the transmission of vital political information to the electorate. By quantifying the physical allocation of visual space, this study evaluates how institutional designs shape the trade-off between superficial salience and policy-oriented communication. We can gain some insight into what kind of electoral system encourages voters to consider policies deeply.

Before the reform, Japan's Lower House employed the SNTV-MMD system (Single Non-Transferable Vote in Multi-Member Districts). Following the reform, a mixed electoral system was introduced, combining single-member districts (SMD) with proportional representation (PR). Under the pre-reform SNTV-MMD system, political parties nominated multiple candidates in a single district to secure a legislative majority.

This institutional design triggered intense intra-party competition.¹ In this setting, relying solely on shared party platforms made it impossible for candidates to differentiate themselves from co-partisans. Consequently, incentives for "personal vote-seeking" were high, leading candidates to invest heavily in their individual brands rather than collective party policies: Candidates seek to prominently emphasize their names despite the limited space.

In contrast, under the post-reform SMD system, only one candidate from each party runs per district, which theoretically fosters inter-party competition centered on collective party performance. Therefore, the transition from the SNTV-MMD system to the mixed system was conventionally expected to shift candidates' strategic focus from a candidate-centered to a more party-centered orientation.

Indeed, qualitative literature suggests that the 1994 reform would (be expected to) discourage personal vote-seeking behaviors (Ramseyer and Rosenbluth 1993; McCubbins and Rosenbluth 1995; Reed and Thies 2001; Catalinac 2016). Existing literature in electoral systems often suggests that shifting from an SNTV-MMD system to SMD or PR leads to a transition from candidate-centered to party-centered elections, diminishing personal voting behavior (e.g., Carey and Shugart (1995), Zittel and Gschwend (2008), André, Depauw, and Martin (2015), Selb and Lutz (2015), Zittel and Nyhuis (2021), and Liao and Tang (2026)). However, rigorous quantitative identification

¹ Consider the following example: three candidates—A1, A2, and B—contest two seats in an MMD. Candidates A1 and A2 belong to Party A, while candidate B represents Party B. Under the SNTV system, if A1, A2, and B receive 50%, 20%, and 30% of the total votes, respectively, A1 and B win the seats, leaving A2 defeated. In this scenario, although Party A's total vote share is 70%, A2 loses because the SNTV system does not allow for the transfer of 'surplus' votes from A1 to A2. If such a transfer were possible, A2 would have secured the seat. Consequently, candidate A2 must compete not only against candidate B but also against their own co-partisan, A1.

remains limited. This paper documents the opposite behavioral response: candidates systematically prioritized personal salience over policy space. Contrary to expectations, the transition from SNTV-MMD to the mixed system in Japan led candidates to display their names even more prominently, leaving limited room for conveying critical messages regarding policies and pledges.

2. Method and Results

This institutional transition not only altered the district magnitude but also fundamentally reshaped the micro-level competitive intensity. To capture this shift, we define the Effective Competition Rate (ECR) using the Effective Number of Candidates (ENC).² Following Laakso and Taagepera (1979), ENC is calculated as $ENC \equiv 1 / \sum_i v_i^2$, where v_i represents the vote share of candidate i in the district. We then define ECR as the ENC divided by the number of available seats (N) in that district: $ECR \equiv ENC / N$. A higher ECR indicates a more congested and intense competitive environment. Figure 2 illustrates the average ECR in both Lower and Upper House districts in Tokyo. In the Lower House, the transition from the SNTV-MMD system to the SMD system nearly doubled the ECR. This sharp increase stands in stark contrast to the House of Councillors (Upper House), where the institutional structure and ECR remained stable.³

² Although several measures of the intensity of district-level competition have been proposed, such as by Crisp, Jensen, and Shomer (2007) and Grofman and Selb (2009), this paper employs a highly simple and intuitive method.

³ According to Duverger's Law, the number of effective candidates in a district with N seats tends to converge to $N+1$. If this law holds, an MMD with four seats would yield five effective candidates, resulting in an ECR of 1.25 ($=5/4$)—assuming all candidates receive an equal share of votes. In contrast, an SMD would yield two candidates, resulting in an ECR of 2 ($=2/1$). As illustrated in Figure 2, it is therefore expected that the ECR would increase following the introduction of the SMD system. Reed (1990, 2007) notes

[Figure 2 about here]

The resulting surge in required vote shares under a higher ECR presents candidates with opposing strategic incentives. On one hand, the heightened difficulty of securing victory may compel candidates to amplify their visual self-promotion to capture scarce voter attention. On the other hand, if the institutional shift elevates the salience of party platforms, candidates might instead economize on personal promotion and lean more heavily on party labels. The net effect of this institutional shock on micro-level strategic behavior is therefore an empirical question.

Our empirical analysis focuses on Tokyo's electoral districts for both the Lower and Upper Houses from 1983 to 2005. As Tokyo is the Japan's metropolitan hub with a high concentration of unaligned swing voters, candidates in Tokyo face particularly strong incentives to optimize visual signaling to capture voter attention.

[Figure 3 about here]

In both chambers, the average space allocated to candidates' names has increased over time (Figure 3). This secular trend reflects both shifting competitive environments and exogenous technological shocks, such as advancements in computer-based typesetting and broader typographic trends toward larger font sizes for readability. Notably, font sizes

that the number of effective candidates in Japan's Lower House elections, under both SNTV-MMD and SMD, converges toward the Duvergerian prediction in the long run. Indeed, Figure 2 demonstrates that the observed ECR values are closely aligned with those predicted by Duverger's Law.

across print media—including newspapers, magazines, and books—have exhibited a long-term upward trend. For instance, the *Asahi Shimbun* (2023)—a leading Japanese daily with a circulation of approximately 3.5 million as of 2024—reported that its standard font size enlarged from 6.9 mm^2 in 1981–1991 to 11.1 mm^2 in 2001–2008, a 60.9% increase. This typographic shift reflects evolving reader preferences for legibility alongside the technological transition from lead-type letterpress printing to computer-based typesetting. As of 2023, the paper's standard font size has further expanded to 14.0 mm^2 . To isolate the true causal impact of the electoral reform from these confounding temporal trends, we employ a Difference-in-Differences (DID) design, utilizing candidates from the Upper House as a control group. Because the Tokyo district of the Upper House consistently maintained the SNTV-MMD system during this period, it serves as a valid baseline to net out macro-level technological and societal shifts in visual media.

Our DID estimation reveals that after controlling for time-fixed effects and district magnitude, the introduction of candidate fixed effects isolates a striking behavioral shift: the visual size of candidate name displays increased significantly following the reform (by 77% across the full 1983–2005 period, and by 163% during the intensive 1986–2003 period). In contrast, descriptive shifts in party-label sizes are negligible. These findings provide robust evidence that the transition to the mixed system catalyzed a sharp escalation in candidate-centered visual signaling.

Our findings diverge from previous studies utilizing election bulletins. While we measure the physical allocation of visual space, Crisp *et al.* (2021) focus on the frequency of text mentions. They find that post-reform text frequencies align with party-centered behavior. In contrast, our focus on visual salience (size) uncovers an entirely different

dimension of strategic behavior: when faced with a bounded visual budget, candidates prioritize immediate visual recognition over textual policy substance.

A primary methodological advantage of our study is the utilization of the institutional stability of the Upper House as a counterfactual control group within a DID framework. While prior work provides valuable nationwide descriptive insights using standard OLS specifications (e.g., Crisp *et al.* 2021), their capacity to isolate causal mechanisms is constrained without a counterfactual baseline. Our empirical strategy addresses this limitation by netting out confounding typographic and temporal trends, providing clean causal identification of how institutional incentives reshape political agents' strategic choices.

The remainder of this paper is organized as follows. Section 2 provides an institutional overview of Japan's electoral systems. Section 3 details our methodology for quantifying visual space. Section 4 describes the dataset, and Section 5 outlines the estimation strategy and presents our empirical results. Section 6 provides robustness checks, and Section 7 concludes.

2. Overview of Japan's National Political System

This section briefly describes the aspects of Japan's political system relevant to our empirical strategy.

1. Japan operates under a parliamentary system with a bicameral legislature, consisting of the House of Representatives (the Lower House) and the House of Councillors (the Upper House). The Lower House holds constitutional primacy, particularly in designating the prime minister and approving the national budget. Reflecting this institutional weight, all postwar prime ministers have been members of the Lower

House, while lawmakers of the Upper House can be the prime minister.

2. From the postwar era until 1993, the House of Representatives utilized the SNTV-MMD system, with district magnitudes ranging from two to six seats. Since the 1994 reform, elections have been conducted under a mixed electoral system that combines SMDs and PR.
 - 1) In this mixed system, voters cast two separate ballots: one for an individual candidate in an SMD and another for a party in the PR tier. The winning candidate in an SMD is determined independently of the party's performance in the PR tier.
 - 2) Similarly, PR seats are allocated to parties based on their share of the PR vote, regardless of the outcomes in the SMDs.⁴
 - 3) A feature of this system is “dual candidacy,” which allows candidates to run in an SMD and on a PR party list simultaneously. Candidates who lose in their SMD can still be resurrected and secure a seat through the PR tier. When a party ranks multiple candidates equally on its PR list, their priority for these seats is determined by the “best loser ratio” (*sekihaisu*)—the ratio of the candidate's votes to those of the winner in their respective SMD. Because most major party candidates are equally at the same order on the list, maximizing one's own vote total in the SMD remains essential, not only to win the district outright but also to improve the chances of winning a seat through PR.
3. In contrast, since 1983, elections for the House of Councillors were conducted under a two-tier system consisting of prefecture-level districts using the SNTV system and

⁴ This differs significantly from the German system, where the final seat distribution directly depends on the proportional vote, meaning additional seats are added if a party wins more single-member districts than its proportional share.

a nationwide closed-list PR tier. Unlike the Lower House, these two tiers in the Upper House are strictly separate; candidates are prohibited from running concurrently in both.

Due to this institutional separation, candidates in the Upper House do not benefit from the resurrection mechanism found in the Lower House. Consequently, we exclude the Upper House PR tier from our analysis and focus solely on the district-level contests. Crucially, the Tokyo district of the Upper House maintained a stable SNTV-MMD structure throughout the entire sample period, providing an ideal control group for our study. Table 1 provides a comparative summary of the electoral systems for both the Lower and Upper Houses in Tokyo.

[Table 1 about here]

While the Lower House holds constitutional precedence in designating the Prime Minister and approving the budget, the enactment of legislation generally requires the consent of both houses.⁵ Indeed, as Lijphart (2012, ch.11) categorizes Japan's Upper House as among the most powerful second chambers across 36 democracies, Japan's Upper House possesses nearly the same powers as the Lower House. Takenaka (2010) narratively illustrates that the House of Councillors is not merely subordinate to the House of Representatives, demonstrating that its members exerted influence over the political landscape and parliamentary deliberations no less vigorously than their Lower House counterparts. Furthermore, it is not rare to see candidates who lost in a Lower House

⁵ While a bill rejected by the Upper House can still be enacted if the Lower House passes it again with a two-thirds majority, such occurrences have been exceedingly rare in the postwar era.

election run in the next Upper House election, or sitting Upper House members resign to switch their candidacy to the Lower House. Crucially, the Upper House employs the same SNTV-MMD system in populous prefectures like Tokyo as the Lower House did prior to its reform. Both Houses also share identical voting methods and election bulletin formats. This high degree of institutional and functional similarity makes the Upper House an ideal control group for our DID estimation, as it allows for a robust comparison between the two chambers.

3. Method

In Japanese national elections, all candidates are entitled to present their messages and platforms in the official election bulletin, known as *senkyo-koho*. The bulletin possesses several features that make it an ideal resource for analyzing candidates' campaign strategies. First, its format has remained remarkably consistent over time. Second, as illustrated in Figure 1, all candidates receive equal treatment; each is allocated the same amount of space and is granted full autonomy over its content. These characteristics facilitate a longitudinal comparison of manifestos across candidates. Third, the bulletins are highly accessible to the electorate, as they are distributed to nearly all households via daily newspapers and are displayed at polling stations. Fourth, the bulletins encompass almost all candidates—with the exception of a few fringe candidates who opt not to provide a manifesto—allowing voters to easily compare platforms. Consequently, the election bulletin serves as a primary tool for candidates to communicate their messages and policy pledges. Indeed, according to the Association for Promoting Fair Elections (2015), after televised policy statements, the bulletin was ranked as the most accessed and useful information source for voters during the 2014 Lower House election.

It should be noted that the sample covers the years 1983 through 2005. While the internet had become widely accessible in households by the latter part of this period, strict legal restrictions prohibited its use for political campaigns in Japan. Additionally, present-day digital marketing via social media was nonexistent.⁶

Figure 4 displays the election bulletin manifesto of Hakubun Shimomura, a prominent lawmaker, from the 2003 Lower House election. A member of the Liberal Democratic Party (LDP), Shimomura later served as the Minister of Education, Culture, Sports, Science and Technology in the Abe administration from 2012 to 2015.

[Figure 4 about here]

As illustrated in Figure 4, Shimomura’s manifesto includes four distinct displays of his name, labeled (1) through (4), with display (1) being the most prominent. While such large-scale typography is eye-catching and likely enhances name recognition, it necessitates a strategic trade-off: more space allocated to a candidate's name leaves less available for substantive information. In this instance, Shimomura prioritizes the visibility of his personal brand over providing detailed accounts of his legislative achievements or policy platforms.

We measure the size of the most prominent display of a candidate’s name by calculating the area of its minimum bounding rectangle. The “name display share” is then defined as the proportion of this rectangle’s area relative to the total area of the manifesto. This metric allows us to compare the visual prominence of candidate names before and

⁶ Given that YouTube was launched in 2005 and Twitter (now X) in 2006, these platforms played no role whatsoever in the election campaigns of this era.

after the electoral reform.⁷ The detailed explanation on how to measure the largest display is given in the Appendix.

4. Data

Our dataset encompasses candidates in Tokyo's electoral districts for both the Lower and Upper House national elections from 1983 to 2005. During this period, eight elections were held for each house. Elections prior to 1994 constitute the pre-reform period for the Lower House, while those held after 1994 represent the post-reform period. In the Lower House, Tokyo was divided into 11 MMDs before the reform, which were later restructured into 25 SMDs. In contrast, Tokyo maintained a single Upper House MMD with four seats throughout the sample period. Table 2 presents the summary statistics. The dataset includes all candidates who published manifestos in the official election bulletins, totaling 814 observations for the Lower House and 269 for the Upper House. Female candidates are less prevalent in the Lower House (12.4%) than in the Upper House (20.8%). In terms of age, there are no substantial differences between the candidates of the two Houses.

[Table 2 about here]

Table 2 shows that the average area share devoted to the largest candidate name is 3.4% in the Lower House and 2.8% in the Upper House. While these figures may seem

⁷ In an approach similar to ours, Hijino and Ishima (2021) measured the proportion of space allocated to specific content within election bulletins. Specifically, they quantified the emphasis on national-level issues, such as national security, in Japanese prefectural assembly elections by measuring the area devoted to those policy messages. Their methodology demonstrates the utility of using spatial shares in election bulletins to capture candidates' strategic priorities.

modest, their visual impact is significant. For instance, in Furuyama's manifesto (Figure 1, top panel), the largest name display occupies 1.6% of the total space. An area share of 5% is already large enough to be visually salient; this is evident in Nakajima's manifesto (Figure 1, second panel), where the largest name display reaches 5.0%. Compared to candidate names, the size of party names is notably smaller in both chambers, at approximately 0.8% in the Lower House and 1.6% in the Upper House. Given that Japanese voters must write a candidate's name directly on the ballot, it is reasonable to expect that candidates have a strong incentive to enhance name recognition through such prominent displays.

The logarithmic distribution of the candidates' name display share, which is our primary focus, is presented in Figure 5. For both the House of Representatives and the House of Councillors, the values follow an approximately symmetric distribution when log-transformed.

[Figure 5 about here]

5. Estimation

1. Lower House

First, we perform an OLS estimation focusing on the area share of candidate names in the Lower House. The regression model is specified as follows:

$$y_{it} = \alpha + \beta_1 seat_{it} + \beta_2 ECR_{it} + \mathbf{X}_{it}' \boldsymbol{\delta} + \lambda_t + e_{it}, \quad \dots [1]$$

where the dependent variable, y_{it} , is the natural logarithm of the area share devoted to

candidate i 's largest name display in election t . Among the independent variables, $seat_{it}$ and ECR_{it} represent the district magnitude and the Effective Competition Rate, respectively, for candidate i 's district in election t . Additionally, λ_t denotes election-year dummy variables, which account for temporal effects common to all candidates. Finally, e_{it} denotes the error term.

The vector $\mathbf{X}_{it}$ includes candidate-specific characteristics such as sex, age, and the number of term elected. We also include dummy variables for three major political parties—the Liberal Democratic Party (LDP), Komeito, and the Japanese Communist Party (JCP)—as these parties maintained a continuous presence throughout the sample period. Furthermore, to account for candidates from parties that were dissolved, merged, or newly established, we introduce a “major candidate” dummy variable. This variable is coded as 1 if a candidate has been elected at least once or secured more than 5% of the vote in a given election. This dummy effectively captures prominent candidates from influential but non-continuous parties, such as the Japan Socialist Party, the dominant opposition before the reform, and the Democratic Party of Japan, which rose to power after the reform.

In addition, cabinet approval ratings were also included in $\mathbf{X}_{it}$. Specifically, cabinet approval and disapproval rates are included as independent variables to control for the electoral environment. The approval-rate variable takes the cabinet approval rate for candidates from ruling parties and zero for opposition candidates and independents. Conversely, the disapproval-rate variable takes zero for candidates from ruling parties and the cabinet disapproval rate for opposition candidates and independents.

$\mathbf{X}_{it}$ also incorporates regional dummy variables to control for the specific geographic

characteristics of the districts. These dummies were constructed based on the correspondence between the former MMDs and the new SMDs. If an SMD's territory was entirely contained within a single former MMD, it was assigned to that MMD's region. However, in cases where an SMD spanned multiple former MMDs, those MMDs were consolidated into a single region. Consequently, the 11 former MMDs and the 25 new SMDs were aggregated into nine distinct regions, with a dummy variable for each included in X_{it} . A detailed explanation of these regional categories is provided in the Appendix.

[Table 3 about here]

Table 3 reports the OLS estimation results for Lower House candidates across three periods: (i) 1983–2005, (ii) 1986–2003, and (iii) 1989–2000. In each period, the number of elections held before and after the electoral reform is balanced between the House of Representatives and the House of Councillors, with four elections each in period (i), three in period (ii), and two in period (iii).

Controlling for election-year fixed effects, we examine how changes in district magnitude and the Effective Competition Rate (ECR) affect the size of candidate name displays. When candidate fixed effects are excluded, an increase in district magnitude is associated with larger name displays (Table 3 (1) to (6)). Although this effect is not statistically significant in the 1989–2000 period, the estimated coefficients range from 0.085 to 0.11 in the 1983–2005 and 1986–2003 periods. This implies that an increase in district magnitude from one to four seats expands the visual prominence of candidate names by approximately 29% to 39 %.

The degree of electoral competition, measured by ECR, is statistically significant in the 1983–2005 period, though not in others (Table 3 (1), (3), and (5)). While the direct effect of ECR is modest, its inclusion as a control variable enhances the estimated impact of district magnitude. For instance, in the 1983–2005 period, the estimates for district magnitude is 0.11 with ECR, compared to 0.085 without it (Table 3 (1) and (2)). As illustrated in Figure 2, the introduction of the SMD system led to an increase in ECR; therefore, controlling for ECR allows for a more precise estimation of the independent effect of district magnitude.

These results show that, even holding ECR constant, candidates in districts with a larger magnitude tend to display their names more prominently. Overall, this institutional shift from the SNTV-MMD system to the SMD system reduced the size of candidate name displays.

Next, we estimate the model including candidate fixed effects. Some candidates allocate space in their election bulletins to display their names prominently, while others use that space to provide detailed explanations of their policies, pledges, and achievements. Candidates differ in their preferences regarding what information should be conveyed to constituents, and consequently in how prominently their names are displayed. Once candidate fixed effects are controlled, the estimates lose statistical significance (Table 3 (7) to (12)). None of the variables—the district magnitudes and ECR—are statistically significant in any of the three periods. The loss of statistical significance may be partly attributable to the reduction in sample size caused by the inclusion of individual fixed effects. Nevertheless, the estimated coefficients remain largely unchanged regardless of whether individual fixed effects are included.⁸

⁸ Of the 431 candidates for the House of Representatives during the sample period, 259

2. DID estimation

As noted in the Introduction, larger font sizes have become the norm over time, irrespective of electoral reform. It is therefore necessary to control for factors other than the reform itself. To address this concern, we implement a DID estimation, using House of Councillors elections as the control group.

The regression model is estimated with the DID method as follows:

$$y_{it} = \alpha_i + \lambda_t + \gamma_1 seat_{it} + \gamma_2 ECR_{it} + \gamma_3 lower_i + \gamma_4 lower_i * after_t + \mathbf{X}_{it}' \boldsymbol{\delta} + e_{it}, \quad \dots [2]$$

where the dependent variable y_{it} is the share of area devoted to the candidate i 's name in election period t in logarithmic form. Among the independent variables, λ_t denotes time fixed effects that capture common shocks across candidates within each election cycle, $lower_i$ is an indicator for candidates running in the Lower House, and $after_t$ is an indicator for the post-reform period. The coefficient γ_4 of $lower*after$ shows the effect of the reform estimated with the DID method. $\mathbf{X}$ is the same as those of [1].

The election cycle is crucial for the DID estimation. The term of members of the Lower House is four years; however, because the Prime Minister can dissolve the Lower House at their discretion, general elections are often held before the full term expires. As a result, elections are typically held every about two to three years, although the timing is irregular. In contrast, members of the Upper House serve fixed six-year terms, with half

candidates appear only once in the dataset, accounting for 60.0% of all candidates. Because the fixed-effects estimator relies on within-candidate variation, candidates who appear only once do not contribute to identification and are effectively excluded from the estimation sample

of the seats contested every three years. Consequently, elections for the two houses are rarely held simultaneously; during the sample period, this occurred only in 1986.

[Table 4 about here]

To ensure comparability between the Lower and Upper Houses, we construct election cycles by grouping election years into comparable periods. This approach aligns elections across the two houses, allowing us to control for common time-specific shocks within the DID framework. As shown in Table 4, a single election cycle is defined as the interval between two regular House of Councillors elections, during which one (irregular) House of Representatives election occurred.

Defining the election cycle is necessary because a model using election year dummies as time-fixed effects is incompatible with DID analysis. Aside from 1986, the Lower and Upper House elections occur in different years (see Table 4), meaning that simple election dummies would be perfectly correlated with the *lower*after* interaction term.

Given that the electoral reform for the Lower House was enacted in 1994, we divide the sample into pre- and post-reform periods using 1994 as the cutoff. Of the eight cycles, Cycles 1–4 correspond to the pre-reform period, while Cycles 5–8 cover the post-reform period.

The timing of elections for the House of Representatives and the House of Councillors typically differs by approximately one year. By grouping these into a single election cycle, we aim to control for common shocks occurring within the same period. With the exception of Cycle 2 in 1986 (a double election), the election dates for the two houses do not coincide. However, since the Cabinet approval rating immediately preceding each

election is included as an explanatory variable, we believe the impact of this timing discrepancy is sufficiently mitigated.

In addition, under the election cycle defined in Table 4, a few candidates ran for both the Lower and Upper House elections within the same cycle. Since including these candidates makes a DID analysis with candidate fixed effects impossible, we treat them as separate individuals across elections in the subsequent estimation. This applies to 14 individuals totaling 30 observations, accounting for 2.3% and 2.8% of the full sample, respectively. Notably, removing these candidates altogether had little to no impact on the estimation results.

We acknowledge that the definition of these cycles involves a degree of arbitrariness. The extent to which this cycle definition affects the estimation results—and the associated robustness checks—will be discussed in detail in a subsequent section.

[Table 5 about here]

Table 5 presents the results of the DID estimation for candidates in both the Lower and Upper Houses. The coefficient of the *lower*after* dummy represents the genuine effect of the electoral reform. Table 5 (1) to (6) shows the results estimated without including candidate fixed effects. The estimated coefficients for district magnitudes and ECR are also similar to those obtained from the OLS estimation restricted to Lower House candidates, shown in Table 3: An increase in district magnitude is associated with a larger display of candidate names. The effects are statistically significant for the 1983–2005 and 1986–2003 periods: when district magnitude increases from one to four, the candidate name area share rises by about 41% (Table 5 (1) and (3)). This pattern is consistent with

the idea that the importance of the personal vote increases with district magnitude.

The estimated coefficients for the interaction term (*lower*after*) lose statistical significance across all specifications (Table 5 (1) to (6)). No substantial difference is observed between the Lower and Upper Houses. It seems that the impact of the electoral reform can be primarily explained by district magnitude and the ECR. However, once candidate fixed effects are accounted for, a substantial difference emerges.

Once candidate fixed effects are introduced, the estimates of *lower*after* become both larger and highly significant. Lower House candidates increased the size of their name displays by 77% to 163% more than Upper House candidates following the electoral reform (Table 5 (7) to (12)). In contrast, while the estimated coefficients for district magnitude do not deviate significantly from those presented in Table 5 (1) to (6), they lose significance in most specifications except for Model (10).

The inclusion of candidate fixed effects suggests that factors beyond changes in district magnitude and competitive environments influence candidate promotion strategies. The transition from the SNTV-MMD system to the SMD system appears to have induced effects distinct from those related to the reduction in seats per district and the change in competitive pressure captured by ECR; however, the precise nature of these factors remains unclear. Unlike the SNTV-MMD system, where even second- or third-place candidates could secure seats, the SMD system necessitates a first-place finish, which may fundamentally alter candidate incentives. The estimation results of this study suggest that the electoral reform represented a far more drastic environmental shift for candidates than much of the public realizes, exerting a level of pressure that transcends quantifiable metrics such as district magnitude or competitive landscape. This heightened pressure may have driven candidates toward a survival strategy centered on maximizing

name recognition at any cost—leading them to enlarge the display of their names on the election bulletins—rather than emphasizing policy platforms. Japan’s electoral reform experience reveals that systems centered on SMDs can lead candidates to prioritize name recognition and self-promotion over policy platforms and pledges.

6. Discussion

1. Parallel trends

To assess the validity of the parallel trend assumption, we perform an event study analysis. The results confirm that the parallel trends assumption holds for both the 1986–2003 and 1989–2000 periods. Figure 6 presents the event study results for the 1986–2003 period, which is relevant to that in Table 5 (9). The pre-reform coefficients are close to zero and statistically insignificant, supporting the parallel trends assumption. Furthermore, the 95% confidence intervals for the pre-reform coefficients are relatively narrow, indicating high precision in our estimates and supporting the stability of pre-existing trends. Collectively, these findings provide robust evidence that the parallel trends assumption is satisfied.

[Figure 6 about here]

To formally examine this, we conduct joint tests on the event-time coefficients. The joint test for the pre-event coefficients fails to reject the null hypothesis that they are jointly equal to zero, indicating no systematic divergence in trends between the treatment and control groups prior to the reform. In contrast, the joint test for the post-event coefficients rejects the null, suggesting that the reform had a statistically significant

impact following its implementation.

2. Election cycle

We conducted our estimation using the election cycles defined in Table 4. This approach was necessitated by the fact that if we were to include individual election dates for both Houses as dummy variables without defining cycles, the interaction term (*lower*after*) could not be estimated due to multicollinearity. Therefore, we defined these cycles to effectively control for common shocks.

We acknowledge that the definition of these cycles involves a degree of arbitrariness. For instance, according to Table 4, the 2000 general election (Cycle 6) is chronologically closer to the 2001 Upper House election (Cycle 7) than to the 1998 Upper House election within its own assigned cycle. Similarly, the 2003 general election (Cycle 7) is closer in timing to the 2004 Upper House election (Cycle 8) than to the 2001 election. In this section, we examine the extent to which alternative definitions of these cycles might influence our findings.

[Table 6 about here]

Specifically, we redefined the election cycles to minimize the chronological gap between Lower and Upper House elections. While Cycles 1 through 5 remain unchanged, the new Cycle 6 consists of the 2000 general election and the 2001 Upper House election, and the new Cycle 7 comprises the 2003 Lower House election and the 2004 Upper House election. For this estimation, the 1998 Upper House election and the 2005 Lower House election were excluded from the sample. The estimation results, presented in Table 6, are

consistent with those reported in Table 5. These findings suggest that the specific grouping of election cycles does not fundamentally alter the results, confirming that the cycles appropriately control for common shocks within each period.

3. Strategic Complementarity

To increase voter recognition, candidates may choose to make their names stand out by making it visually larger relative to their opponents. Naturally, rival candidates face the same incentive; thus, if one candidate in a district enlarges their name, other candidates might follow suit. To check this possibility, Figure 7 plots the mean log candidate name display share of rival candidates in the same district on the horizontal axis against the candidate's own name display share on the vertical axis for House of Representatives elections. If candidates systematically enlarged their name display in response to rival candidates doing the same, the plot should display a positive correlation. As Figure 7 indicates, however, no such strategic complementarity is observed under either the former SNTV-MMD system or the current SMD system; there is no clear relationship.

Indeed, even when adding the average name display share of rival candidates within the same district as an explanatory variable to the estimation model, our main results remain largely unchanged.

[Figure 7 about here]

4. Party label

Having estimated the size of candidate names, we also conducted a similar quantitative analysis focusing on the size of party names. However, the analysis of party names

involves considerations that differ from those for candidate names. In particular, whether to affiliate with a political party is itself a strategic choice. While every candidate necessarily has a name, not every candidate necessarily has a party affiliation. In large urban areas such as Tokyo, many swing voters do not support specific parties, and some voters hold negative views toward established parties. Consequently, some candidates deliberately choose to run as independents without party endorsement.⁹

[Table 7 about here]

The results on party labels show that, once candidate fixed effects are included, the estimated effects on the size of party names are statistically insignificant and small in magnitude (Table 7). In other words, compared to candidates in the Upper House, where no institutional change occurred, Lower House candidates do not increase the size of their party names.

This finding is particularly interesting. It was expected that the electoral reform in the Lower House strengthened the influence of party leaders and central party organizations. One might expect the electoral reform would lead candidates to place greater emphasis on promoting their party affiliation. However, no such change is observed. Instead, candidates appear to have shifted their strategy toward increasing the prominence of their own names.

⁹ Independent candidates naturally have zero party name area. Since the log of the party name display share serves as the dependent variable, zero-value observations were imputed using the sample's minimum positive value of 0.0006196. In addition, estimations excluding these zero-value observations similarly yielded no statistically significant results for the party name display share.

5. Contamination effect

As discussed in Section 2, the electoral reform introduced a mixed electoral system combining SMD and PR tiers for the Lower House. Candidates are permitted to run simultaneously in both tiers, and those who fail to secure a seat in the SMD tier may still be elected via the PR tier if their party receives sufficient votes. Therefore, given the interaction between SMDs and PR, it is plausible that a contamination effect exists. Indeed, Wang, Lin, and Hsiao (2016) note that roughly 20 to 30 percent of Japanese voters split their tickets between SMDs and PR, making the presence of a contamination effect a contested topic.

Focusing on candidates' vote shares in Japan's 1996 House of Representatives election, Herron and Nishikawa (2001) demonstrated that parties running SMD candidates received higher PR vote shares regardless of party affiliation, suggesting a contamination effect. However, their study suffers from causal inference limitations due to unaddressed endogeneity. Reanalyzing the 1996, 2000, 2003, and 2005 elections with a two-stage estimation technique, Maeda (2008) showed that while simple OLS detects a contamination effect, this effect disappears once treatment effects are properly controlled for. Based on Maeda's (2008) more sophisticated estimation, it is reasonable to conclude that contamination effects do not exist regarding candidates' vote shares.

However, even assuming a contamination effect exists, our focus centers on candidates' promotional strategies rather than vote shares. If fielding an SMD candidate were intended to—or did in fact—boost the party's PR vote share, candidates would have prioritized advertising their party affiliation over emphasizing their own names. Even so, our empirical results indicate that Lower House candidates have placed greater emphasis

on promoting their personal names following the reform. Consequently, even under a counterfactual scenario excluding the PR tier, the effect of introducing SMDs on name promotion would likely remain consistent with our findings.

7. Conclusion

This study focuses on the font size of candidate names in election bulletins (*senkyo-koho*) for the Lower and Upper Houses in Tokyo districts from 1983 to 2005. Prevailing theory suggests that the transition from the SNTV-MMD system to the SMD system should discourage Lower House candidates from promoting their own names. To account for temporal changes in printing technology and font size standards, we employed a DID estimation, utilizing Upper House candidates—who were not subject to the system change—as a control group.

Our DID analysis shows that factors beyond district magnitude and competitive environments significantly influence candidates to display their names in larger fonts. This effect is substantial, with the display size of the names increasing by as much as 163% in 1986-2003 period: Candidate self-presentation play a dominant role in electoral campaigning.

This is a compelling finding. According to Nemoto and Tsai (2016), voters shifted their behavior to place greater emphasis on party affiliation following the electoral reform. The authors observed that 49.1% of voters based their decisions on candidate personality in the 1993 election, the final campaign held under the SNTV-MMD system. By the 2009 election, however, this figure dropped to 29.0%, while 61.2% of voters prioritized party affiliation. Given this shift in voter priorities, one would expect candidates to adapt their campaign strategies accordingly—specifically by promoting their party labels more

prominently than their own names. Contrary to this expectation, our empirical results demonstrate the opposite: candidates have intensified, rather than diminished, the emphasis on their own names.

Why have these results emerged? While the reasons are not definitive, we propose a plausible explanation. As illustrated in Figure 2, the competitive environment in electoral districts has intensified; under the SMD system, a candidate must secure the top position to win. Conversely, under the SNTV-MMD system, a candidate could be elected by finishing third or fourth, which allowed them to succeed by relying on a relatively small base of core supporters. In large cities like Tokyo, where swing voters constitute a substantial portion of the electorate, achieving a first-place finish is difficult without capturing these independent voters. Consequently, candidates must promote their names more aggressively to secure a seat in the SMDs. If that is the case, Japan's electoral reform has led candidates to prioritize raising their profile over debating policies.

Japan's electoral reform was originally expected to centralize power within party headquarters and diminish the significance of personal votes in favor of party-centered campaigns. Indeed, Reed and Thies (2001), Koellner (2009), and Krauss and Pekkanen (2011) observed a shift toward party-oriented campaigning. However, these studies also noted that the pace of this transition was significantly slower than anticipated. Our findings suggest that the personal vote remains crucial in Lower House elections. This implies that Japan's campaign style may require more time to fully evolve.

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Table 1

Tokyo's electoral system in 1983-2005 period

	Lower House		Upper House	
Before	SNTV-MMD		SNTV-MMD	PR
After	SMD	PR		

• Candidates can run both SMD and PR campaigns.

• Candidates can **NOT** run both MMD and PR campaigns.

Notes:

- Tokyo district of the Upper House is an MMD. Some rural prefectures have a SMD in the Upper House, but these are out of our focus.
- Until the 1980 election the Upper House had the national-wide MMD instead of the PR component, but it is also beyond our focus.

Table 2

Summary statics

Variable	Lower House				Upper House			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Age	50.0	11.4	25	84	50.2	13.4	30	90
Female	0.124	0.330	0	1	0.216	0.412	0	1
LDP	0.220	0.414	0	1	0.041	0.198	0	1
Komeito	0.058	0.233	0	1	0.026	0.159	0	1
JCP	0.177	0.382	0	1	0.030	0.170	0	1
No Party	0.098	0.298	0	1	0.156	0.364	0	1
Number of times elected	1.48	2.30	0	13	0.22	0.74	0	5
Candidate name display share	0.034	0.028	0.004	0.224	0.028	0.031	0.002	0.208
Party label display share	0.008	0.011	0	0.156	0.016	0.026	0.000	0.248
Observation	814				269			

Table 3

**Share of area devoted to the largest candidate name in
Lower House (LN)**

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	1983-2005		1986-2003		1989-2000	
Seat	0.1095** (0.0504)	0.0847* (0.0485)	0.1082** (0.0538)	0.0881* (0.0521)	0.0876 (0.0622)	0.0711 (0.0597)
ECR	0.1081* (0.0616)		0.0850 (0.0661)		0.0643 (0.0779)	
FE	No	No	No	No	No	No
Adjusted R2	0.2276	0.2254	0.1941	0.1933	0.1894	0.1900
Observations	814	814	645	645	482	482
VARIABLES	(7)	(8)	(9)	(10)	(11)	(12)
	1983-2005		1986-2003		1989-2000	
Seat	0.1036 (0.0952)	0.0863 (0.0871)	0.1525 (0.1041)	0.1494 (0.0950)	0.1178 (0.1088)	0.1185 (0.0994)
ECR	0.0637 (0.0854)		0.0115 (0.0966)		-0.0028 (0.1343)	
FE	Yes	Yes	Yes	Yes	Yes	Yes
Within R2	0.1729	0.1713	0.1593	0.1593	0.1570	0.1570
Observations	555	555	395	395	250	250
Number of candidates	172	172	136	136	97	97

Cluster standard errors in parentheses

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

Table 4

Definition of election cycles

	Before				After			
	cycle 1	cycle 2	cycle 3	cycle 4	cycle 5	cycle 6	cycle 7	cycle 8
Lower House	1983	1986	1990	1993	1996	2000	2003	2005
Upper House	1983	1986	1989	1992	1995	1998	2001	2004

The dataset includes eight elections of the Lower House (1983, 1986, 1990, 1993, 1996, 2000, 2003, and 2005), and eight elections of the Upper House (1983, 1986, 1989, 1992, 1995, 1998, 2001, and 2004). In 1986, the elections of both Houses were held at the same time. In 1983, each election of the Upper and Lower Houses was held in June and December, respectively.

Table 5**DID on candidate name display share between Lower & Upper Houses**

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	1983-2005		1986-2003		1989-2000	
Lower*After	0.0258 (0.1929)	0.1346 (0.1807)	0.0257 (0.2156)	0.1236 (0.1941)	-0.0996 (0.2395)	-0.0415 (0.2220)
Seat	0.1152** (0.0507)	0.0915* (0.0493)	0.1138** (0.0543)	0.0945* (0.0526)	0.0914 (0.0621)	0.0783 (0.0596)
ECR	0.1008* (0.0564)		0.0795 (0.0630)		0.0504 (0.0775)	
FE	No	No	No	No	No	No
Adjusted R2	0.2864	0.2846	0.2654	0.2648	0.2582	0.2590
Observations	1,083	1,083	872	872	648	648

	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	1983-2005		1986-2003		1989-2000	
Lower*After	0.5682* (0.3009)	0.5783* (0.3047)	0.9669*** (0.3411)	0.8993*** (0.3358)	0.8859** (0.3862)	0.7939** (0.3580)
Seat	0.0966 (0.0872)	0.0944 (0.0812)	0.1487 (0.0977)	0.1624* (0.0908)	0.1119 (0.0986)	0.1274 (0.0911)
ECR	0.0080 (0.0756)		-0.0501 (0.0893)		-0.0672 (0.1359)	
FE	Yes	Yes	Yes	Yes	Yes	Yes
Within R2	0.1522	0.1522	0.1624	0.1614	0.1620	0.1607
Observations	670	670	483	483	312	312
Number of candidates	222	222	176	176	127	127

Cluster standard errors in parentheses

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

Table 6

DID on candidate name display share between Lower & Upper Houses								
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	1983-2004		1986-2004		1986-2001		1989-2001	
Lower*After	-0.0523 (0.2000)	0.5645* (0.3304)	-0.0553 (0.2156)	0.9497*** (0.3566)	-0.0827 (0.2344)	1.0339*** (0.3802)	-0.0692 (0.2449)	1.0208** (0.4085)
Seat	0.1121** (0.0513)	0.1199 (0.0891)	0.1235** (0.0535)	0.1667* (0.0939)	0.1015* (0.0571)	0.1539 (0.0989)	0.0914 (0.0620)	0.1363 (0.0975)
ECR	0.1139* (0.0597)	0.0505 (0.0905)	0.1143* (0.0616)	0.0201 (0.0882)	0.0937 (0.0711)	-0.0074 (0.1186)	0.0502 (0.0787)	-0.0207 (0.1332)
FE	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R2	0.2712		0.2680		0.2506		0.2459	
Within R2			0.1633				0.1714	
Observations	979	564	863	467	759	385	643	302
Number of candidates			192				144	

Cluster standard errors in parentheses

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

Election cycles are as follows:

Cycle 1: Lower House 1983, Upper House 1983

Cycle 2: Lower House 1986, Upper House 1986

Cycle 3: Lower House 1990, Upper House 1989

Cycle 4: Lower House 1993, Upper House 1992

Cycle 5: Lower House 1996, Upper House 1995

Cycle 6: Lower House 2000, Upper House 2001

Cycle 7: Lower House 2003, Upper House 2004

Table 7**DID on party name display share between Lower & Upper Houses**

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	1983-2005		1986-2003		1989-2000	
Lower*After	0.0868 (0.2250)	0.0048 (0.2128)	-0.0085 (0.2456)	-0.0979 (0.2275)	-0.2787 (0.2908)	-0.2772 (0.2711)
Seat	-0.0161 (0.0567)	0.0018 (0.0551)	-0.0340 (0.0611)	-0.0164 (0.0592)	-0.0429 (0.0714)	-0.0432 (0.0686)
ECR	-0.0760 (0.0637)		-0.0726 (0.0709)		0.0013 (0.0861)	
FE	No	No	No	No	No	No
Adjusted R2	0.6027	0.6027	0.6019	0.6020	0.5939	0.5946
Observations	1083	1083	872	872	648	648

	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	1983-2005		1986-2003		1989-2000	
Lower*After	0.1148 (0.4478)	-0.2232 (0.4227)	0.3701 (0.5522)	-0.1017 (0.5124)	0.0731 (0.6476)	-0.2553 (0.5779)
Seat	-0.0983 (0.0926)	-0.0262 (0.0930)	-0.1139 (0.1108)	-0.0188 (0.1112)	-0.1102 (0.1312)	-0.0548 (0.1316)
ECR	-0.2671*** (0.0997)		-0.3497*** (0.1178)		-0.2402 (0.1536)	
FE	Yes	Yes	Yes	Yes	Yes	Yes
Within R2	0.3840	0.3748	0.4509	0.4356	0.5393	0.5338
Observations	670	670	483	483	312	312
Number of candidates	222	222	176	176	127	127

Cluster standard errors in parentheses

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

40

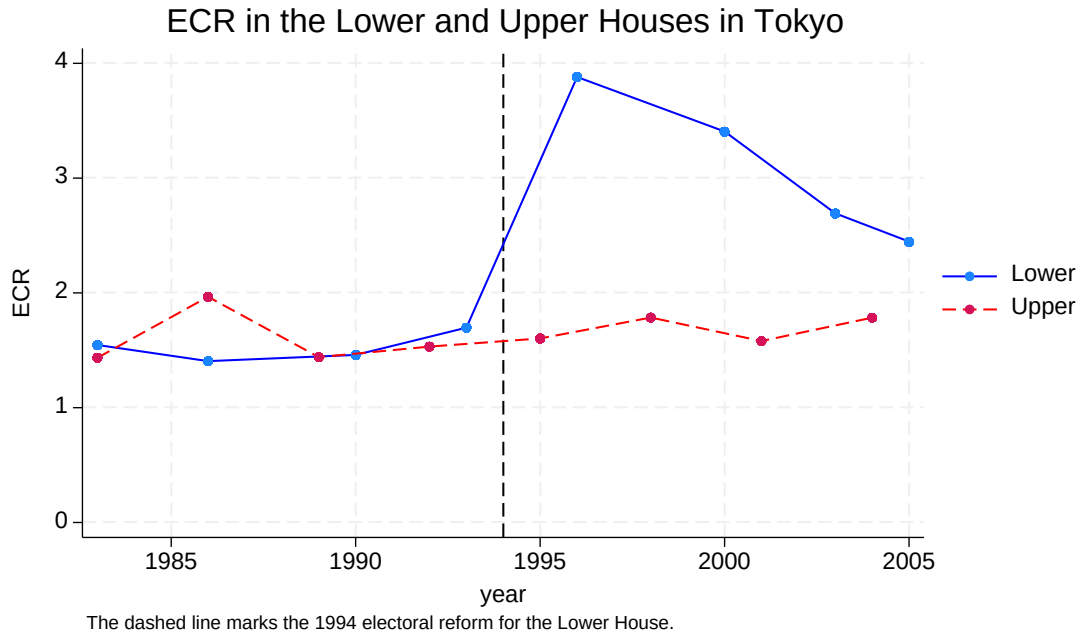


Figure 2

Effective competition rate (*ECR*) is defined as the effective number of candidates (*ENC*) in a district divided with the number of seats (*N*) in the district: $ECR = ENC/N$. The effective number of candidates is given as $ENC = 1 / \sum (v_i)^2$, where v_i is the vote share for the candidate i in the district.

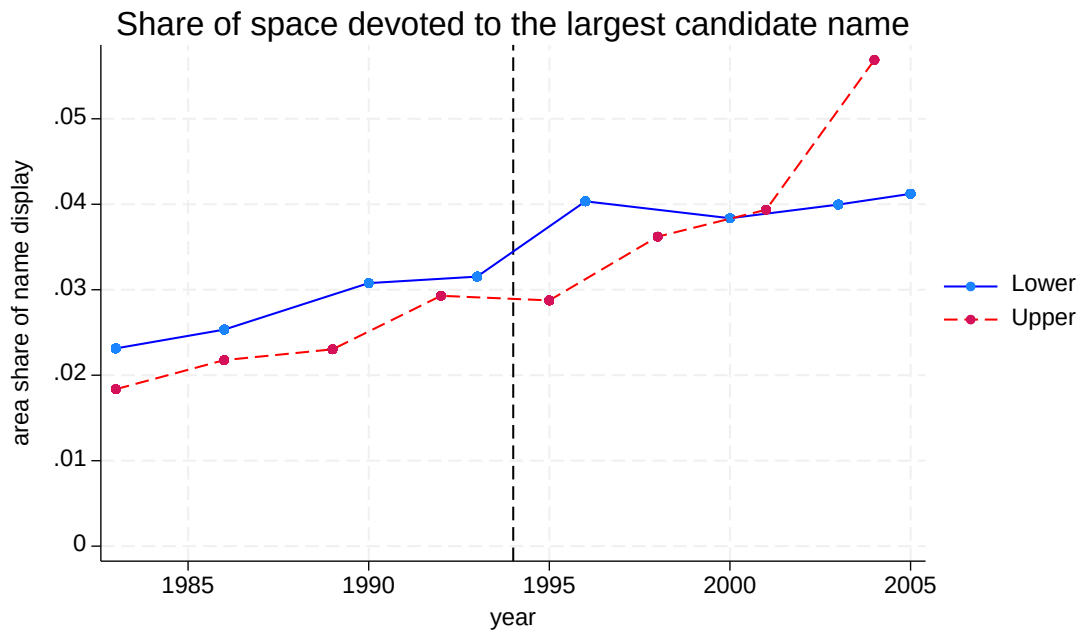


Figure 3

The blue and red curves represent the share of space devoted to candidates' names in the official election bulletin for House of Representatives and House of Councillors candidates, respectively. The black dashed line indicates the year 1994, when the electoral reform law for the House of Representatives was enacted.

安倍幹事長と共に自民党を変え日本を変える

自民党副幹事長 しもむらはくぶん

(1) **下村博文**

人を幸せにする仕事、それが政治だ。
<http://www.hakubun.or.jp>

【憲法改正】日本国憲法を改正し、真の独立国家日本を創る。

【教育立国】教育基本法を改正し、戦後教育の抜本的改革を行う。

【都市再生】環境・都市基盤整備・都市の規制緩和等を行い新しい東京を創る。

【治安・防犯対策】法務大臣政務官の経験から治安防犯を徹底する。

【デフレ経済の克服】2006年度GDP名目2%成長を実現する。



自由民主党公認

(4) **下村博文**

49歳

(3) **下村博文**プロフィール

早稲田大学教育学部卒業	元法務大臣政務官	自民党法務部会長代理
東京都議会議員2期	前議院運営委員会理事	自民党副幹事長
衆議院議員2期	自民党文部科学部会副会長	あしなが育英会副会長

Figure 4

Hakubun Shimomura's manifesto on the election bulletin of the Lower House election in 2003. There are 4 presentations of his own name, (1) to (4), and the name presentation (1) is the biggest to measure as the area rate of candidate name.

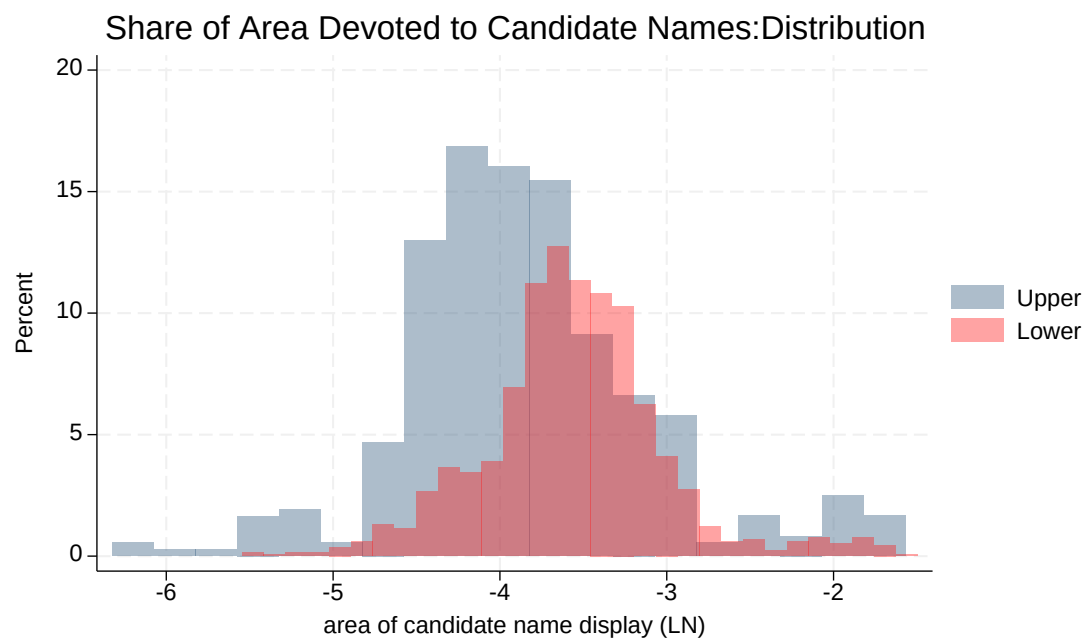


Figure 5

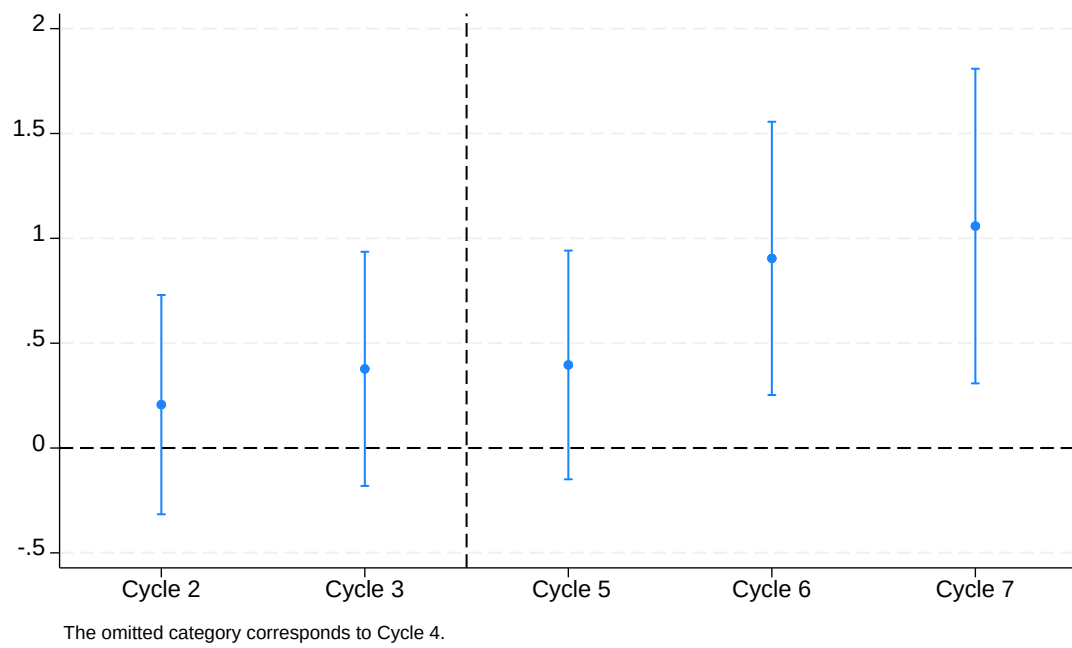


Figure 6

The figure shows 95% confidence intervals.

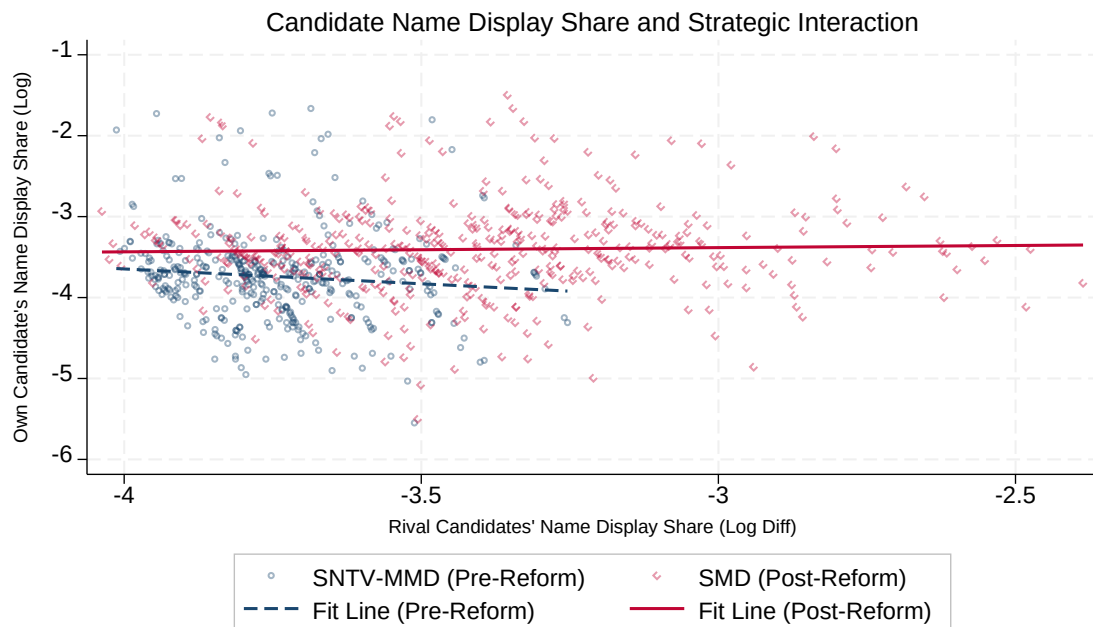


Figure 7

Relationship between candidate name display share (log) and rival candidates' mean name display share (log) in the same district in Lower House elections

Appendix

[1] How to measure the area rate of candidates' name displays

The biggest name of a candidate is defined as the biggest display of the candidate's name in the manifestos. We measured the area of the biggest name as follows: A candidate's family and first names are treated separately as an independent block. The area of the family or first name is defined as the area of the minimum rectangle surrounding the entire of the name.

- 1) **Rule 1:** When the biggest name display includes both the family and first names, the area of the biggest name is the sum of the areas of both the family and the first names.

The example is given by Figure A-1. The biggest name display includes both the family and first names with the same font. We measured the areas of the red rectangles that are the minimum ones surrounding the entire of the family name A1 and the first name A2. The sum of areas of the two red rectangles is defined as the area of the biggest name.

Another example is shown in Figure A-2. The biggest name display has two parts of the family name B1 and the first one B2 of which the fonts are not the same. The area of the biggest name is the sum of those of both parts.

- 2) **Rule 2:** The biggest name does not include the phonetic letters, *kana*. The entire or a part of the biggest name is often represented with Chinese characters, *kanji*. Some candidates add phonetic letters, *kana*, along with the *kanji*-written name. In this case, we do not treat the phonetic letters as a part of the biggest name, thus they are to be outside the minimum rectangle surrounding the biggest name.
- 3) **Rule 3:** When candidates' names are shown in the Italic form, we did not measure the minimum parallelogram, but the minimum rectangle surrounding the names.

- 4) **Rule 4:** When the biggest name includes either the family or first name, we measured it as the biggest name. The example is shown in Figure A-3, where the biggest name C means the candidate's family name.
- 5) **Rule 5:** When a part of candidate's name is displayed unevenly or diagonally, we regard the part as a rectangle by sliding it appropriately and measure the area of the rectangle. An example is given by Figure A-4, where the candidate's first name D is displayed unevenly. In this case the vertical and horizontal lengths are given as the lines a and b , respectively. Thus, the area of the name is derived from the line a and b . Another example is in Figure A-5, where the first name E is displayed diagonally. The area of the first name E is also measured with the line a and b .
- 6) **Rule 6:** Some cases are inappropriate if the area of candidate's name is regarded as a rectangle. Figure A-6 is an example, in which the candidate shows her first name F unevenly. In this case the first name F is divided into two rectangles, a and b , and then the sum of the areas of the two rectangles is measured.
- 7) **Rule 7:** Some candidates added a bullet point between their family and first names. In Figure A-7, the point G is not included as the candidate's name.
- 8) **Rule 8:** Name displays that are used for a kind of background design are not treated as the biggest name presentation. As the examples, in Figure A-8, a big display H of the candidate's name is used as the background design. This is represented with the light fonts for transparency; thus, it is not enough to emphasize the candidate's name. We do not treat it as the biggest name.

The area rate of the biggest name display is derived as the area of the biggest name divided with the area of the entire space of the manifesto.

[2] How to measure the area rate of party label displays

The area of the biggest party label is measured in the same way as that of the biggest candidate's name except a few aspects as follows:

- 1) **Rule 9:** Party label displays are considered for officially appointed party candidates.

If candidates are only recommended or supported by some parties, these party label display will not be considered. Similarly, even if candidates convey their tight relationship with major lawmakers of a party, party label without the official appointment will not be treated as the party label display. For candidates without party affiliation, therefore, the area rate of party label display is zero.

- 2) **Rule 10:** Abbreviations of party labels are treated as party labels.

- 3) **Rule 11:** We do not treat the descriptions that use the same words as the party label do not refer to the party itself, as party label displays. Some words are used to show universal meanings on the manifesto. For example, liberty, democracy, happiness, etc. While these words are likely included in party labels, many candidates refer to the universal definition associated with these words like "I support the democratic society." It is not appropriate that these kinds of words, "democratic" in the sentence, is treated as a party label. Similarly, some descriptions that are used with the same words as party labels but mean related organizations of the party are not treated as party affiliations.

In Figure A-1, the candidate was a member of a new party, Shinto-Nippon, which means New Party of Japan. The description "Nippon" as Y surrounded with the green lines is not treated as the party label because the word does not refer to the party itself: The sentence including the description Y is just "Trust Japan!" and nothing else. In Figure A-1, the biggest party label display is given by X surrounded with the blue

lines.

[3] On the region dummies

The SMDs are smaller than the ex-MMDs of the Lower House in Tokyo. The territory of some SMDs are entirely included in that of an ex-MMD, while others are located across multiple ex-MMDs. We categorize all MMDs and SMDs into 9 regions as shown in Figure A-9.

- 1) The 1st and 2nd SMDs are completely mapped to the 1st and 8th ex-MMDs, respectively. These are categorized as Region 1 (R1) and 2 (R2), respectively.
- 2) The 2nd ex-MMD was divided into the 3rd and 4th SMDs, thus these districts are categorized as Region 3 (R3). Similarly, the 3rd ex-MMD was divided into the 5th and 6th SMDs, thus these districts are categorized as Region 4 (R4); the 4th ex-MMD was divided into the 7th and 8th SMDs, thus these districts are categorized as Region 5 (R5); the 5th ex-MMD was divided into the 9th and 10th SMDs, thus these districts are categorized as Region 6 (R6); and the 6th ex-MMD was divided into the 14th and 15th SMDs, thus these districts are categorized as Region 8 (R8).
- 3) The territory of the 11th SMD is included into that of the 9th ex-MMD, and a part of the 12th SMD is also included into the same MMD. The other part of the 12th SMD is included into the 10th ex-MMD, where the 13th, 16th, and 17th SMDs are also included entirely. Thus, these ex-MMDs and SMDs are given as Region 7 (R7).
- 4) The 18th, 19th, 21st, and 22nd SMDs are located across the 7th and 11th ex-MMDs, and the 20th SMD is entirely included into the 7th ex-MMD. The 23rd, 24th, and 25th SMDs are entirely included into the 11th ex-MMD. Thus, these ex-MMDs and SMDs are categorized as Region 9 (R9).



Figure A-1

Area rate of candidate's name: 7.7%

This is the manifesto of Kouki Kobayashi in the 10th district in Tokyo in the 2003 Lower House election. Kouki Kobayashi belonged to the LDP and was assigned as the Senior Vice-Minister of Finance for the Koizumi administration, and then he left the LDP and campaigned as a candidate of a new small party, Shinto-Nippon, in 2005.



Figure A-2

Area rate of candidate's name: 5.4%

This is the manifesto of Koichiro Watanabe in the 11th district in Tokyo in the 2003 Lower House election. Koichiro Watanabe belonged to Democratic Party of Japan (DPJ) in the 2003 election.

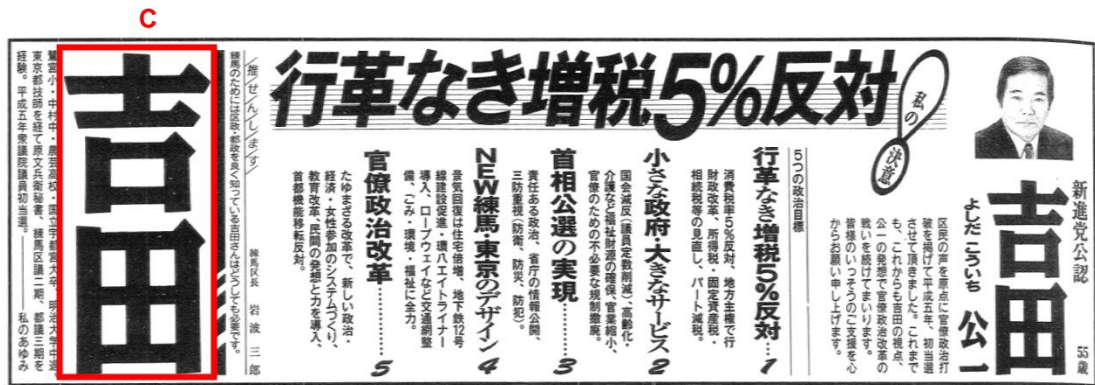


Figure A-3

Area rate of candidate's name: 13.1%

This is the manifesto of Koichi Yoshida in the 9th district in Tokyo in the 1996 Lower House election. He belonged to the New Frontier Party in the 1996 election, then the DPJ and served as the Vice-Minister of Agriculture, Forestry, and Fisheries for the Noda administration.

Figure A-4

Area rate of candidate's name: 3.4%

This is the manifesto of Akihiro Ohta in the 9th district in Tokyo in the 1993 Lower House election. Akihiro Ohta was the leader of Komeito Party in 2006–2009 and was assigned as the Minister of Land, Infrastructure and Transport for the Abe administration in 2012–2015.



Figure A-5

Area rate of candidate's name: 3.4%

This is the manifesto of Yutaka Tagawa in the 21th district in Tokyo in the 2003 Lower House election. He belonged to the Japanese Communist Party.



Figure A-6

Area rate of candidate's name: 3.4%

This is the manifesto of Toshie Yamamoto in the 10th district in Tokyo in the 2000 Lower House election. She belonged to the Japanese Communist Party.



Figure A-7

Area rate of candidate's name: 1.2%

This is the manifesto of Minoru Yoda in the 9th district in Tokyo in the 1983 Lower House election. He belonged to the New Liberal Club.

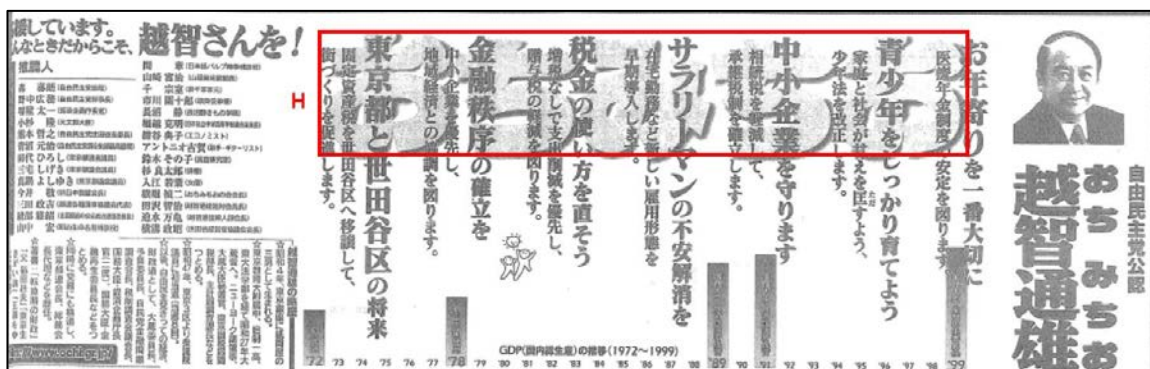


Figure A-8

Area rate of candidate's name: 3.4%

This is the manifesto of Michio Ochi in the 6th district in Tokyo in the 2000 Lower House election. He belonged to the LDP and served as the Minister of Economic Planning Agency for Uno and Kaifu administrations.

Mapping MMDs to SMDs of the Lower House in Tokyo												
		MMD										
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th
SMD	1st	R1										
	2nd								R2			
	3rd		R3									
	4th											
	5th			R4								
	6th											
	7th				R5							
	8th											
	9th					R6						
	10th											
	11th											
	12th											
	13th											
	14th						R8					
	15th											
	16th											
	17th											
	18th											
	19th											
	20th											
	21st											
	22nd											
	23rd											
	24th											
	25th											

Figure A-9

Mapping the ex-MMDs to the SMDs of the Lower House in Tokyo

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