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# Evidence from Municipal Council Elections in Switzerland

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# ABSTRACT

# What Contributes to an Attractive Local Political Office?
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Small-scale federal democracies depend on the active participation of individuals in local political office. Both anecdotal evidence and empirical studies across Western democracies indicate a growing difficulty in recent decades to recruit candidates for municipal offices. This study examines the impact of monetary compensation and workload on the supply of candidates for municipal councils, drawing on the economic theory of political selection. Using data from municipal elections in over 500 municipalities across three Swiss cantons since the 1970s, we apply two-way fixed effects models to analyze the relationship between compensation, workload, and candidate supply. Our findings show that higher salaries do not lead to more competitive local elections or longer terms in office. However, reducing the workload associated with municipal mandates appears to be a more effective strategy for increasing candidate supply, particularly in recruiting women.

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# 1 Introduction

The cornerstone of every democracy is the election to political office of competent, honest, and responsive representatives who take citizens' preferences into account in policymaking. This normative way of thinking about democracy is not confined to national politics, but extends across all levels of federal governance. The significance of political selection for local governance, however, often remains less salient despite the massive presence of local political offices in more or less federally organized states.[1] Despite its relative invisibility, the local level has by far the most political representatives; in the USA alone, over 500,000 individuals hold local political office, encompassing city-elected officials, township members, special district members and school board members, compared to a mere 537 at the national level (Poliengine 2022). Accordingly, the quality of democracy at the local level depends on there being a sufficiently large pool of well-qualified candidates who are willing to take on these offices. However, this, in turn, likely depends on the attractiveness of the mandates in terms of material and non-material benefits as well as the feasibility of reconciling political engagement with professional and private life.

Both anecdotal observations and empirical studies across various Western democracies indicate a growing challenge to recruit candidates for local offices, potentially resulting in either uncontested municipal elections or even vacant mandates.[2] Such conditions with little electoral competition in local elections limit the options for political selection and hamper electoral accountability (see, e.g., Besley 2006 on the advantages of competitive elections).

This study contributes to addressing the research question of how municipalities can foster local candidate supply. Focusing on municipal council elections in Switzerland, it investigates key economic conditions shaping the attractiveness of local mandates. Our analysis is based on data spanning municipal council elections in the three major and neighboring Swiss cantons Aargau, Lucerne and Zurich since the 1970s, covering 5,362 elections across 522 municipalities. We observe that time trends for candidate supply vary across cantons and municipality sizes. Overall, candidate numbers have tended to decrease over time, making it increasingly likely that municipalities face a shortage of candidates. At the same time, fluctuations within municipal councils have increased. In recent times, there is a consistent pattern of small municipalities tending to have fewer candidates, more

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[1]Consider the 90,837 local governments in the USA (Smaldone and Wright 2024), the 34,935 *Communes* in France (République Française 2024), the 10,754 *Gemeinden* in Germany (Statistisches Bundesamt 2024), the 7,896 *Comuni* in Italy (Tuttitalia 2024), or the 2,131 *Gemeinden* in Switzerland (Bundesamt für Statistik 2024) – all necessitating effective political leadership.

[2]Research by Marschall et al. (2017) analyzing nearly 8,000 mayoral elections across six major US states between 2000 and 2016 revealed that more than half of these elections were uncontested, featuring only one candidate running for office, and the proportion of unchallenged races has increased over time. *"Silent elections"* at the municipal level have also gained prevalence in European countries such as Italy, Austria, Poland, and The Czech Republic, as documented by Kouba and Lysek (2023). In 2021, seven Italian municipalities canceled local elections due to a short supply of candidates, and 217 municipalities, accounting for 16% of the total, had elections with only a single candidate running for mayoral office (Augusto et al. 2024). In Switzerland, a 2017 survey conducted among municipal clerks – the heads of the municipal administration – highlighted recruitment difficulties in over 50% of municipalities with populations of up to 2,000 residents, particularly concerning positions on the local executive (Steiner et al. 2021).

frequently experiencing an insufficient number of candidates, and exhibiting higher fluctuation rates than larger municipalities within the same canton. Additionally, we observe a positive bivariate correlation between the effective compensation per seat and the number of candidates, as well as a negative correlation with the fluctuation rate. However, observed high rates of compensation to municipal councilors are confined to large municipalities, limiting interpretation in terms of a causal link. Moreover, the (financial) attractiveness of a position depends on the compensation *and* the (expected) workload. The latter characteristic of a local mandate is often not known by the statistician trying to describe a mandate, but also only known to a limited extent by the political candidates. In many cases, this initial situation makes a differentiated empirical analysis of attractiveness factors in local mandates difficult. In our case, this applies to the analyses for the cantons of Aargau and Zurich, which remain descriptive. In contrast, we can undertake a multivariate analysis for the municipalities in the canton of Lucerne, as the average workload of municipal councilors can also be recorded there. In addition to compensation in full-time equivalents and the average workload of the municipal council mandate, we further explore (and statistically control for) factors such as municipality size, the organization of local democracy, and fiscal strength. All these factors might also influence the supply of candidates for these positions.

In line with expectations derived from the economic theory of political selection, we observe a clear positive correlation between compensation in full-time equivalents and the candidates-to-seats ratio, along with a negative correlation concerning the fluctuation rate in the cross-section. Municipalities offering higher wages for municipal councilors tend to attract more candidates and experience lower fluctuation rates or longer tenures in office. However, once we account for workload and municipality size, these statistical correlations diminish. It appears that larger municipalities, inherently possessing a larger pool of potential candidates relative to available seats, tend to offer better-compensated mandates with higher workloads. To address multicollinearity issues arising from these variables, we exploit longitudinal variation and estimate a two-way fixed effects model. Contrary to theoretical expectations, we do not find evidence suggesting that increasing wages for municipal councilors attracts more candidates or decreases fluctuations. However, our findings indicate that reducing the workload is associated with higher candidate numbers. The effect is sizable; reducing the average workload in a 5-seat municipal council by 10 percentage points is associated with roughly 0.5 additional candidates in the subsequent regular municipal council elections. Based on our results, reducing the workload of municipal councilors is more promising than increasing monetary compensation to increase local candidate supply, possibly by delegating more operational tasks to the municipal administration. We present anecdotal evidence that supports this finding. Regarding the fluctuation rate, we find that workload reductions are associated with less withdrawals and resignations, however, the statistical relationship is not precisely estimated.

This work contributes to three strands of literature (see also Section 2). Firstly, it contributes to the analysis of the impact of politicians' monetary remunerations on candidate supply (see, e.g., Besley

2004; Ferraz and Finan 2009; Dal Bó et al. 2013; Hoffman and Lyons 2013; Braendle 2015; Fisman et al. 2015). So far, there is still scant empirical evidence regarding the potential effectiveness of salary increases for municipal councilors in attracting: i) a sufficient number of candidates, and ii) candidates willing to undertake a long-term tenure (captured in terms of a low fluctuation rate). Specifically, to our knowledge, we are the first to capture the financial attractiveness of municipal executive positions by simultaneously considering imputed full-time compensation and the workload of local council positions.[3] Secondly, this research adds to a broader literature examining the influence of "local conditions" apart from compensation shaping local political selection. Concretely, we investigate how municipality size, building upon works by Marschall et al. (2017), Kouba and Lysek (2023), and Steiner et al. (2021), and the fiscal strength of a municipality relate to the number of candidates and the fluctuation in municipal executives. Thirdly, this study complements previous work examining the effects of local democratic institutions on political outcomes, notably observed in Switzerland. In research comparing citizen assemblies with local parliaments the focus so far has been on differences in political interest (Ladner and Fiechter 2012) and economic policy outcomes (see, e.g., Feld and Kirchgässner 2000; Funk and Litschig 2020). Our analysis focusing on the relationship between local democracy and the supply of candidates for municipal executive positions explores a possible mechanism for observed differences in policy outcomes.

The subsequent parts are organized as follows. Section 2 reviews the literature on political selection, focusing on the theoretical and empirical evidence on compensation and local candidacy. We also derive the hypotheses to be tested in our empirical analysis. Section 3 presents the data and descriptive evidence on local candidate supply in Switzerland. Section 4 explains the empirical strategy and presents the results of the study. Section 5 provides a discussion of the results and Section 6 concludes.

## 2  Literature review and hypotheses

### 2.1  Economic and contextual determinants of political candidate supply

The determinants of political selection have been the focus of a substantial body of literature, encompassing both theoretical and empirical analyses (see Braendle and Stutzer 2019 or Carnes and Lupu 2023 for reviews). A central theme within this literature concerns the impact of politicians' monetary remunerations on the size and the composition of the candidate pool as well as the elected body of public officials. In their citizen-candidate model, Osborne and Slivinski (1996) put forth the prediction that the equilibrium total number of individuals in the candidate pool is positively affected by the rewards associated with winning, with monetary remuneration being one central component.[4] Dal Bó

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[3]For example, Hoffman and Lyons (2013) broadly differentiate between full-time and part-time mandates and consider session length in days and legislative support staff to proxy the workload and the level of professionalization in US state parliaments.

[4]Non-monetary rewards from winning could include, for instance, reputational gains (Caselli and Morelli 2004) or the utility derived from serving the public, as proposed by Weber (2004).

et al.'s (2013) model also implies that higher compensation increases the size of the candidate pool. Furthermore, the attractiveness of running for re-election and pursuing a career in politics is higher with higher political salaries. This is why citizen-candidate models typically converge on the key point that increased salaries for politicians tend to reduce office turnover (e.g., Besley 2004; Mattozzi and Merlo 2008). However, there is also the mechanism that with increased electoral competition due to higher salaries, the likelihood of incumbent re-election decreases, potentially leading to higher office turnover (see, e.g., Ferraz and Finan 2009).

Regarding the quality aspect of political selection, Besley's (2004) political agency model on endogenous candidacy, which applies primarily to contexts with term limits, predicts that higher wages in politics lead to greater congruence between politicians and voters in terms of policy choices. This result arises from a twofold effect: a selection effect (attracting higher-quality candidates) and a discipline effect (making incumbency more attractive). Similarly, Caselli and Morelli's (2004) citizen-candidate model predicts that higher political salaries, relative to outside opportunities, increase the competence of the elected body of politicians. However, a more nuanced perspective arises when the public sector motivation of candidates is considered. As highlighted by Besley (2005), increasing formal compensation may attract more extrinsically motivated people (primarily interested in rents) to the pool of candidates, thus lowering the share of those with strong public sector motivation. This could ultimately diminish the quality of the elected representatives and, in turn, of political outcomes and economic policies.

The two central theoretical predictions on compensation and candidate supply, namely a larger candidate pool and less office turnover, with the latter being more ambiguous, as discussed above, have been subjected to empirical studies across a range of contexts, providing mixed evidence. Ferraz and Finan (2009) exploit population thresholds generating exogenous variation in municipal politicians' salaries across local governments in Brazil to investigate whether higher salaries attract more individuals, and particularly those with higher levels of education, to run for local political office. The findings indicate that a 10% increase in local government salaries leads to a 0.27 increase in the number of candidates per seat (with a mean number of candidates per seat equal to 6.1), primarily driven by individuals who are highly educated. Although to a much smaller extent, Hoffman and Lyons (2013) also find a positive wage-effect on the number of candidates among US state legislatures. According to their results based on a panel for US states, a 10% increase in pay for state legislatures is associated with 0.005 more candidates per seat (with a mean of 1.93 candidates) and a 0.25 %-point increase in the probability that the election is contested. Additionally, the authors examine the number of candidates in gubernatorial primaries, but not in regular elections for governors, as the regular election typically always has exactly two candidates (i.e., one Democrat and one Republican), leading to no variation in candidate numbers. In this context, there appears to be no positive effect of higher wages on the number of candidates running in the gubernatorial primaries. By exploiting a large-scale, centralized wage increase for Italian mayors in 2021 (i.e., +42% on average), which affected all

municipalities simultaneously but with local elections occurring at different times, Augusto et al. (2024) utilize a shifted difference-in-differences design. They find that a 10% increase in wages results in a statistically and economically insignificant change in the number of candidates, with an estimated effect of -0.008. Fisman et al. (2015) find that exogenous pay raises for members of the European Parliament due to a harmonization reform in 2009 is linked to a higher proportion of incumbents seeking re-election and a lower likelihood of quitting before their term ended. According to their results, a 10% increase in wages is associated with a 2.3 percentage point higher likelihood of seeking re-election. While the study could not directly assess the effect of salary increases on the overall number of candidates running for political office in the European Parliament (due to the prevalence of closed-list electoral systems in many member countries), the authors show that more parties nominated candidates following a salary increase. Studying the same reform, Braendle (2015) provides evidence that higher pay not only makes running for re-election more attractive (as found by Fisman et al. 2015), but also leads to higher re-election rates. This finding could be attributed to in-office discipline effects associated with higher political salaries.[5]

In addition to the research on political pay, a sizable research literature examines the impact of various contextual factors on political selection. These encompass financial disclosure laws (e.g., Fisman et al. 2016) and other monitoring institutions (e.g., Grossman and Hanlon 2014), the level of municipal autonomy and discretionary leeway of politicians (e.g., Revelli 2016; Bordignon et al. 2020; Peralta and dos Santos 2020; Gamalerio and Trombetta 2021), electoral rules (e.g., Beath et al. 2016) and the competitiveness of elections (i.e., Paola and Scoppa 2011), gender quotas (e.g., Lassébie 2020), and how political offices are promoted and portrayed (e.g., Gulzar and Khan 2023).

Finally, there is a distinct strand of literature that explores the influence of local democratic institutions on political outcomes. In the Swiss setting, the focus is often on decision-making in citizen assemblies compared to local parliaments, and how this, for example, shapes political interest and electoral turnout (Ladner and Fiechter 2012). The prevailing theoretical frameworks emphasize that citizen assemblies, compared to local parliaments, enhance the diffusion of information among citizens and provide voters with the opportunity to directly decide on policy proposals and their implementation. Furthermore, how these institutions affect economic policy outcomes, including public expenditure and public debt levels, is examined. A review can be found in Feld and Kirchgässner (2000) and more recent evidence in Funk and Litschig (2020). How this aspect of local democracy may influence the selection of individuals running for local executive positions has, however, not been addressed yet.

## 2.2 Hypotheses

**Compensation and size of the candidate pool**

Higher rewards from winning are expected to increase the number of candidates in the pool, as it

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[5]Further noteworthy empirical studies not explicitly discussed in this paper are Kotakorpi and Poutvaara (2011); Gagliarducci and Nannicini (2013); Carnes and Hansen (2016); Dal Bó et al. (2017) and Caria et al. (2023).

increases the expected benefit associated with running for political office. As a direct consequence, attractive salaries are also expected to reduce the likelihood of short supply. It is crucial to note that we determine the number of candidates and, consequently, the probability of an insufficient number of candidates in the first round of the municipal council election. The reason is that if there are too few candidates in the initial round, an active search for the candidates needed typically ensues. This involves publicizing the vacancy through local media or local authorities actively approaching individuals to convince them to run for office. Through these efforts, it is usually possible to find enough candidates for the second round. This is why we focus on the first round and formulate the following two hypotheses:

***H1) Higher monetary compensation for municipal council positions lead to a greater number of candidates running for office in the first round of a municipal council election.***

***H2) Higher monetary compensation for municipal council positions lowers the probability of an insufficient number of candidates for the available seats in the first round of a municipal council election.***

We briefly consider two potential counterarguments to the above hypotheses. Firstly, serving in a local office and contributing to the local community involves intrinsic motivation. It is conceivable that higher salaries attract more extrinsically motivated individuals while deterring intrinsically motivated ones, according to the sorting argument in motivation crowding theory (see, e.g., Frey and Jegen 2001); for an application in the context of volunteering in Switzerland, see Frey and Goette 1999). According to the same theory, introducing small monetary incentives, i.e., increasing financial rewards from 0 to a modest amount, can result in a crowding-out of intrinsic motivation dominating the relative price effect (for a discussion of the relevant literature, see Gneezy et al. 2011). The corresponding prediction would be that this leads to fewer candidates. However, municipal council positions offer at least some financial compensation in every municipality in our setting for Switzerland (Freitag et al. 2019). Accordingly, a crowding-out effect of a pay rise that is stronger than the relative price effect is unlikely in this context.

Secondly, it could be argued that at the local level, the salaries offered to politicians may have limited salience, dampening their supply-side effects. However, both anecdotal and systematic empirical evidence indicate that there are information intermediaries. In particular, there is the continued significance of local political parties in municipal candidate nomination. As documented by Steiner et al. (2021), approximately 62% of Swiss municipalities have local party sections or retained municipality-specific parties in 2017. In the presence of local parties actively participating in local politics, the party leader of a retiring municipal councilor often becomes active to nominate a party member to fill the vacant seat. This involves the active search for interested successor candidates and the passing

on of crucial information about the mandate, including details about salary and workload. Even in municipalities where local parties may be absent or inactive, it seems plausible to assume that the information flow regarding the compensation for a local political mandate is assured. Local authorities frequently engage in proactive searches for suitable candidates (Geser et al. 2011; Freitag et al. 2019), and such candidates are likely to be informed about the conditions of the office.[6]

**Compensation and fluctuation rate**

In citizen-candidate models, the attractiveness of running for re-election and pursuing a career in politics is heightened when political salaries increase (i.e., Besley 2004; Mattozzi and Merlo 2008), i.e., higher political salaries are associated with reduced office turnover. This reduction comes from the increased willingness of incumbents to remain in office. Combined with the ex ante selection and in-office discipline effects resulting from higher salaries, this leads to a higher likelihood of re-election. However, we do not analyze office turnover since the probability of re-election is influenced by demand and voter preferences, respectively. Instead, we concentrate on the fluctuation rate, exclusively driven by voluntary withdrawals within or at the end of a term of office, capturing primarily the supply-side effect of compensation on tenure decisions. Consequently, we can posit the following hypothesis:

*H3) Higher monetary compensation for municipal councilors lowers the fluctuation rate during a legislative term, as measured by a reduction in voluntary withdrawals per seat during or at the end of the term.*

**Other determinants**

The impact of other potential determinants such as the workload associated with the position, municipality size, and the organization of local democracy on municipal candidate supply is less clear from a theoretical perspective. Municipal council mandates with smaller workloads might appeal to individuals seeking to dedicate a significant portion of their week to other activities, such as other employment or childcare. Conversely, such mandates may be less appealing to those for whom the municipal council position serves as the primary source of income or who perceive it as a career opportunity and prefer not to supplement it with additional employment. Therefore, the net effect of workload reduction on the number of candidates should be driven by the relative proportion of individuals in the municipality who prefer a lower workload over a higher one. Regarding size, Dahl and Tufte (1973) posit in their book 'Size and Democracy' that residing in a small community fosters a stronger sense of connectedness and belonging, positively influencing willingness to engage in local politics. However, an opposing view suggests that smaller communities may have a limited natural

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[6]The first major survey of all executive members at municipal level in Switzerland shows that in municipalities with under 2000 inhabitants not even 20% of all municipal councilors surveyed applied for the office on their own initiative, but rather because they were asked to do so (Geser et al. 2011).

candidate pool due to residency requirements for a municipal council mandate. Currently, empirical evidence leans towards the latter argument (e.g., Marschall et al. 2017; Kouba and Lysek 2023; Steiner et al. 2021). Similar ambiguity exists in the theoretical relationship between the organization of local democracy and candidate supply. A municipal assembly fostering direct dialogue and proximity to citizens might enhance satisfaction with the office. However, it could also be experienced as a platform requiring 'difficult' discourses, possibly involving harsh criticism or insults and personal attacks against municipal council members. Personal experiences with municipal assemblies might thus contribute to shorter tenures, increasing fluctuation. Due to these competing hypotheses, the impact of these determinants on local candidate supply remains an empirical question that we address in following an exploratory approach.

## 3 Data

### 3.1 Data and descriptive evidence on local candidate supply

The data used for analyzing municipal council elections in the cantons of Aargau, Lucerne, and Zurich come from various sources. Dlabač and Gilardi (2017) aggregated information from the election protocols of these municipal council elections, collecting candidates' names per municipality and election date, their gender, their vote counts, and whether they were elected. This dataset systematically encompasses regular municipal executive elections (mostly every four years) and replacement elections (replacing a withdrawing member during a legislative period) from the early 1970s up to 2013 for the canton of Aargau, up to 2012 for the canton of Lucerne, and up to 2014 for the canton of Zurich. To supplement more recent elections (i.e., the elections 2017 and 2021 for Aargau, 2016, 2020 and 2024 for Lucerne, and 2018 and 2022 for Zurich), we independently collected additional data by drawing on election protocols and contemporary newspaper reports.[7] It is important to note that we only collected protocol information of regular elections, but not replacement elections. To record withdrawals from office between regular elections, we referred to cantonal lists in Aargau and Lucerne documenting withdrawals from the municipal council per legislative period and municipality (Gemeindeabteilung des Kantons Aargau 2023; Amt für Gemeinden Kanton Luzern 2023; Verband Luzerner Gemeinden 2023). This method allowed the tracking of fluctuations in municipal councils between regular elections in

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[7]Information regarding the 2017 and 2021 municipal elections in the canton of Aargau was gathered from newspaper articles, primarily sourced from the *Aargauer Zeitung* and its regional papers, accessed through *Swissdox essentials* (Aargauer Zeitung 2017, 2021; the respective articles are available upon request). The election protocols for municipal elections in the canton of Lucerne from 2012 onwards were collected by the Verband Luzerner Gemeinden (2023), an entity responsible for collecting and archiving such municipal records. In the canton of Zurich, protocols for the 2018 election were obtained from individual municipal administrations upon request via email (Wahlprotokolle Gemeinden Zürich 2018), yielding a response rate of 94%. Furthermore, data for the most recent 2022 election in the canton of Zurich was compiled from municipal protocols by the Zurich Statistical Office, consolidated into a publicly accessible dataset that was used for this project (Statistisches Amt des Kantons Zürich 2023a). To access the dataset, see https://opendata.swiss/de/dataset/archiv-wahlresultate-gemeindebehorden-im-kanton-zurich.

more recent legislative periods as well. Unfortunately, the approach could not be replicated for the canton of Zurich, as withdrawals of members of municipal authorities do not have to be reported to the canton. Overall, the dataset comprises 5,362 local elections across 522 distinct municipalities.[8]

With the compiled dataset, it becomes feasible to study candidate supply in municipal council elections over an extensive period dating back to the 1970s. Specifically, we construct the following three variables:

i)  *candidates-to-seats ratio$_{m,t}$*   $= \dfrac{\sum_{i=1}^{I} candidate_{i,m,t}}{seats_{m,t}}$

ii)  *sufficient candidates$_{m,t}$*   $= \begin{cases} 1 & \text{if } \sum_{i=1}^{I} candidate_{i,m,t} \geq seats_{m,t}, \\ 0 & \text{otherwise} \end{cases}$

iii)  *fluctuation rate$_{m,t}$*   $= \dfrac{\sum_{i=1}^{I} (withdraw_{i,m,t} + resign_{i,m,t})}{seats_{m,t}}$

$\qquad\qquad\qquad\qquad\qquad = \dfrac{\sum_{i=1}^{I} withdraw_{i,m,t} + seats_{m,t} - \sum_{i=1}^{I} previous_{i,m,t}}{seats_{m,t}}$
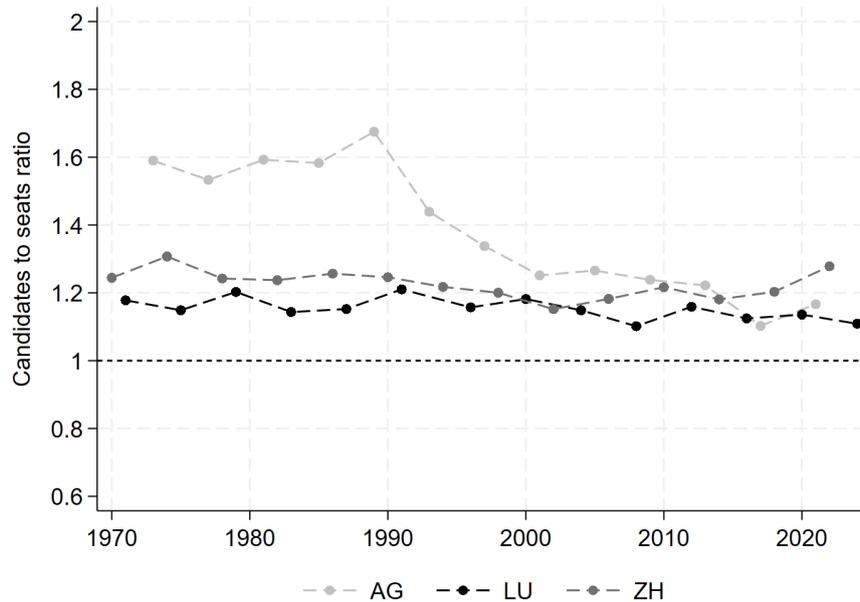
The *candidates-to-seats ratio* measures the average number of individuals running for a seat in the municipal council. Its calculation involves dividing the number of candidates *i* participating in the first round of a municipal council election in year *t* by the total number of available seats in municipality *m*. The case of having enough candidates in the first round is modeled by the dummy variable *sufficient candidates* taking the value 1 if the number of candidates is at least as high as the number of available seats, and 0 otherwise. The *fluctuation rate* is defined as the ratio of municipal council members *i* who have voluntarily left office to the total number of seats per municipality within a legislative period (related to the election at the end of the legislative period in year *t*). Voluntary exits from office occur in two ways: through early withdrawal before the subsequent regular election *(withdraw)* or by choosing not to seek re-election at the subsequent regular election *(resign)*. The count of resigning council members is derived by subtracting the number of council members seeking re-election *(previous)* from the total number of available seats.

Figure 1 shows the candidates-to-seats ratio averaged across municipalities per canton and election year. In the cantons of Zurich and Lucerne, this ratio is relatively stable over the past five decades. On average, in a Lucerne municipality, approximately 1.15 candidates compete for one municipal council seat, whereas in the canton of Zurich, the figure slightly exceeds this, with about 1.2 candidates for

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[8]The number of municipalities sampled within each canton fluctuates across election years: for Aargau, an average of 156 municipalities are covered per election (total as of 2021: 210); in Lucerne, the average is 81 municipalities (total as of 2024: 79); and in Zurich, the average is 158 municipalities (total as of 2022: 162). Table A1 in the Appendix shows descriptive statistics of the dataset separately for each canton.

each seat. In contrast, municipalities within the canton of Aargau record more pronounced changes over time. From approximately 1.6 candidates per seat in the early 1990s, this number declined to just under 1.2 in 2021, and thus to a level similar to that in the other two cantons.

Figure 1: Candidates-to-seats ratio in municipal council elections between 1970 and 2024



*Notes:* This figure shows the average of the candidates-to-seats ratio in municipal council elections for Aargau (AG), Lucerne (LU) and Zurich (ZH).
*Data sources:* See Appendix B.

Instead of considering the number of candidates, if we now look at the proportion of municipalities that have a sufficient number of candidates in the first round (Figure 2), we observe that not having enough candidates was very rare before the 2000s but has become more likely in the last two decades. However, this trend is much more pronounced in municipalities within the canton of Aargau. For instance, approximately 11% of Aargau municipalities encountered an insufficient number of candidates in the 2021 municipal council election, necessitating a second round of voting. In contrast, it is notably less prevalent in Lucerne, with only 3% of municipalities experiencing too few candidates running for municipal council in 2024, and even less so in Zurich in 2022 (i.e., around 2% of municipalities).

Figure 3 depicts the average candidates-to-seats ratio categorized by municipality size based on the average end-year population per municipality over the observation period. Panel (a) reveals that the striking decline among municipalities in the canton of Aargau is primarily driven by small municipalities. Specifically, municipalities with populations of fewer than 5,000 had an all-time high of 1.7 candidates per seat in the 1989 election, which decreased to 1.1 in the 2021 election. Conversely, larger municipalities with 10,000 or more inhabitants do not show a downward trend in the number of

Figure 2: Share of municipalities with sufficient candidates in municipal council elections between 1970 and 2024
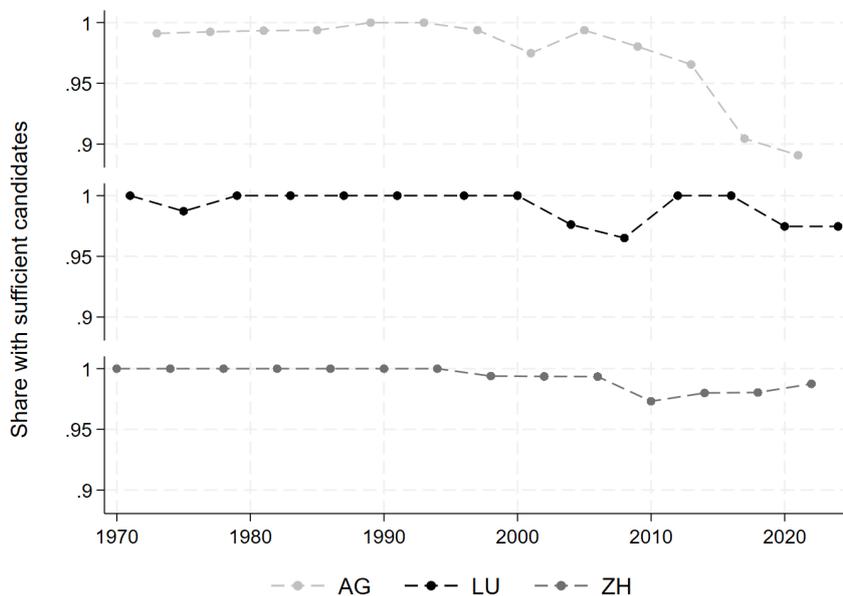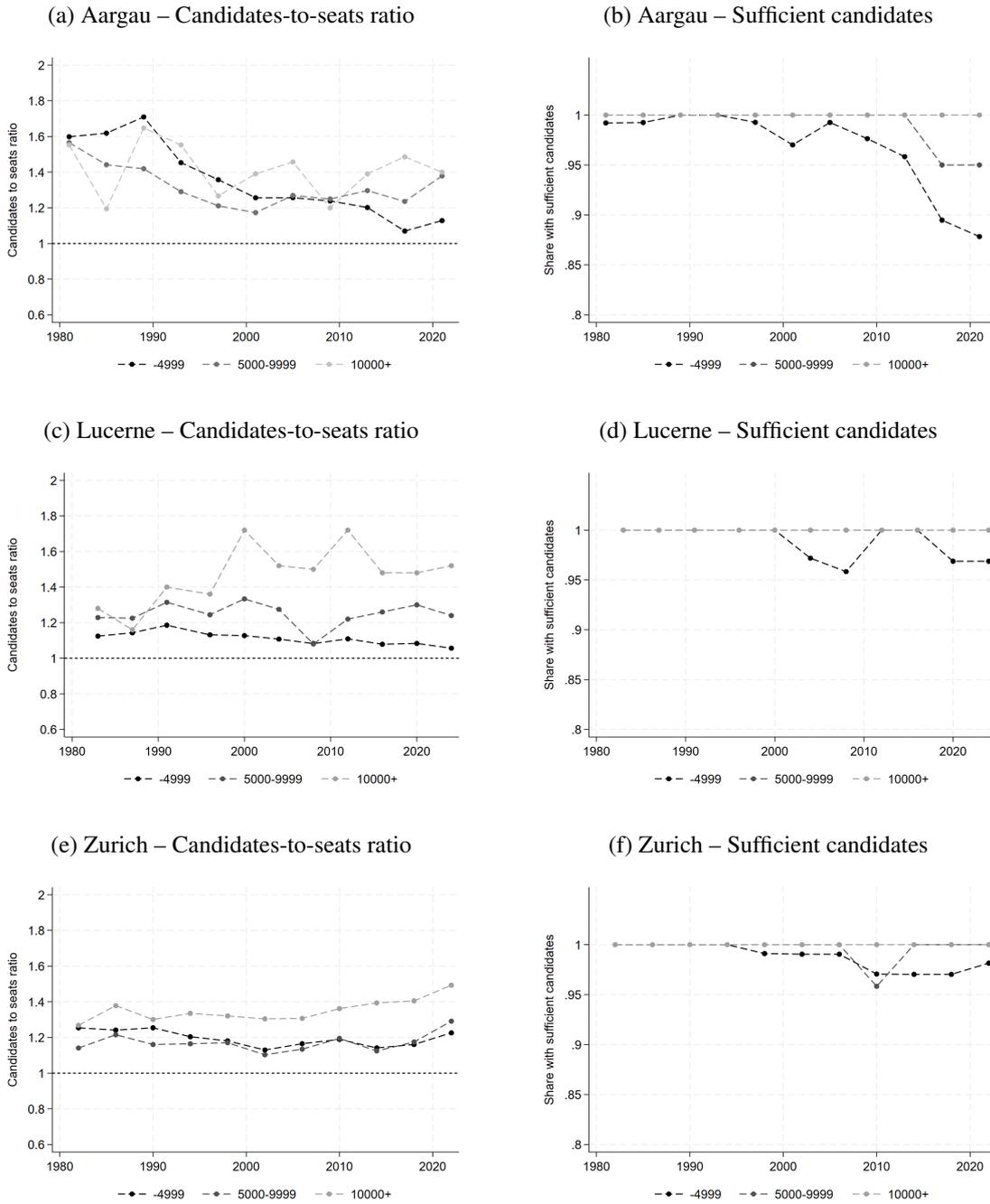


*Notes:* This figure shows the share of municipalities with a sufficient number of candidates in municipal council elections for Aargau (AG), Lucerne (LU) and Zurich (ZH).
*Data sources:* See Appendix B.

candidates. A similar yet less pronounced development is observed in the canton of Lucerne in Panel (c). Here, small municipalities, i.e., those with fewer than 5,000 inhabitants, have also experienced a decline in candidate numbers since the 1990s, while larger municipalities have tended to witness an increase. In the canton of Zurich in Panel (c), candidate numbers remain relatively stable among small municipalities, while for the large ones a slight upward trend is observed and clearly the highest candidates-to-seats ratio. It is notable that in all three cantons, the more recent elections have shown a positive correlation between the candidates-to-seats ratio in local elections and the population size of municipalities, a pattern not clearly evident in the 1990s and prior.

We observe similar patterns when considering the proportion of municipalities that have a sufficient number of candidates in the first round, categorized by municipality size in Panels (b, d, f) of Figure 3. In particular, it is the small municipalities that are sometimes faced with an insufficient number of candidates. In the canton of Aargau, this issue is most prevalent, where approximately 12% of the small municipalities (18 out of 145) did not have enough candidates in the first round during the 2021 municipal elections, thus requiring a second round. Similarly, in the cantons of Lucerne and Zurich, the likelihood of having too few candidates is a phenomenon among smaller municipalities, although to a much lesser extent than in the canton of Aargau.

Figure 3: Candidate supply in municipal council elections by municipality size since 1980

<table>
<tr><td>(a) Aargau – Candidates-to-seats ratio</td><td>(b) Aargau – Sufficient candidates</td></tr>
</table>



(a) Aargau – Candidates-to-seats ratio



(b) Aargau – Sufficient candidates



(c) Lucerne – Candidates-to-seats ratio



(d) Lucerne – Sufficient candidates



(e) Zurich – Candidates-to-seats ratio



(f) Zurich – Sufficient candidates

*Notes:* The left-hand panels (a, c, e) show the average of the candidates-to-seats ratio in municipal council elections by municipality size. The right-hand panels (b, d, f) show the unweighted share of municipalities with a sufficient number of candidates in municipal council elections by municipality size.

*Data source:* See Appendix B.

Figures 4 and 5 present descriptive statistics of the fluctuation rate in the municipalities of the cantons Aargau and Lucerne. Overall, fluctuations in municipal councils have increased over time in both cantons. Still, some distinct patterns do emerge between large and small municipalities. It is the group

of smaller municipalities where fluctuation has changed most. On average, since the year 2000, small municipalities across both cantons display a notably higher fluctuation rate (i.e., approx. 0.4) compared to large municipalities (i.e., approx. 0.3). This difference is also a reflection of the typical duration of service on a municipal council. Based on Little (1961)'s law, the average time spent in a stationary system equals the long-term average of people in the system divided by the average arrival rate. Applied to a 5-member municipal council (most common), a fluctuation rate of 0.4 implies an arrival rate of 2 new members per legislative term, while a rate of 0.3 corresponds to 1.5 entries. Supposing an equilibrium fluctuation rate of 0.4 for small municipalities and 0.3 for large municipalities, and assuming that council members withdraw solely at the end of their term with a 100% re-election probability for remaining members, the average tenure length would approximate 3.33 legislative periods or approximately 13 years for large municipalities, whereas for small municipalities it would be 2.5 periods or 10 years. While this approximation does not capture the exact average tenure length, being overestimated for withdrawals during the term and voting outs in regular elections (even though this probability is quite low), it clarifies the relationship between a higher fluctuation rate and shorter tenures on the municipal council.
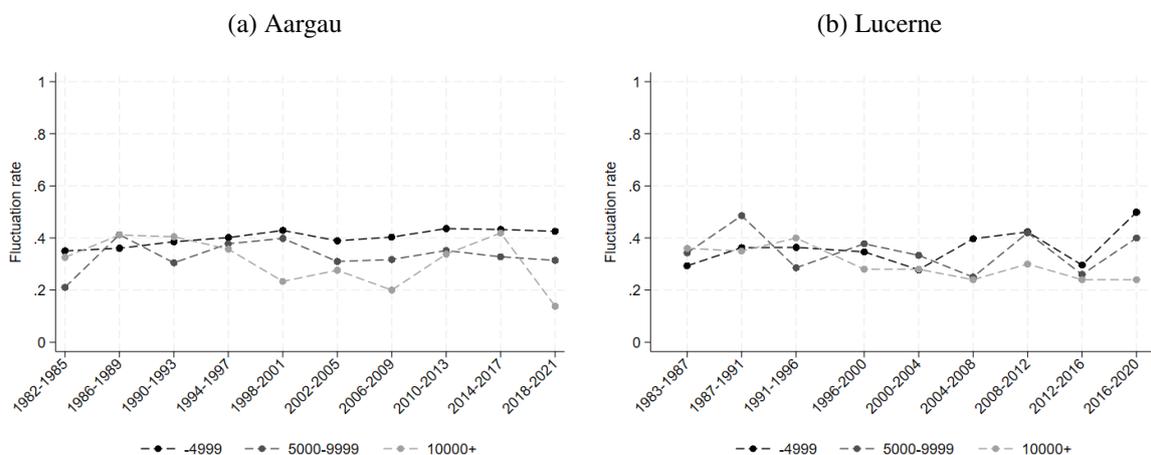
Figure 4: Fluctuation rates in municipal councils by legislative periods since 1970
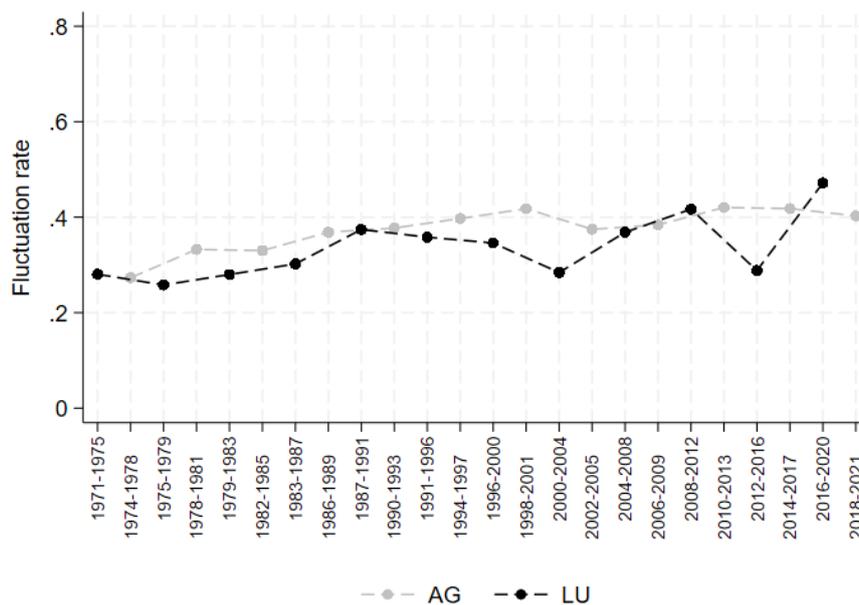


*Notes:* The figure shows the unweighted average of the fluctuation rates in municipal councils by legislative period for the cantons Aargau (AG) and Lucerne (LU).
*Data sources:* See Appendix B.

Figure 5: Fluctuation rates in municipal councils by municipality size and legislative period

(a) Aargau            (b) Lucerne



*Notes:* The figure shows the unweighted average of the fluctuation rates in municipal councils by legislative period and municipality size for the cantons Aargau and Lucerne.
*Data source:* See Appendix B.

## 3.2    Data and descriptive evidence on the compensation of local councils

The data regarding municipal council compensation is sourced from the municipalities' annual financial reportings, collected and digitized by the respective cantonal statistical offices (i.e., Statistik Aargau 2023; LUSTAT Statistik Luzern 2023; Statistisches Amt des Kantons Zürich 2023b). These reports include a dedicated account documenting total expenditures for the entire municipal council per year, encompassing salaries (excluding contributions to social insurances), allowances, and council meeting fees for all council members together.[9] As this uniform account practice is maintained across municipalities in the cantons of Aargau, Lucerne, and Zurich, it allows for a comparative analysis of average compensation for municipal councilors across municipalities, even from different cantons.[10] The compensation data is available for the canton of Aargau from 2014, for the canton of Lucerne from 1992, and for the canton of Zurich from 2011 onwards.[11] We deflate compensation to municipal councils to the price level in 1992 throughout.

Figure 6 reveals a clear positive relationship between the compensation per municipal council seat and municipality size during the municipal council elections in 2021 (Aargau), 2020 (Lucerne), and

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[9]Non-salary-related benefits municipal councilors potentially receive, such as expenses for food or transportation, are booked via other accounts and are therefore not included in our measure of compensation.

[10]The municipality of Emmen in the canton of Lucerne is a special case in which, for unknown reasons, the specific account documenting the councils total compensation is no longer shown in the annual financial statements from 2009 to 2017. To address this gap, we rely on a report from the municipality of Emmen, listing salary expenses for the municipal council since 2008. To maintain continuity and avoid a potential structural break, we utilize the last available value from the 2008 annual financial statements and impute values linearly based on the annual change in municipal council salaries documented in the report. Additionally, we had to exclude the municipality of Niederrohrdorf in the canton of Aargau due to implausibly low values.

[11]This coincides with the digitization of municipal accounts by the statistical offices.

2022 (Zurich). In addition, municipalities in Lucerne with populations below 50,000 inhabitants notably offer significantly higher compensation for a municipal council mandate compared to equivalently sized municipalities in the cantons of Aargau and Zurich.

Figure 6: Monetary compensation per seat by municipality size
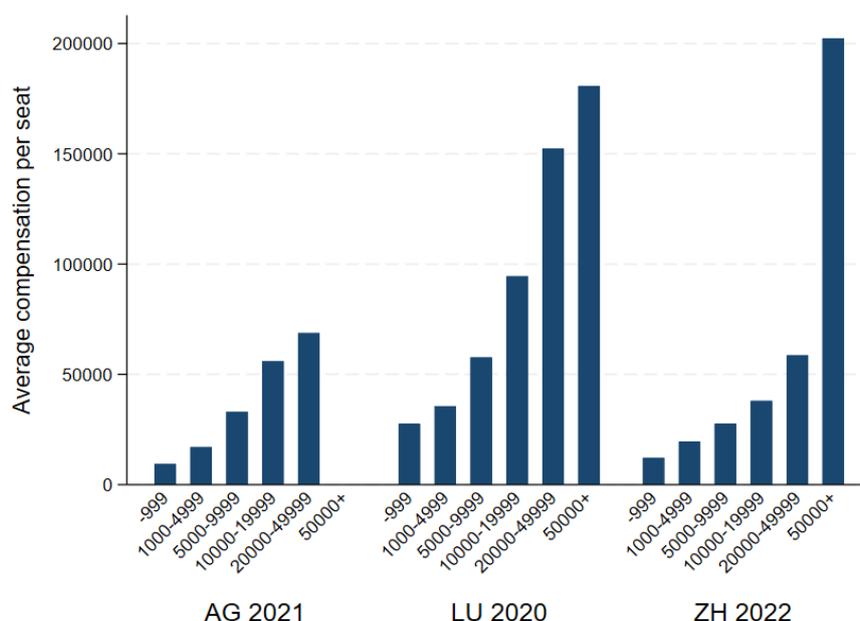


*Notes:* The figure shows the yearly compensation (deflated to prices in 1992) for an average municipal council member in the municipal council elections in the cantons Aargau (AG) in 2021, Lucerne (LU) in 2020, and Zurich (ZH) in 2022 by municipality size.
*Data sources:* See Appendix B.

The strong correlation between compensation per seat and population is not surprising, considering that the workload for municipal councilors likely scales with the municipality's size. Therefore, it is sensible to compute compensation per seat in full-time equivalents. However, particularly in small and medium-sized municipalities councilors are often paid with flat-rate compensation lacking a fixed workload (see, e.g., Dlabac et al. 2014; Steiner et al. 2021). This compensation structure is predominant in the municipalities of Aargau and Zurich, rendering it impractical to compute salaries in full-time equivalents for most municipalities in these cantons. Conversely, in the canton of Lucerne, all municipalities set a specific workload for municipal councilors due to cantonal regulations. Surveys among municipal clerks conducted by Bürkler and Lötscher (2014) and Ladner et al. (2021) gather data on the total municipal council workload for the years 1994, 2005, 2009, 2013, and 2017, enabling the calculation of compensation in full-time equivalents for municipalities within Lucerne.[12]

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[12]During the data cleaning process, we reached out to current municipal clerks in selected municipalities to verify the total workload of the municipal council in specific years. This step aimed to identify and rectify any implausible values

Figure 7 shows the compensation per seat in relation to the workload for the sample of Lucerne municipalities in 2017. 'Effective' refers to the compensation that is actually paid out. The 'full-time markup' represents the additional earnings per seat if the workload were at 100%. The sum of these bars is the imputed compensation per seat in full-time equivalents. There is a positive correlation between municipality size and full-time compensation, indicating that small municipalities tend to offer lower hourly wages for the municipal council mandate compared to larger counterparts. However, the city of Lucerne, the sole municipality with over 50,000 inhabitants paying an effective full-time salary for city councilors, exhibits a lower wage than an average municipality with 10,000+ inhabitants.

Figure 7: Imputed annual compensation per seat in full-time equivalents by municipality size in the canton of Lucerne in 2017
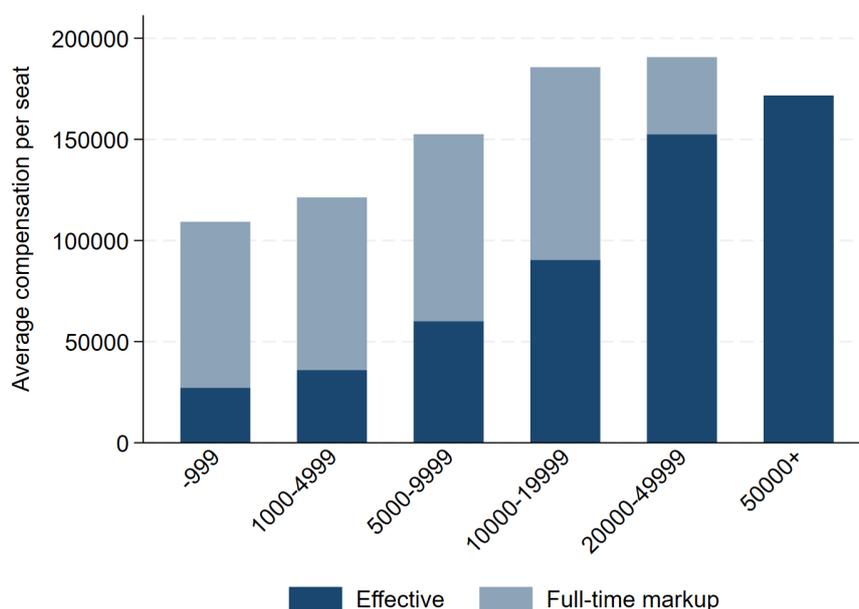


*Notes:* The figure shows the yearly imputed compensation for an average municipal council member in full-time equivalents (deflated to prices in 1992) across Lucerne municipalities in 2017 by municipality size. The bars labeled 'effective' indicate the compensation actually paid out per seat. The light blue bars show what the hypothetical markup if the municipal councilors had a 100% workload instead of the actual one.
*Data sources:* See Appendix B.

In the canton of Lucerne, as well as in Aargau and Zurich, municipalities act autonomously in determining the compensation for municipal councilors. Generally, this compensation is outlined

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that we came across. As a result of this effort, 38 values pertaining to the total workload of the municipal council from 30 municipalities were adjusted or set to missing. For further details on the adjusted values and the correspondence with municipal clerks to validate the adjustments, please contact the authors.

in salary regulations (*Besoldungsreglement*), proposed by the municipal executive and subsequently adopted or adjusted by the municipal legislative, which holds the ultimate authority in deciding on the councilors wages. This local legislative body could be the municipal assembly, the municipal parliament, or the matter could be decided by the people through a direct vote. Sometimes, changes may also arise from decisions in votes on popular initiatives proposed by a party or another political group that received majority support, for example, in the city of Lucerne in 2015 (Wolf 2015).

## 3.3 Descriptive evidence on the association of effective compensation and local candidate supply

We start by examining the simple bivariate correlation between the effective compensation per seat and the candidates-to-seats ratio as well as the fluctuation rate. Figure 8 illustrates these correlations for the municipal council elections in 2021 (Aargau), 2020 (Lucerne), and 2022 (Zurich) and the legislative periods 2018/21 (Aargau) and 2016/20 (Lucerne), respectively. In Panel (a), a distinctly positive and strong correlation between compensation and the number of candidates is evident. The graph also reveals a positive correlation between the level of compensation and the probability of attracting enough candidates. It is noteworthy that a majority of municipalities with a ratio of candidates to seats of less than 1 in the last election provide an annual compensation of less than CHF 25,000. This mainly affects municipalities in the canton of Aargau. In Panel (b), a negative correlation between the compensation per seat and the fluctuation rate is observed, although it is not very pronounced.

Overall, these patterns might suggest that a financially more attractive mandate is linked to a higher number of candidates and a lower fluctuation, or longer tenure on the municipal council. However, it is important to emphasize that a high effective compensation per seat does not necessarily indicate a well-paid mandate, as higher effective compensation is typically associated with a greater workload. Furthermore, as previously established in Figure 6, effective compensation exhibits a strong correlation with municipality size, which could be an important municipal characteristic shaping the competitiveness of local elections. To assess the role of the attractiveness of a council mandate in local political engagement, we try to establish the *ceteris paribus* condition, i.e., we ask whether for given workloads and other municipal characteristics higher wages attract more candidates who remain in office for longer durations. Since systematic workload data is available only for municipalities of Lucerne, the subsequent multivariate empirical analysis in Section 4 focuses on these municipalities.

Figure 8: Relationship between effective compensation per seat and candidate supply in municipal council elections



(a) Candidates-to-seats ratio

(b) Fluctuation rate
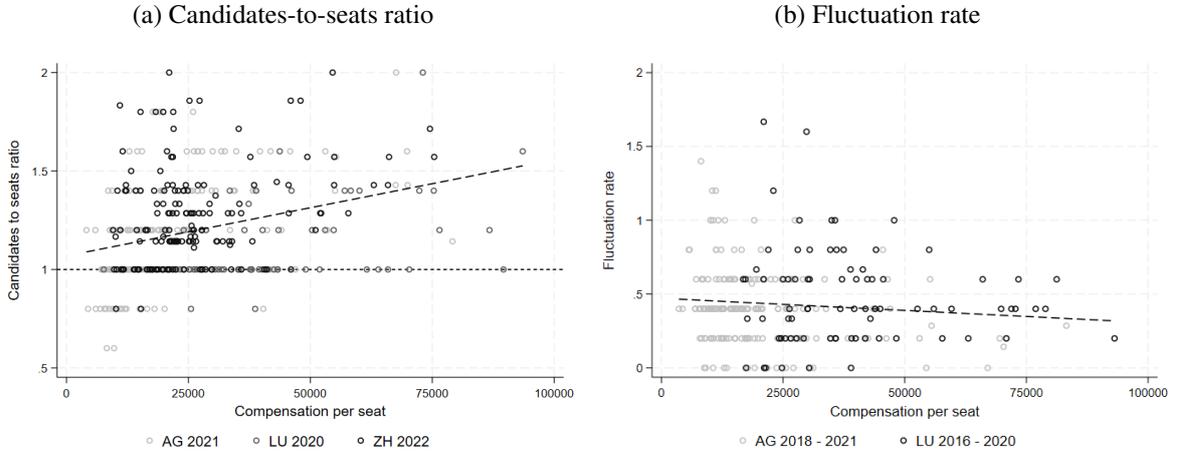
*Notes:* Panel (a) illustrates the correlation between the effective compensation of an average municipal council seat and the candidates-to-seats ratio, pooling municipal council elections from 2021 in the canton of Aargau (AG), 2020 in the canton of Lucerne (LU), and 2022 in the canton of Zurich (ZH). Six municipalities with high compensation (i.e., Zurich, Winterthur, Lucerne, Kriens, Emmen, Horw) have been excluded from this panel to maintain a readable graph. Panel (b) depicts the correlation between the effective compensation per seat and the fluctuation rate, pooling the legislative periods 2018 - 2021 in the canton of Aargau and 2016 - 2020 in the canton of Lucerne. Four municipalities with high compensation (i.e., Lucerne, Kriens, Emmen, Horw) were omitted from this panel. *Data source:* See Appendix B.

## 4   Empirical analysis

### 4.1   Empirical strategy

We study the determinants of candidate supply in municipal council elections in the canton of Lucerne using a multiple regression framework. We adopt two basic specifications. On the one hand, we estimate linear models in levels that exploit variation primarily across municipalities. On the other hand, we incorporate municipality fixed effects in certain specifications to mitigate omitted variable bias due to unobserved differences in municipal characteristics. The full model takes the following form:

$$
\begin{aligned}
candidate\ supply_{m,t} = {} & \alpha + \beta * \ln(full\text{-}time\ compensation_{m,t}) + \gamma * workload_{m,t} \\
& + \delta * \ln(population_{m,t}) + \theta * democracy_{m,t} + \lambda * \ln(taxable\ income_{m,t}) \quad (1) \\
& + \rho_m + \mu_t + \varepsilon_{m,t}
\end{aligned}
$$

*Candidate supply* in municipality *m* and election year *t* refers to the variables *candidates-to-seats ratio* and *fluctuation rate* introduced in Section 3.[13]

The primary explanatory variables are the logged yearly compensation to an average member of the municipal council in full-time equivalents and the average workload of a municipal councilor. As the total workload of the municipal council is systematically recorded in the years 1994, 2005, 2009, 2013, and 2017, we can only impute the average annual compensation of a municipal council mandate in full-time equivalents in these years. In addition, an assumption is required as to the time period for which the imputed wage was presumably valid. We assume that the workload, and in turn the imputed full-time compensation is a good approximation of the average wage of a municipal councilor from the regular election until the end of the legislative term. In practical terms, this translates to allocating the wage in 1994 to the 1991-1996 legislative period, the 2005 wage to the 2004-2008 legislative period, the 2009 wage to the 2008-2012 legislative period, the 2013 wage to the 2012-2016 legislative period, and the 2017 wage to the 2016-2020 legislative period. Anecdotal evidence suggests that salaries and workloads for municipal councilors are typically adjusted in the last year of a legislature and put into force at the beginning of the new one (see, e.g., Neue Luzerner Zeitung 2015). Unless there are further adjustments within the same legislative period, the wage and the workload in these specific years can serve as reasonable approximations for the average conditions throughout the legislative term.[14]

The variable *population*, also in logs, measures the permanent resident population in a municipality at the end of a year, taken from the Swiss Federal Statistical Office (2023). *Democracy* is a set of indicator variables that capture the organization of local democracy, i.e., assembly, parliament, or ballot-only. The taxable income per capita in logs is a proxy for the fiscal strength of a municipality, provided by the Swiss Federal Tax Administration (2024). $\rho_m$ is a full set of municipality fixed effects that control for time-constant municipal characteristics. $\mu_t$ are time fixed effects that control for common shocks. Standard errors are clustered at the municipal level throughout. Table 1 presents descriptive statistics for the respective variables.

Incorporating municipality fixed effects $\rho_m$ in the econometric specification confines the analysis to longitudinal variation. We therefore check beforehand whether there is variation over time, particularly in the key variables of interest such as wages and workload, and variation that does not merely follow a general growth trend that is already captured by the time fixed effects. Figure 9 at the end of this subsection illustrates the longitudinal variation of imputed full-time compensation and average workload of municipal councilors within municipalities and legislative periods. Although the majority

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[13]The dependent variable *attracting sufficient candidates* is not meaningful for the sample of municipalities in the canton of Lucerne. Across the municipal council elections and legislative periods that we study, only three municipalities in the canton of Lucerne failed to secure sufficient candidates for the first round.

[14]As an example, the reduction of yearly wages for city council members in the city of Lucerne by about 40'000 CHF, prompted by a popular initiative accepted on 8 March 2015, was implemented in January 2016 (Wolf 2015). Consequently, it was already in effect at the next regular election in May 2016 and wages remained unchanged (except for inflation adjustments) for the entire legislative period from 2016 to 2020.

of municipalities exhibit minor changes in the average yearly wages of municipal councilors, some clear adjustments over time in both directions are observed. When the variation in average workloads is considered, significant adjustments seem to have taken place in about 20 municipalities. The significant downward shifts observed since the legislative period 2004/08 often stem from organizational reforms that involved the transfer of operational responsibilities from the municipal council to the municipal administration, allowing the municipal council to concentrate on the strategic management of the municipality. Such reforms have resulted in a substantial reduction in the average workloads of municipal councilors (see, e.g., Bürkler and Lötscher 2014). In addition, a handful of municipalities have significantly increased the workload of council offices. These upward adjustments typically occurred due to a reduction in municipal council seats, sometimes as a result of mergers.[15]

There is only limited longitudinal variation in the other covariates we study. For population and taxable income per capita, there is primarily a general increase in most municipalities. With respect to local democracy, no municipality newly established a parliament within our observation period. There were only major organizational reforms involving municipalities replacing their assemblies with ballot-only regimes. This occurred in six municipalities during our observation period.

Table 1: Descriptive statistics on municipal council elections in the canton of Lucerne

|  | Obs | Mean | Std.Dev. | Min | Max |
| --- | --- | --- | --- | --- | --- |
| Candidates-to-seats ratio | 311 | 1.14 | 0.24 | 0.60 | 2.60 |
| Fluctuation rate | 311 | 0.37 | 0.27 | 0.00 | 1.67 |
| Workload per seat | 311 | 35.76 | 15.81 | 14.00 | 100.00 |
| Full-time compensation | 311 | 125438.65 | 26389.73 | 51457.95 | 214557.53 |
| Population | 311 | 4724.87 | 8774.35 | 363.00 | 81592.00 |
| Ballot-only | 311 | 0.06 | 0.25 | 0.00 | 1.00 |
| Parliament | 311 | 0.05 | 0.23 | 0.00 | 1.00 |
| Taxable income [pc] | 311 | 26596.85 | 8000.53 | 11756.08 | 74356.78 |

*Notes:* This table shows descriptive statistics of the variables used in the regression analysis based on the sample of Lucerne municipalities. Legislative periods 1991/96, 2004/08, 2008/12, 2012/16, 2016/20 are included. Data on workload to compute full-time compensation are available for the years 1994, 2005, 2009, 2013 and 2017. Due to missing values in workload, the estimation uses an average of 62 municipalities per election and legislative period. Municipal mergers up to 2017 were taken into account (i.e., municipal status per 2017). Compensation is deflated to prices in 1992.
*Data sources:* See Appendix B.

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[15]We handle municipal mergers in the following way: For municipalities that merged by 2017, we collapse them to a single observation for the entire observation period to prevent structural breaks in the time series data. For example, if two municipalities A and B merged, we aggregate their number of candidates, withdrawals, and workloads for the relevant elections and legislative periods, and divide by the total number of seats from both former municipalities. For mergers occurring in 2020 or later, we retain the pre-merger municipalities in our analysis, as our observation period ends with the 2016/20 legislative term. Notably, no mergers occurred in 2018 or 2019 in the canton of Lucerne.

Figure 9: Variation of imputed full-time compensation and average workload within legislative periods

(a) Imputed compensation in full-time equivalents
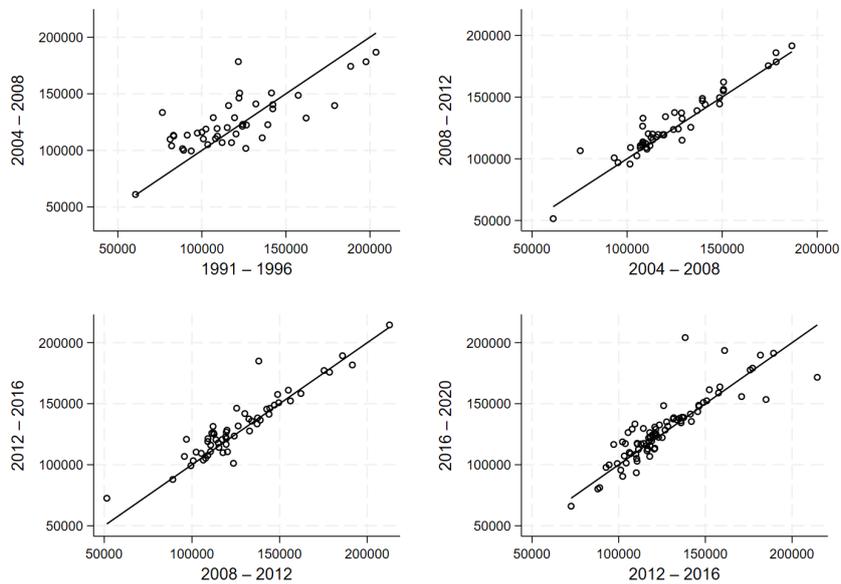


(b) Average workload per seat
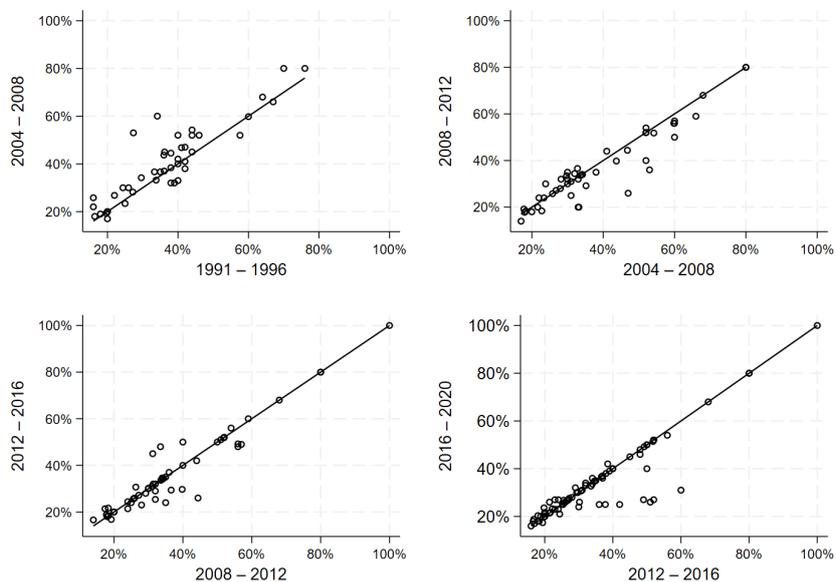


*Notes:* This figure shows the changes in full-time compensation in Panel (a) and in average workloads in Panel (b) for a municipal council mandate across municipalities over the legislative periods 1991/96 to 2004/08, 2004/08 to 2008/12, 2008/12 to 2012/16, and 2012/16 to 2016/20. The 45°-line indicates no change between the two legislative terms.
*Data sources:* See Appendix B.

## 4.2  Results

**Candidates-to-seats ratio**

Table 2 shows the results for five multiple regressions analyzing the covariates of the candidates-to-seats ratio in municipal council elections in the canton of Lucerne. Specification (1) captures the simple relationship between full-time compensation and the ratio. Similarly to the effective compensation, we observe a positive bivariate relationship in the cross-section. According to this estimate, a 10% higher wage for a municipal councilor is linked to a 0.043 higher candidates-to-seats ratio. However, when the workload per seat or the population size is statistically controlled for, the previously statistically significant correlation diminishes. It is noteworthy that a higher workload and a larger population are associated with a higher number of candidates. The general underlying variable driving these correlations in the cross-section thus seems to be municipality size, which is positively related to workload and wage level. Furthermore, when the organization of the local legislative body and taxable income per capita are considered as additional covariates in Specification (4), neither compensation nor workload seems to systematically account for the number of candidates in a municipal council election in a statistically significant manner. It is, rather, the larger municipalities with a municipal parliament and financially stronger municipalities (which also tend to be larger municipalities) that attract more candidates for municipal council positions. In the four municipalities with a parliament, the candidates-to-seats ratio is, on average, 0.34 higher, i.e., there are 1.7 additional candidates in municipalities with five council seats. For a 50% higher taxable income per capita in a municipality, the ratio is, on average, 0.051 higher.

In Specification (5), the longitudinal variation is explored (involving up to five observations per municipality). It is important to consider that some covariates exhibit only small, if any, changes over time, resulting in somewhat imprecise estimates. While the point estimate of 0.069 for compensation does not suggest a quantitatively significant increase in the number of candidates with a wage increase, we do observe a noteworthy relationship between workload and the candidates-to-seats ratio. Specifically, for a 10%-point increase in workload, the ratio decreases by roughly 0.1 (statistically significant at the 10% level). The abolition of the municipal assembly (and the adoption of a ballot-only democratic process) is linked to fewer candidates, although the coefficient is imprecisely estimated, likely due to the small number of municipalities affected (i.e., six).

Table 2: Determinants of the candidates-to-seats ratio in municipal council elections

| Dep. var: **Cand. to seats ratio** | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| ln(full-time compensation) | 0.4295*** | 0.1891 | 0.0929 | 0.0697 | 0.0692 |
| | (0.1371) | (0.1414) | (0.1405) | (0.1271) | (0.2649) |
| Workload per seat | | 0.0051** | | 0.0003 | -0.0101* |
| | | (0.0022) | | (0.0021) | (0.0055) |
| ln(population) | | | 0.0999*** | 0.0457 | -0.3449 |
| | | | (0.0349) | (0.0276) | (0.2806) |
| Ballot-only | | | | -0.0018 | -0.0867 |
| | | | | (0.0550) | (0.0977) |
| Parliament | | | | 0.3412*** | |
| | | | | (0.1223) | |
| ln(taxable income [pc]) | | | | 0.1012** | 0.1992 |
| | | | | (0.0493) | (0.2279) |
| Constant | -3.8235** | -1.2190 | -0.6974 | -1.0247 | 1.7063 |
| | (1.5980) | (1.5936) | (1.4684) | (1.4073) | (3.8348) |
| Election-FE | Yes | Yes | Yes | Yes | Yes |
| Municipality-FE | No | No | No | No | Yes |
| R-squared | 0.1732 | 0.2365 | 0.2359 | 0.3165 | 0.5540 |
| Observations | 311 | 311 | 311 | 311 | 311 |

*Notes:* Observations from municipal council elections in 1991, 2004, 2008, 2012, and 2016 are included. Standard errors are clustered at municipal level. Compensation is deflated to prices in 1992 throughout. Significance levels: *.05 < p < .1, ** .01 < p < .05, *** p < .01.
*Data sources:* See Appendix B.

**Fluctuation rate**

Table 3 presents the evidence regarding the relationship between the various covariates and the fluctuation rate in municipal councils. In Specification (1), The bivariate correlation coefficient for full-time compensation is statistically significantly negative and sizable in the cross-section. The coefficient of -0.15 implies a 3.9% lower fluctuation rate at the sample mean for a 10% higher full-time compensation, or it corresponds to a higher approximate average tenure length of roughly five months.[16] As the full-time compensation is higher in larger municipalities offering higher workloads, we are thus confronted with strong multi-collinearity in Specifications (2) and (3), and cannot statistically separate the two determinants. Multi-collinearity is similarly an issue in Specification (4).

In Specification (5), we exploit the variation over time. We observe that a higher wage for a given workload is related to a higher fluctuation rate, although this partial correlation is very imprecisely

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[16]The calculation is as follows: A 10% increase of the full-time compensation is associated with a 0.015 lower fluctuation rate, on average (-0.153*ln(1.1)). This corresponds to a reduction of 3.9% relative to the mean value of 0.37 (see Table 1). The approximate average tenure length is 1/0.37 = 2.7 legislative periods or 10.81 years. A reduction of the average fluctuation rate of 0.37 by 0.015 to 0.355 corresponds to a new approximate average tenure length of 1/0.355 = 2.81 periods or 11.25 years.

estimated. Overall, we do not find systematic evidence for Hypothesis (3) that higher wages reduce the fluctuation in municipal councils, leading to longer tenures. Furthermore, a higher workload is, on average, related to a higher fluctuation rate; however, the estimated coefficient is not statistically significant at the usual levels.

Table 3: Determinants of the fluctuation rate in municipal councils

| Dep. var: **Fluctuation rate** | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| ln(full-time compensation) | -0.1529*** | -0.0851 | -0.0120 | -0.0244 | 0.1450 |
| | (0.0577) | (0.0873) | (0.0814) | (0.0834) | (0.2364) |
| Workload per seat | | -0.0014 | | 0.0006 | 0.0065 |
| | | (0.0011) | | (0.0020) | (0.0044) |
| ln(population) | | | -0.0412** | -0.0540 | 0.1853 |
| | | | (0.0205) | (0.0369) | (0.3068) |
| Ballot-only | | | | 0.0598 | 0.1159 |
| | | | | (0.0535) | (0.1003) |
| Parliament | | | | -0.0153 | |
| | | | | (0.0608) | |
| ln(taxable income [pc]) | | | | 0.0733 | 0.0463 |
| | | | | (0.0584) | (0.4277) |
| Constant | 2.1478*** | 1.4116 | 0.8358 | 0.3303 | -3.7301 |
| | (0.6794) | (1.0019) | (0.8533) | (1.0911) | (5.2911) |
| Legislature-FE | Yes | Yes | Yes | Yes | Yes |
| Municipality-FE | No | No | No | No | Yes |
| R-squared | 0.0783 | 0.0823 | 0.0873 | 0.0943 | 0.3275 |
| Observations | 311 | 311 | 311 | 311 | 311 |

*Notes:* Observations from legislative periods 1991 - 1996, 2004 - 2008, 2008 - 2012, 2012 - 2016, and 2016 - 2020 are included. Standard errors are clustered at municipal level. Compensation is deflated to prices in 1992 throughout. Significance levels: *.05 < p < .1, ** .01 < p < .05, *** p < .01.
*Data sources:* See Appendix B.

**Workload**

Table 4 presents the results of supplementary regressions allowing for asymmetric as well as non-linear effects of variation in workload. Specifications (1) and (4) are taken from previous Tables 2 and 3 and capture a linear effect of workload in a two-way fixed effects model. In Specifications (2) and (5), we test for potential asymmetric effects of changes in the workload. The variable *reduction* is an indicator variable taking the value 1 if the municipality implemented a significant reduction in municipal councilors' workload during the observation period, i.e., a seven or more percentage point reduction. This corresponds to the bottom 10% in the distribution of workload changes and involves 20 municipalities. The reference group includes municipalities with only insubstantial changes in workload or those with large increases. Interestingly, large reductions are associated with more candidates, while significant increases do not come with fewer candidates; the coefficient of the

reference group (or the main effect) is both quantitatively and statistically insignificant. The observed negative average workload effect in Specification (1) is thus primarily driven by significant reductions in workload, often achieved through the delegation of operational tasks to the municipal administration. Conversely, there is no evidence of an asymmetric effect in the fluctuation rate.

Table 4: Supplementary regressions allowing for asymmetric and non-linear workload effects

| Dep. variable | Candidates-to-seats ratio | | | Fluctuation rate | | |
| --- | --- | --- | --- | --- | --- | --- |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| ln(full-time compensation) | 0.0692 | 0.0404 | 0.0943 | 0.1450 | 0.1521 | 0.1578 |
| | (0.2649) | (0.2617) | (0.2521) | (0.2364) | (0.2412) | (0.2359) |
| Workload per seat | -0.0101* | 0.0023 | 0.0204* | 0.0065 | 0.0029 | 0.0203 |
| | (0.0055) | (0.0035) | (0.0119) | (0.0044) | (0.0099) | (0.0188) |
| Reduction $\times$ Workload per seat | | -0.0178** | | | 0.0050 | |
| | | (0.0082) | | | (0.0109) | |
| Workload per seat$^2$ | | | -0.0004** | | | -0.0002 |
| | | | (0.0002) | | | (0.0002) |
| ln(population) | -0.3449 | -0.1652 | -0.3436 | 0.1853 | 0.1382 | 0.1813 |
| | (0.2806) | (0.2679) | (0.2788) | (0.3068) | (0.3292) | (0.3024) |
| Ballot-only | -0.0867 | -0.1397 | -0.1181 | 0.1159 | 0.1282 | 0.1064 |
| | (0.0977) | (0.1166) | (0.0983) | (0.1003) | (0.0990) | (0.1001) |
| ln(taxable income [pc]) | 0.1992 | 0.2437 | 0.2379 | 0.0463 | 0.0337 | 0.0593 |
| | (0.2279) | (0.2241) | (0.2233) | (0.4277) | (0.4297) | (0.4255) |
| Constant | 1.7063 | 0.3387 | 0.4735 | -3.7301 | -3.3565 | -4.2288 |
| | (3.8348) | (4.2626) | (3.7019) | (5.2911) | (5.4140) | (5.2500) |
| R-squared | 0.5540 | 0.5744 | 0.5689 | 0.3275 | 0.3289 | 0.3301 |
| Observations | 311 | 311 | 311 | 311 | 311 | 311 |

*Notes:* Observations from the same election years and legislative periods as in Tables 2 and 3 are included. All specifications account for municipality and time effects. Standard errors are clustered at municipal level. Compensation is deflated to prices in 1992 throughout. Significance levels: *.05 < p < .1, ** .01 < p < .05, *** p < .01.
*Data sources:* See Appendix B.

Specifications (3) and (6) in Table 4 additionally include a quadratic term for workload per seat, relaxing the linearity assumption. For the candidates-to-seats ratio, the more flexible specification confirms the negative relationship between workload and candidate supply ceteris paribus. Within the empirically supported range of workload changes (i.e., between 15% and 60%), a reduction in workload is generally associated with an increase in the number of candidates. In comparison, the full-time compensation per seat does not emerge as a statistically or quantitatively significant predictor. To put the effect sizes of compensation and workload changes in perspective, consider the following calculations: According to Specification (3), doubling full-time compensation per seat corresponds to an increase in the candidates-to-seats ratio by 0.09. By contrast, halving the average workload per seat from 60% to 30% is associated with an increase of 0.45 in the candidates-to-seats ratio (Figure 10

plots the corresponding predictions). Municipalities that underwent significant workload reduction due to organizational changes (i.e., *reduction* = 1) had an average workload of 45% before the reform, which decreased to 30% afterward. Based on the estimates in Table 4, this reduction is associated with an average increase in the candidates-to-seats ratio by 0.11, which translates to roughly 0.5 additional candidates for five-member councils in subsequent elections. As in the linear specification, the marginal effect of a workload change on the fluctuation rate is not precisely estimated, also when allowing for a non-linear relationship (see Specification 6).

Figure 10: Predictions of the candidates-to-seats ratio conditional on compensation and workload
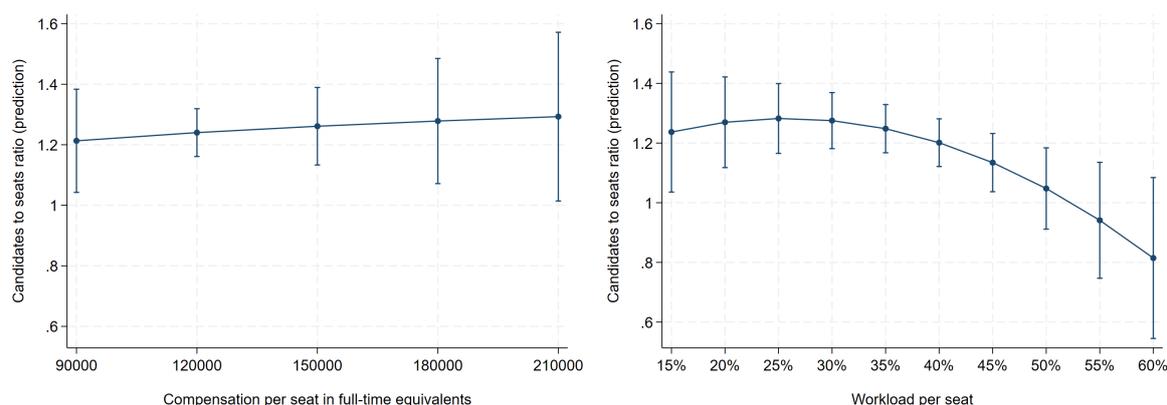


*Notes:* The graph shows the predicted values for the candidates-to-seats ratio conditional on full-time compensation (Panel left) and workload per seat (Panel right), derived from Specification (3) in Table 4. Vertical lines depict 95% confidence intervals.
*Data sources:* See Appendix B.

**Female candidates**

What types of candidates are attracted by lower workloads? Unfortunately, municipal council election protocols across different municipalities and election years provide limited systematic information on individual characteristics such as age, education, or profession. We are therefore unable to make statements about shifts in the overall composition of the candidate pool. However, we can assess whether the increase in candidates due to reduced workloads is more likely to come from women or men. In Table 5, we separately estimate the impact of workload changes on the number of female and male candidates, undertaking a decomposition of the candidates-to-seats ratio by gender. The results suggest that, when workloads are reduced, roughly two-thirds of the increased candidate inflow consists of women, with the remaining one-third being men. Given that the median wage for women in the private sector is significantly lower than for men (see Bundesamt für Statistik 2024 for the current gender wage gap), one might expect reduced workloads to be more appealing especially to men, making the observation difficult to square with a simple opportunity cost argument. Alternatively, lower workloads may be more attractive to women because such positions are more compatible with their professional and personal circumstances.

Table 5: Determinants of the number of candidates in municipal councils by gender

| Dep. variable | Cand. to seats | Male cand. to seats | Female cand. to seats |
|---|---|---|---|
| ln(full-time compensation) | 0.0692 | 0.0280 | 0.0412 |
| | (0.2649) | (0.2349) | (0.1854) |
| Workload per seat | -0.0101* | -0.0032 | -0.0069* |
| | (0.0055) | (0.0048) | (0.0037) |
| Constant | 1.7063 | 0.8766 | 0.8298 |
| | (3.8348) | (4.0386) | (3.4520) |
| Municipal controls | Yes | Yes | Yes |
| Election-FE | Yes | Yes | Yes |
| Municipality-FE | Yes | Yes | Yes |
| R-squared | 0.5540 | 0.6070 | 0.4568 |
| Observations | 311 | 311 | 311 |

*Notes:* Observations from municipal council elections in 1991, 2004, 2008, 2012, and 2016 are included. Municipal controls refer to the variables population in logs, ballot-only, and taxable income per capita in logs. Standard errors are clustered at municipal level. Compensation is deflated to prices in 1992 throughout. Significance levels: $*.05 < p < .1$, $** .01 < p < .05$, $*** p < .01$.
*Data sources:* See Appendix B.

# 5 Discussion

Our two-way fixed effects regressions indicate that the variation in wages for local councilors over time does not correlate with the size of candidate pools in local elections. However, reductions of the workload are associated with an increase in the number of candidates. Regarding the fluctuation rate, we find no clear statistical relationship between salary levels and the number of withdrawals within or by the end of a legislative period. There is a positive correlation between workload and the fluctuation rate in the within-municipality regressions, but it is not precisely estimated.

Beyond the description of trends and relationships, the question arises as to whether we can interpret some of the estimates on the candidates-to-seats ratio as causal. By including municipality fixed effects, we control for all time-invariant differences across municipalities, thereby reducing potential omitted variable bias. However, there is still the possibility of some reverse causality or feedback effect, i.e., an endogeneity of wage and workload reforms in this setting. A possible concern is that municipalities with a poor candidate supply in the past may have sought to make the office of municipal councilors more attractive, either by increasing compensation or reducing the workload.

To address this concern empirically, we test whether the pre-reform candidates-to-seats ratio can explain subsequent compensation increases or workload reductions. Specifically, we run two linear probability models, following the approach of Funk and Gathmann (2011), in order to predict the adoption of substantial compensation increases or workload reductions using the candidates-to-seats ratio in the municipal council election preceding the legislative period when the policy change was

implemented. Table 6 shows the results. The dependent variables are defined as follows: *Compensation increase* takes the value 1 if the municipality increased municipal councilor compensation by at least 20,000 CHF annually (top 10% of wage changes, covering 21 municipalities), and 0 otherwise. *Workload reduction* takes the value 1 if the municipality reduced the average workload of a municipal council mandate by at least 7 percentage points (bottom 10% of workload changes, corresponding to the variable *reduction* from Section 4.2), and 0 otherwise. We find that a lower candidates-to-seats ratio in the election preceding the policy reforms is not associated with a higher likelihood of increasing compensation or reducing workloads.[17] In other words, if there has been any systematic selection into these two policy reforms, it does not appear that past official candidate numbers influenced municipalities' decisions to increase salaries or reduce workloads.

Table 6: Selection into policy reforms

| Dep. variable | Compensation increase | Workload reduction |
|---|---|---|
| Cand. to seats ratio$_{pre-reform}$ | 0.0496 | -0.0506 |
| | (0.0814) | (0.0825) |
| Constant | -4.4488 | 1.7128 |
| | (4.3070) | (3.9701) |
| Municipal controls | Yes | Yes |
| Election-FE | Yes | Yes |
| Mun-FE | Yes | Yes |
| R-squared | 0.7258 | 0.6443 |
| Observations | 296 | 296 |

*Notes:* The table shows two linear probability models with the dependent variables being whether a substantial compensation increase or workload reduction in municipal councils was implemented during the observation span. The primary explanatory variable is the candidates-to-seats ratio in the municipal council election preceding the legislative period when the policy change was implemented. Municipal controls refer to the variables population in logs, ballot-only, and taxable income per capita in logs. Standard errors are clustered at municipal level. Significance levels: *.05 < p < .1, ** .01 < p < .05, *** p < .01.
*Data sources:* See Appendix B.

Still, municipalities may have responded to an environment where it has become increasingly difficult or costly to recruit the necessary number of candidates. While we observe the number of candidates in municipal council elections, we cannot gauge the effort or resources expended to recruit these people for a local political office. It is possible that municipalities opting to increase salaries or reduce workloads are precisely those where candidate recruitment has become more challenging. If this is the case, we have not identified the average treatment effect of these policy reforms. However, we can

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[17]In an alternative specification, the dependent variables for municipalities with a policy reform take the value 1 only in time period *t*, i.e., during the first election under the new policy; all subsequent elections from *t+1* are excluded or coded as missing. This approach yields very similar results that are available on request.

still draw a comparative conclusion between two potential strategies for attracting more candidates. Our findings suggest that reducing councilor workloads by delegating more tasks to the municipal administration is more effective than increasing salaries. This insight offers an important policy implication for municipalities seeking strategies to find more people willing the take on municipal council positions.

Our empirical finding that reduced workloads are associated with an increase in the number of candidates for municipal council positions is supported by considerable anecdotal evidence. Several newspaper articles describe the experiences of representatives from municipalities that have significantly reduced councilor workloads by delegating tasks previously in the hands of the local council to the municipal administration. These reports consistently highlight that lower workloads make it easier for councilors to reconcile their local political engagement with their personal and professional lives (see, e.g., Koller 2011; Nussbaumer 2011; Berger 2014). One summarizing statement, for example, reads: *"The municipal councilors have more time to pursue a profession in the private sector thanks to reduced workloads. [...] The lower workloads of the municipal council also make filling these positions easier and more attractive for executives from the business sector*" (Berger 2014, English translation).[18] According to this and other similar accounts, reduced workloads provide councilors with more time to pursue careers alongside their political roles, making these positions more appealing, even to professionals such as managers from the private sector.

# 6 Concluding remarks

For many individuals, a mandate in local politics is the entry door into politics and often stands at the beginning of political careers. What are the attractive conditions then, that make people willing to take on a local political mandate? We study this question for municipal councils in Switzerland. As in other small-scale federal democracies, Switzerland relies on a large number of individuals willing to serve in local political offices. Anecdotal evidence suggests that meeting this high demand for local politicians has become increasingly difficult in recent decades, however. This puts two central benefits of competitive elections according to political economic theory at risk, namely, enhanced accountability and improved political selection (e.g., Besley 2006). This in turn underscores the need for research into what factors make local political offices sufficiently attractive to maintain a sufficient number of candidates and a minimum level of electoral competition.

Our paper provides systematic, long-run empirical evidence on the supply of candidates for municipal council mandates in three Swiss cantons. Specifically, we analyze three variables: the candidates-to-seats ratio, the likelihood of securing a sufficient candidate pool, and the fluctuation rate in municipal councils across municipalities and legislative periods. Time series from 1970 onward

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[18]The German original reads as follows: *"Die Gemeinderäte haben dank verkleinerter Pensen mehr Zeit, neben ihrem Amt einem Beruf in der Privatwirtschaft nachzugehen. [...] Die kleineren Pensen des Gemeinderats machen zudem die Besetzung dieser Ämter einfacher und auch für Führungskräfte aus der Wirtschaft attraktiver."* (Berger 2014)

show that trends vary by canton and municipality size. Overall, candidate numbers have tended to decrease over time, making it more likely that municipalities face a shortage of candidates. Meanwhile, fluctuations within municipal councils have increased. In particular, smaller municipalities have in recent years consistently seen fewer candidates, a higher likelihood of having more seats than candidates, and greater fluctuation rates compared to larger municipalities within the same canton.

For a sample of municipalities in the canton of Lucerne, institutional conditions enable the calculation of municipal councilors' average workload and corresponding monetary compensation in full-time equivalents. We therefore examine how these factors influence the supply of candidates for municipal council positions. In our preferred specification with two-way fixed effects, thus exploiting variation within municipalities over time, the results indicate that higher wages for local councilors do not correlate with larger candidate pools in local elections. However, workload reductions are associated with an increase in the number of candidates, in particular of female candidates. We do not find statistically significant and robust results on the determinants of the fluctuation rate.

We address concerns about potential endogeneity and provide evidence that selection into wage or workload reforms was not driven by poor candidate supply in the past. However, unobserved factors may still have influenced the decision to implement these reforms. Accordingly, we interpret the evidence not in terms of average treatment effects of these policy reforms, but rather as a comparative analysis of two strategies municipalities might use to attract more candidates. Our findings indicate that delegating tasks from the municipal council to the municipal administration – and thereby reducing councilors' workloads – is more effective than raising wages. This conclusion is further supported by anecdotal evidence suggesting that lower workloads make municipal council positions more appealing, as they allow individuals to reconcile local political engagement with their personal and professional lives.

The identification of workload as a critical factor raises important questions for future research. For example, does increasing the number of members in a political body – and thereby spreading the total workload among more heads – make a mandate more appealing? Or, if a large part-time engagement is not particularly attractive, what about a full-time mandate? So far, this latter arrangement is usually only an option for cities, i.e., large municipalities. However, the limitation arises because most municipalities require that their councilors live in the municipality. If this requirement were loosened, the holding of, for example, two mandates would be possible and thus more likely allow making a living from local political work.

The analysis also shows how difficult it is to capture candidate supply. We do not observe resident citizens' willingness to run but rather an intermediate outcome that might already be partly shaped by strategic considerations of local party sections concerning how many candidates to put forward. Specifically, with a majoritarian voting rule for a multi-member municipal council, local party leaders have an incentive to limit the number of candidates even if more party members were willing to run (Eichenberger and Schafer 2022). This rationale is less likely to be relevant in smaller municipalities,

where the political engagement of non-party / independent candidates plays a more significant role, but becomes more important in larger municipalities, where organized local political groups are active and central to political recruitment. Future research should also aim to capture the latent willingness to run, in order to better understand the factors that make local political offices attractive.

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# What Contributes to an Attractive Local Political Office?
# Evidence from Municipal Council Elections in Switzerland

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December 1, 2024

# Appendix

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# A    Descriptive statistics on municipal council elections in the cantons of Aargau, Lucerne and Zurich

Table A1: Descriptive statistics on municipal council elections in the cantons of Aargau, Lucerne and Zurich

|  | Obs | Mean | Std.Dev. | Min | Max |
|---|---|---|---|---|---|
| **Municipalities of Aargau** | | | | | |
| Candidates-to-seats ratio | 2024 | 1.38 | 0.54 | 0.60 | 6.20 |
| Sufficient candidates | 2024 | 0.97 | 0.16 | 0.00 | 1.00 |
| Fluctuation rate | 1749 | 0.38 | 0.25 | 0.00 | 1.40 |
| Compensation per seat | 349 | 20231.41 | 14030.84 | 3010.63 | 82729.10 |
| Population | 1777 | 2954.21 | 3265.10 | 121.00 | 21773.00 |
| **Municipalities of Lucerne** | | | | | |
| Candidates-to-seats ratio | 1127 | 1.15 | 0.28 | 0.60 | 3.33 |
| Sufficient candidates | 1127 | 0.99 | 0.09 | 0.00 | 1.00 |
| Fluctuation rate | 933 | 0.34 | 0.26 | 0.00 | 1.67 |
| Compensation per seat | 589 | 44556.60 | 33299.82 | 7630.32 | 291892.94 |
| Population | 901 | 4112.18 | 8370.90 | 149.00 | 85534.00 |
| **Municipalities of Zurich** | | | | | |
| Candidates-to-seats ratio | 2211 | 1.23 | 0.26 | 0.40 | 3.60 |
| Sufficient candidates | 2211 | 0.99 | 0.08 | 0.00 | 1.00 |
| Compensation per seat | 463 | 27911.01 | 26965.26 | 6226.33 | 279156.53 |
| Population | 1738 | 7909.85 | 30109.26 | 204.00 | 427721.00 |

*Notes:* This table shows descriptive statistics of the variables presented in Section 3. Candidate numbers in municipal council elections are available from 1970 onwards. The population variable is from 1981 onwards, as soon as information on the end-of-year population per municipality is available. Data on the compensation of municipal councilors is available for the canton of Aargau from 2014, for the canton of Lucerne from 1992 and for the canton of Zurich from 2011 onwards. Compensation is deflated to prices in 1992 throughout.
*Data sources:* See Appendix B.

# B  Data sources

| Variable | Data source |
|---|---|
| **Municipalities of Aargau** | |
| Number of candidates | Dlabač and Gilardi (2017); Aargauer Zeitung (2017, 2021) |
| Number of fluctuations | Gemeindeabteilung des Kantons Aargau (2023) |
| Compensation | Statistik Aargau (2023) |
| Population | Swiss Federal Statistical Office (2023) |
| **Municipalities of Lucerne** | |
| Number of candidates | Dlabač and Gilardi (2017); Verband Luzerner Gemeinden (2023) |
| Number of fluctuations | Amt für Gemeinden Kanton Luzern (2023); Verband Luzerner Gemeinden (2023) |
| Compensation | LUSTAT Statistik Luzern (2023) |
| Workload | Bürkler and Lötscher (2014); Ladner et al. (2021) |
| Population | Swiss Federal Statistical Office (2023) |
| Democracy | Own research |
| Taxable income | Swiss Federal Tax Administration (2024) |
| **Municipalities of Zurich** | |
| Number of candidates | Dlabač and Gilardi (2017); Wahlprotokolle Gemeinden Zürich (2018); Statistisches Amt des Kantons Zürich (2023a) |
| Compensation | Statistisches Amt des Kantons Zürich (2023b) |
| Population | Swiss Federal Statistical Office (2023) |