Strategic Public Policy, Migration and Sorting around Population Thresholds*

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Abstract:
We analyse whether, when and how local office-holders respond to the economic incentives embedded in exogenously imposed population thresholds leading to an increased number and/or remuneration of local office-holders. Using data from all 589 Belgian municipalities over the period 1977-2014, local politicians are found to influence population growth through policy measures aimed at stimulating net in-migration when approaching important population thresholds. We provide evidence that tax rate reductions and housing policy decisions (i.e., granting additional building permits early in the election cycle to maximise population growth just before the 'deadline' to surpass a population threshold) act as key mechanisms. These shifts in public policies are only observed when the incumbent mayor expects to benefit from crossing the population threshold.

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1. Introduction

In many countries, the number of local government officials (i.e. councillors and alderman) as well as their remuneration increase in stages at arbitrary population thresholds. Since these thresholds are typically institutionalised in a legal framework set by a higher-level government and not chosen by local governments themselves, they are arguably exogenous to local decision-making. Consequently, they offer – in ideal circumstances – an interesting environment to compare social, political and economic outcomes in jurisdictions just above and below population thresholds determining a change in local political institutions (such as government size, mayor/alderman remuneration, or the municipal electoral system). Unsurprisingly, therefore, recent years have witnessed a proliferation of work exploiting such thresholds to assess the causal effects of specific public policies.[1]

Yet, from a political economics perspective, politicians might have a strong personal, economic incentive to locate themselves on the desired side of the threshold(s) – certainly when surpassing a given population threshold implies higher remuneration or a larger government size (in which case more politicians might qualify to receive remuneration). In a recent comparative analysis, Eggers *et al*. (2016) uncover substantial evidence of such sorting behaviour in several countries.[2] While sorting thus appears a realistic possibility, the potential *mechanisms* behind it have received little attention thus far. Outright manipulation of population figures is one possibility (Litschig, 2012; Foremny et al., 2015). However, population figures in many developed countries are recorded, collected and/or verified by a central agency, which may leave less occasion for outright manipulation. Even so, politicians could still be able to influence population developments through public policies. One can thereby think of, for instance, urbanization plans, tax rebates or rate reductions, baby bonus schemes, and so on. Such policies are less likely to *precisely* determine municipalities' position immediately around the threshold, but might have a non-negligible impact

[1] Recent examples include studies using data from, for instance, Brazil (Fujiwara, 2011; Litschig, 2012; Brollo et al., 2013), France (Eggers, 2015), Germany (Egger and Koethenbuerger, 2010; Arnold and Freier, 2015), Italy (Gagliarducci and Nannicini, 2013; Bordignon et al., 2016), Morocco (Pellicer and Wegner, 2013), Sweden (Pettersson-Lidbom, 2012; Hinnerich-Tyrefors and Pettersson-Lidbom, 2014) and the United States (Hopkins, 2011).

[2] As noted by Imbens and Lemieux (2008), McCrary (2008) and Urquiola and Verhoogen (2009), such sorting around the exploited threshold(s) can invalidate the inferences drawn from these regression discontinuity (RD) designs.

on local population developments – and thereby influence municipalities' overall position relative to the threshold.

The main contribution of this paper lies in assessing *how* and *when* – in the absence of outright manipulation options – local governments can achieve influence over population figures, such as to locate themselves on the desired side of legally imposed population thresholds. Our empirical focus thereby concerns local housing and fiscal policies. These represent a particularly appealing opportunity to bear on local population developments, since local governments often have far-reaching autonomy over spatial planning as well as fiscal decisions within their territory (Solé-Ollé and Viladecans-Marsal, 2012; Chanel et al., 2014). It is usually the prerogative of the local government to grant or refuse building permits, and to determine local tax bases and set local tax rates. As a result, local governments close to a population threshold might have an incentive to actively influence population growth rates by stimulating net in-migration via housing and fiscal policy decisions. Furthermore, since the relevant population count is often recorded at specific points in time (e.g., 1 January of an election year), such actions are most likely to be timed with such 'deadlines' in mind.

Using data from all 589 Belgian municipalities over the period 1977-2014, our main findings can be summarized as follows. First, we find very little evidence of sorting using traditionally employed density tests (McCrary, 2008). Yet, despite the absence of a clear structural break in the density at the threshold(s), we do observe a strong upward trend in the density around the threshold(s). This suggests that local administrations may not be able to fine-tune their position *just right* of the population threshold, but can – and ostensibly do – influence their general position on the *right side* of the threshold. Second, underlying this general sorting pattern, we show that municipalities close to a relevant population threshold record significantly higher population growth rates (equivalent to approximately 11% of the average annual population growth rate across all municipalities). Third, the observed effects on population growth derive almost exclusively from significantly higher net in-migration, while no substantive effects are observed for birth and death rates. Fourth, and crucially, local housing policy as well as fiscal decisions act as a key mechanism. Municipalities close to a population threshold are found to significantly reduce their income tax rate, and approve significantly more building permits for residential housing (no

similar effect materializes for *non*-residential buildings). These effects are concentrated in municipalities just *below* the relevant population thresholds. Moreover, we find particularly strong effects on building permits for apartments, which arguably reflects that apartment buildings allow for faster population growth in the short term relative to one-family houses. Next, we provide some evidence that municipalities close to a population threshold strategically time their housing policy decisions. Since 1 January of an election year acts as a 'deadline' for recording the relevant population count, they approve more permits for apartments early in the six-year election cycle. This accounts for the time-lag induced by the building process, and translates into effective population growth in years immediately prior to the relevant counting date. Finally, we observe that these strategic shifts in public policies are only implemented when the incumbent mayor expects to benefit from crossing the population threshold by returning to power after the next election – which is when her personal economic incentive to pass a population threshold is strongest. Our results are robust for placebo tests with different population thresholds and different lag structures on the variables of interest.

Overall, these findings provide new (causal) evidence on rent-seeking behaviour in local public administrations. By investigating whether, when and how local office-holders instigate public policies targeting the higher remuneration that arises from surpassing the exogenously imposed threshold, we highlight their response to personal, economic incentives. The remainder of this article is organized as follows. We start by discussing the institutional framework and data. Section 3 provides the empirical strategy, while the results are presented in Section 4. A final section concludes.

2. Institutional framework and data

2.1. Population thresholds in Belgium

Belgian municipalities are governed through a parliamentary system with a legislative branch (the local council) and executive branch (the local government). Municipal elections take place on the second Sunday of October under a fixed electoral cycle of six years, whereby eligible citizens cast their ballot to elect local councillors using a system of Proportional Representation. The composition of the local government (i.e. the College of Mayor and Alderman) is subsequently determined by the party or parties holding a majority position in the council. These parties decide

upon, and formally appoint by majority vote, the mayor and alderman, which are exclusively selected among their councillors. There are no term limits for councillors, alderman nor the mayor.

Both the size of the council (ranging between 7 and 55 councillors) and the College (ranging between 2 and 10 alderman, plus the mayor) are directly determined by the municipality's number of inhabitants on 1 January of the most recent election year. As illustrated in the first two columns of table 1, there are 24 (8) population thresholds at which the size of the council (College) increases. Similarly, the remuneration of the mayor – which has been historically linked to the remuneration of national ministerial officials (between 1976 and 2000) and the municipal secretary (between 2001 and 2006), but is currently tied to the remuneration of national parliamentarians – is a function of the number of inhabitants on 1 January of the most recent election year.[3] Table 1 indicates the main population thresholds where the remuneration of the mayor (and therefore also the alderman) increases, and how the employed thresholds have developed over time. All these thresholds were originally set by the Belgian national government, but local officials' remuneration is since 1999 under the authority of the regional governments (i.e. Flanders, Brussels and Wallonia) as part of a further decentralisation of the Belgian political system. We return to the implication of these legal changes for our empirical analysis in more detail in section 3, but should stress that thus far the same population thresholds have always been applicable to all Belgian municipalities.

TABLE 1 ABOUT HERE

In table 1, 17 population thresholds are recorded in boldface. These are thresholds at which *both* the number of local councillors *and* the remuneration of local office-holders (i.e. mayor and alderman) increases at least during some years of our sample period. We focus on these thresholds in the ensuing analysis for two reasons. First, the pecuniary incentives of mayor and alderman at these thresholds are aligned with the incentives of local political parties, since an increase in the number of councillors improves parties' probability to gain at least some seats (Rae, 1967; Sartori,

[3] The wage of the alderman is linked to that of the mayor, and thus by construction increases at the same population thresholds as the mayoral wage. Local councillors do not receive a wage in Belgium, but are generally paid a fixed amount for every council meeting they attend. This attendance fee is determined by the local council subject to a simple majority vote, and is therefore not linked to specific population thresholds.

1968; Taagepera and Shugart, 1989). The reason is that a larger number of available seats increases the proportionality of the electoral system (Lijphart, 1999; Farrell, 2001). Hence, the motivation of all agents involved in local politics to influence population figures is likely to be maximised at this subset of population thresholds. Second, the results in Eggers *et al*. (2016: 17) indicate that "the largest [sorting] effects are generally found when both council size and salary of the political personnel are changing at the same time". As such, these thresholds represent a best-case scenario to analyse the potential mechanisms underlying sorting behaviour by local governments.

It is a relatively frequent occurrence for municipal population sizes to cross one of these 17 population thresholds. In total, we observe 353 threshold crossings in our period of observation, which in the vast majority of cases (i.e. 294 observations, or 83%) implies moving over – rather than falling below – the threshold. Moreover, municipalities falling below a threshold generally recover their position above the threshold at some point before the end of our observation period (i.e. 40 observations, or 68%) – often even within the same legislature (19 observations). As shown in figure 1, the number of municipalities jumping over a population threshold varies somewhat across the legislative periods in our analysis, but is fairly constant across the six years of the electoral cycle. In contrast, municipalities falling below the threshold are largely concentrated in the period prior to 1994 (i.e. 40 out of 59 observations), and is *least* likely to occur in the two years prior to the election. We return to these observations below.

FIGURE 1 ABOUT HERE

It is important to observe at this point that the population figures employed for determining the size of the council and mayor/alderman remuneration are obtained from the national registry ('*Rijksregister*'). More specifically, population data are collected by each municipality's registry office – which records births, deaths and moves at the local level. This information is then centralized in the *Rijksregister*, which is governed by the Belgian Ministry for Internal Affairs. The latter verifies the information provided by the municipalities, and also cross-references it with the large-scale population surveys held approximately every ten years since 1846 (most recently in 2001). Risk of large-scale outright tampering with the resulting final population figures by Belgian municipalities thus appears unlikely.

2.2. Data

For each municipality in Belgium, we collected annual information from the National Institute for Statistics on their total population, year-on-year population growth, births, deaths, in- and out-migration, gender and age composition, average real per capita income (in 1000EUR, base year is 2000), local tax rates, and the absolute number of approved building permits (for apartments, one-family residences, non-residential buildings and renovations). This was complemented with information from the Federal Employment Office on the municipal unemployment rate. Using a wide variety of online sources, we also collected the names and tenures of each municipality's mayors between the large-scale municipal amalgamation operation of 1976-77 and 2014. Complete information was obtained for 2071 unique mayors covering almost 94% of all municipality-year observations. Summary statistics for all these variables are presented in Table A.1 in appendix A, which also indicates the availability over time for all variables. As can be seen in Table A.1, the average tenure of Belgian mayors just exceeds ten years, which implies that the average mayor is in power for almost two legislative terms (a more complete distribution of mayor tenures is provided in Figure X.1 in the online appendix).

Before turning to the main analysis, table 2 evaluates whether municipalities just below and above our main population thresholds are similar in terms of several socio-demographic characteristics (using a 2% window around the thresholds). The results from simple difference-in-means t-tests included in the last column of table 2 indicate some statistically significant differences between both groups in terms of the shares of women (0.01), elderly ($p<0.01$) and unemployed ($p<0.10$), although all differences remain substantively very small. Similar results are obtained when replicating the analysis for narrower windows around the thresholds, but widening the evaluation window tends to indicate increasingly relevant differences between both groups. This suggests that a window size beyond 2% makes the inclusion of control variables for socio-demographic characteristics progressively more important to avoid biased inferences. We therefore include a full set of socio-demographic control variables throughout our analysis, and return to the choice of our evaluation window below.

TABLE 2 ABOUT HERE

3. Empirical strategy

Our estimation approach is based on the following baseline regression model (with subscripts *i* and *t* for municipalities and time, respectively):

$$Y_{it} = \alpha_i + \beta_1 \, Population\ Threshold_{it} + \delta X_{it} + \gamma_t + \varepsilon_{it} \quad (1)$$

In equation (1), Y_{it} represents a set of dependent variables reflecting either demographic developments (i.e. population growth, births, deaths and net in-migration), housing policy parameters (i.e. the number of various types of building permits), or fiscal policy instruments (i.e. tax rates for the local income and property taxes) in municipality *i* at time *t*. Population growth is defined as the year-on-year change in the municipality's population size (in percent). Births and deaths are the number of births or deaths as a share of the total population, while net in-migration is the difference between the number of immigrants and emigrants as a share of the total population. Housing policy is captured by the absolute number of building permits for, respectively, residential properties (either apartments or one-family residences), non-residential properties, or renovations of residential buildings. We consider the absolute number as this reflects the number of subsequent constructions, which is what matters for reaching the next population threshold. Finally, fiscal policy is operationalised using the tax rates for the two main fiscal instruments available to local governments: i.e. the surcharges on the federal personal income tax and the regional property tax.[4]

The key independent variable – $Population\ Threshold_{it}$ – is an indicator variable equal to 1 for municipality *i* whose population size in year *t* is within 2% of a population threshold associated with higher remuneration of mayors and alderman and larger council size (0 otherwise).[5] We

[4] These two taxes on average represent more than 80% of municipal fiscal revenues. Since fiscal revenues cover approximately 40% of total municipal revenues, both taxes on average account for just over one third of local revenues.

[5] As always, the chosen window size or bandwidth must balance the requirement to have a sufficient number of observations 'treated' with a particular policy (in this case, closeness to the population threshold) and adding variation that is not directly attributable to the policy (which becomes more likely when expanding the window size). We experimented with five window sizes between 1% and 5% (with 1% increments). The main inferences from the analysis are very similar for windows between 2% and 4%, and are statistically weakest when using a very narrow 1% window (due to insufficient observations very close to the relevant population thresholds). We report the results for the 2% window as it is the narrowest window with sufficient statistical power.

thereby account for the exact time period any particular threshold has been legally valid, and take the year of the official publication of legal changes as indicative of the (latest possible) moment municipal leaders become aware of any changes in the applicable thresholds. While no changes have been implemented to the thresholds affecting the number of councillors and alderman since the municipal amalgamation in 1976-77, the population thresholds determining mayoral wages were changed by the law of 4 May 1999 and the decree of 15 July 2005 (see table 1). Hence, our operationalisation of $Population\ Threshold_{it}$ allows for the fact that local officials could already respond to the new thresholds from, respectively, 1999 and 2005 onwards.

We initially include municipalities *above* and *below* the relevant population thresholds in our operationalisation since municipalities cannot perfectly fine-tune population parameters, and thus might still witness the effects of policies stimulating population growth after having surpassed the threshold. This operationalization covers 8.0% of all municipality-years in the dataset. Nonetheless, we also differentiate between municipalities just below (4.2% of municipality-years) and just above (3.9% of municipality-years) relevant population thresholds. We expect $\beta_1 > 0$ in the model with population growth as the dependent variable, which would imply that municipalities close to a population threshold stimulate population growth. The remaining dependent variables then allow us to verify potential mechanisms behind this effect. On the one hand, the models analysing births, deaths and net in-migration allow differentiating natural population growth (through births and deaths) from population mobility. On the other hand, the models using housing and fiscal policy parameters assess the extent to which municipalities strategically influence the approval of building permits (which can subsequently translate into changing population size)[6] or the setting of local tax rates.

X_{it} is a vector of control variables including population size, unemployment rate, income per capita, and the share of elderly (over age 65) and women. Population size is important because it represents the running variable underlying the treatment assignment, while the remaining control

[6] Auxiliary regressions confirm that an increase in residential building permits induces faster population growth and net in-migration in subsequent years. This effect is strongest one or two years after the increase in residential building permits, and levels off afterwards (there is also no instantaneous effect of increased building permits). Interestingly, increases in *non*-residential building permits tend to have the opposite effect, and are associated with slower population growth in subsequent years.

variables aim to account for observed minor imbalances in these characteristics between municipalities close to and further from a population threshold (see table 2). We also add fixed effects at municipality level (α_i) and year (γ_t). The municipality fixed effects are crucial to control for location-specific heterogeneity, and effectively imply that we draw inferences from variation in municipality-specific developments before/after reaching a relevant population threshold. The year fixed effects are necessary to capture variation, which is constant across all municipalities in a given year. Finally, we cluster standard errors at the level of municipality throughout all estimations.

From a methodological perspective, it is important to observe that we pool all observations across all population thresholds over time in our analysis. This is necessary because there are only few observations in the immediate vicinity of each individual population threshold. Moreover, we focus on changes *around* population thresholds using a difference-in-differences approach rather than changes *at* the thresholds using a RD design. The reason is that while municipal population parameters and policies are likely to differ in the vicinity of specific population thresholds, sharp discontinuities *at* the thresholds are highly improbable. Indeed, municipalities cannot be expected to perfectly fine-tune population parameters (in the absence of outright manipulation of these figures), and have an incentive to adjust housing policy at some point *before reaching the threshold* (since their effects on population growth will not be instantaneous; see also footnote 6). Since the 'optimal' timing of such policy shifts depends on a combination of population size and position in the electoral cycle, a standard RD design is unfeasible to address our research question.

Finally, municipalities growing or shrinking towards important population thresholds are likely to have similar incentives to position themselves on the right side of the threshold. Nonetheless, this requires policy changes at different positions for both sets of municipalities: i.e. growing municipalities should (further) stimulate growth while *below* the threshold, while shrinking municipalities should reverse the population decline while still *above* the threshold. Hence, pooling both sets of municipalities is likely to be inappropriate. Given the small number of municipalities falling below a threshold over the period of observation and the concentration of such events in the time period lacking information on local housing policy (see section 2.1 above), the analysis below predominantly focuses on municipalities growing towards important population

thresholds. In practice, this implies that we exclude the 40 municipality-legislatures witnessing a fall below a population threshold (which is less than one percent of all 4123 municipality-legislatures in the complete sample).

4. Results

4.1. Positioning around the threshold

As a first indirect test for the presence of strategic influencing (or manipulation) of population figures in the vicinity of population thresholds, we evaluate whether municipalities display bunching behaviour around our 17 main population thresholds. We thereby follow the approach proposed in Eggers *et al*. (2016), and calculate the difference between municipalities' population sizes and the closest relevant population threshold for all municipalities in all years. We then store all municipality-years when a municipality's population size lies within x% of a threshold (with x = 1,…,5), and also experimented with absolute cut-offs at 100, 250 and 400 inhabitants around a threshold. None of these alternatives affected our results. Figure 2 plots the results using a cut-off at 250 inhabitants and a bin width of 5.

FIGURE 2 ABOUT HERE

Figure 2 does not appear to substantiate significant sorting in the immediate vicinity of important population thresholds in Belgian municipalities. As a formal assessment, we calculated the McCrary (2008) test statistic, which confirms the absence of a discrete jump or drop in the density at the threshold. Although the McCrary test statistic is positive, it remains relatively small and is not statistically significantly different from zero (0.156; $p>0.10$). Similar insignificant results are also obtained when splitting the sample in small and large municipalities, independent of where we set the cut-off between both groups. Nevertheless, estimating a third-degree fractional polynomial on the frequency distribution underlying figure 2 suggests a local maximum in the density at approximately +80. A graphical representation of this analysis is provided by the solid line in figure 2. Although municipalities thus may not be able to situate themselves *just right* of the population threshold, they *can* – and ostensibly *do* – influence their general position on the right *side* of the threshold. Hence, the absence of sorting *at* the threshold in figure 2 is not a

necessary, nor a sufficient, condition to reject strategic local-level policies aimed at stimulating desired population developments.

To explain this result, we should bear in mind that – unlike outright manipulation of population figures (Litschig, 2012; Foremny et al., 2015) – policy measures aimed at stimulating population growth cannot be expected to fine-tune municipalities' position immediately above the threshold. Moreover, there is likely to be general uncertainty regarding "the regular connections between [policy] instruments and outcomes" (Chapell and Keech, 1986: 71; see also Tufte, 1980; Bernanke and Mishkin, 1997; Wieland, 2000), as well as coordination problems when diverse policy actions are implemented at various levels of government or within different departments at the same level of government (see Franzese, 2002, for similar arguments concerning the difficulty of timing desirable socio-economic outcomes around elections). As a result, local office-holders may well be 'playing safe' to avoid the risk of just missing the threshold – which would require them to wait six years until the next population assessment (i.e. at the next local election).

4.2. Population developments around the threshold

As mentioned, population growth can in principle be achieved through two means: natural growth (i.e. births and deaths) and net in-migration. As such, local governments have two 'tools' – with concomitant sets of conceivable policy measures – to locate themselves on the desired side of an important population threshold. The first includes stimulating the birth rate among its inhabitants (assuming that individuals' deaths are beyond the power of local governments), whereas the second consists of encouraging more people to move *in* rather than *out* of the municipality. In table 3, we look at these two fundamental channels by reporting the results from estimating equation (1) for four different dependent variables: year-on-year population growth rate ('Growth'), the number of births as a share of the total population ('Birth'), the number of deaths as a share of the total population ('Death'), and the difference between the number of immigrants and emigrants as a share of the total population ('Net migration'). Panel I includes municipalities above *and* below the population thresholds in the operationalisation of our key independent variable. As such, we estimate the average effect of being *close* to a threshold. While this aims to account for the fact that precise control over population developments is difficult, in Panel II we provide separate

results for municipalities close to but below the threshold (variable '**Below** population threshold'), and municipalities close to but above the threshold (variable '**Above** population threshold').[7]

TABLE 3 ABOUT HERE

The first column in the top panel of table 3 illustrates that municipalities' population growth rate lies on average 0.086% higher when they are close to one of our 17 important population thresholds, compared to their growth rate when further from the threshold. This is equivalent to 17% of the average annual population growth rate across Belgian municipalities (i.e. 0.513%), which represents a substantively meaningful effect. The remaining three columns suggest that this faster population growth derives predominantly from a significantly higher level of net in-migration. The point estimate here equals 19% of the average annual net in-migration across Belgian municipalities (i.e. 0.386%). Municipalities close to the population thresholds do *not* have significantly different birth rates, which suggests that any local policies aimed at stimulating births – such as a payment to parents at the birth of a child (which are common in Belgium) – are not implemented strategically to surpass legally imposed population thresholds.[8] Finally, column 3 suggests that the death rate is somewhat lower in municipalities close to important population thresholds, which may at least in part derive from the fact that in-migration increases the municipal population with individuals less likely to die in the short term. Hence, the denominator in the death rate increases with net in-migration while the numerator is left unchanged, inducing a decline in the observed death rate for purely mathematical reasons.[9]

[7] Note that we always include all 589 Belgian municipalities in the estimations, and only change the operationalisation of our key explanatory variable between panels I and II. Alternatively, we could estimate equation (1) using only the observations when a municipality is close to a population threshold, and differentiate between municipalities above and below the threshold via an indicator variable for municipalities below the threshold. Although this approach drastically restricts the number of available observations, the sign and magnitude of the results remains consistent with those reported in the main text.

[8] We surveyed all 570 municipalities in the Flemish (Dutch-speaking) and Walloon (French-speaking) regions of Belgium about any payments they make to parents at the birth of a child. Such a policy exists in 364 of the 520 municipalities responding to our survey (i.e. 70%). Still, the average payment remains small (i.e. usually less than 100EUR), most municipalities appear to have implemented this policy immediately after the municipal amalgamation operation in 1976-77, and we could find no instance where it appears to have been implemented when the municipality was close to an important population threshold. Many respondents also explicitly indicated that this policy is considered a weak instrument to stimulate births (in part because the payment is too low to affect the choice of future parents), and is mainly viewed as part of a more general social policy to support families.

[9] All else equal, one can anticipate that a migration-driven increase in the population growth rate with 17% (see above) reduces the death rate with approximately the same amount. Given that the average death rate across Belgian

The key message to be taken from Panel II in table 3 is that the population growth rate and net in-migration rate are *not* significantly different just below and above a relevant population threshold. Municipalities above the threshold still tend to grow somewhat faster than municipalities further from a population threshold, which most likely reflects that policies aimed at stimulating population growth cannot be made ineffective immediately (we return to this below).

4.3 Housing policies as mechanism

A first plausible mechanism behind the population developments observed in table 3 might lie in local housing policy since municipalities generally have considerable autonomy over spatial planning decisions. Using data from Spain and France, respectively, Solé-Ollé and Viladecans-Marsal (2012) and Chanel et al. (2014) illustrate that local politicians have significant control over the reclassification of land for potential development, and that such local land supply decisions are strongly affected by the level of political competition and municipal budgetary circumstances. In our setting, such autonomy over spatial planning may imply that municipalities close to, but below, an important population threshold become less restrictive in granting building permits, or stimulate the construction of additional residential housing via the allotment of new settlement areas.[10] Exploring this potential mechanism, table 4 analyses building permits for residential buildings (column 1), apartment buildings (column 2), one-family residences (column 3), non-residential buildings (column 4) and renovations of residential buildings (column 5). The estimation model is again given in equation (1), except that we lag our main explanatory variable with one year. The reason is that it usually takes at least one year to validate the building permit, construct the building and occupy the new accommodation. Table 4 again separates municipalities close to but below the threshold from municipalities close to but above the threshold.

municipalities lies just under 1%, we would thus expect a decline of roughly 0.16% of the death rate for purely mathematical reasons.

[10] Municipal amalgamations are another means to (more drastically) increase population size, and might therefore be of specific interest to politicians in municipalities closer to a relevant population threshold. Following the amalgamation operation in 1976-77, however, further mergers were not an option in our Belgian setting. This changed only recently when the Flemish regional government in 2016 started offering financial incentives for further mergers. Still, no mergers have as yet been agreed upon. Moreover, as a merger decreases local office-holders' probability of retaining power, there are no personal incentives for municipal amalgamations besides a larger prestige for the office-holders.

TABLE 4 ABOUT HERE

Table 4 illustrates that the number of approved building permits for residential buildings significantly increases for municipalities approaching important population thresholds from below. A similar observation fails to materialise for municipalities just surpassing the threshold. This difference is particularly interesting since local governments have direct control over housing policy decisions, and can thus more accurately target the approval of building permits to their perceived need (in terms of surpassing a population threshold). The size of the coefficient estimate in column 1 suggests that, on average, eight additional building permits are approved when a municipality's population size is nearing an important threshold, which is equivalent to 10% of the average annual number of building permits. Interestingly, no significant effect is found with respect to building permits for non-residential buildings (column 4) or renovations (column 5). Furthermore, columns 2 and 3 highlight that the effect on residential buildings is exclusively concentrated in building permits for apartments. The nine additional building permits for apartments reflect 23% of the average annual number of building permits for apartments (or 11% of its standard deviation). There is no significant effect of the population threshold on building permits for one-family residences. This apparent focus on building permits for apartments makes intuitive sense. Indeed, if the goal is to reach and surpass the population threshold as quickly as possible, one-family residences are less 'efficient' compared to new apartments since they consume more open space (which is becoming a scarce commodity in many Belgian municipalities) and take longer to construct for a given 'return' in terms of additional residents. Overall, table 4 strongly suggests that local governments nearing a population threshold specifically target their housing policy towards housing options that promise the largest possible population growth in the short term.

4.4 Fiscal policies as mechanism

Another plausible instrument to stimulate population growth via net in-migration is local fiscal policies. Taxation and public expenditure decisions are deemed to be of central relevance to individuals' (and firms') location decisions in the tax and yardstick competition literatures (e.g., Ashworth and Heyndels, 2000; Rincke, 2010; Revelli, 2011). Indeed, even when an individual (or firm) judges a certain municipality to be an optimal location for whatever reason (e.g., closeness

to relatives, clean air, and so on), "there might still be some degrees of freedom in choosing the specific community" (Buettner, 2001: 226). This leaves leeway for municipalities to employ their fiscal policies to attract the mobile tax base. Belgian municipalities have relatively high autonomy over their tax policy (Vermeir and Heyndels, 2006; Geys and Revelli, 2011), and can freely set the tax rates for their two main fiscal revenue sources: the local income tax (a surcharge on the Federal income tax) and the local property tax (a surcharge on regional property tax). Moreover, these taxes receive significant attention in newspapers, such that citizens are aware of them and are regularly reminded about them. For instance, newspapers regularly publish heat maps on fiscal policies, provide rankings and report on the yearly change in local fiscal policies. Exploring this potential mechanism, table 5 presents results from estimating equation (1) using these two tax rates as the respective dependent variables. Table 5 again separates municipalities close to but below the threshold from municipalities close to but above the threshold, and we lag our main explanatory variable with one year since tax rate decisions are taken the year prior to their implementation.

TABLE 5 ABOUT HERE

The coefficient estimates in table 5 are consistently negative. Given that tax rates show a tendency to increase over time across Belgian municipalities (with 0.044% on average per year for the personal income tax and 23.450 points per year for the property tax), this suggests that municipalities close to an important threshold increase their tax rates less strongly. This observation holds particularly for the personal income tax rate when municipalities are approaching a threshold from below. This focus on the personal income tax appears intuitively reasonable given its high visibility in the Belgian context. It not only features high on the local political agenda, but taxpayers' annual tax return also very visibly indicates the locally applied tax rate. The estimated effect size of 0.09% is substantively meaningful, since it reflects twice the average yearly tax rate increase. As such, it indicates that municipalities nearing a threshold are keen to improve their fiscal attractiveness to potential residents. Interestingly, the point estimate above the threshold is still negative (-0.065, p=0.105), although it is not significantly different from 0 at conventional levels. Hence, municipalities crossing the threshold do not immediately undo their fiscal appeal by readjusting their tax rates. Overall, therefore, table 5 provides

substantial evidence in line with the idea that local governments nearing a population threshold make fiscal decisions aimed at attracting more inhabitants.

4.5 Elections and policy timing

Given that the population thresholds expressly apply to the municipality's number of inhabitants on 1 January of the election year (see section 2.1), local governments have an incentive to focus on this date to surpass the threshold. The reason is that surpassing the threshold just before an election year directly leads to higher mayor/alderman remuneration and a larger council size, while crossing the threshold during or after an election year is less immediately 'rewarding' (and may have no effect if the higher population count is not maintained until the next election deadline). This line of argument implies that policy decisions to boost the number of inhabitants should be taken some years before the next election, such as to – hopefully – induce higher population growth in years immediately preceding the election year.

Figure 1 already suggested that falling below a population threshold is less likely in the two years preceding a local election. In this section, we assess the empirical prevalence of election-driven temporal patterns in population and policy developments by extending equation (1) with a set of interaction effects between $Population\ Threshold_{it}$ and indicator variables for different years in the election cycle (*Election*). We specifically introduce interaction effects for the election year itself (e=0) as well as one, two and three years prior to the election (e=-1, -2, -3). The remaining two years (e=-4, -5) of the six-year election cycle act as the reference category:

$$Y_{it} = \alpha_i + \beta_1 Population\ Threshold_{it} + \theta Electio\ _e . Population\ Threshold_{it} + \delta X_{it} + \gamma_t + \varepsilon_{it} \quad (2)$$

To retain sufficient municipalities close to a population threshold in the different years of the election cycle, we set $Population\ Threshold_{it}$ equal to 1 for municipalities within a 2% window above and below a relevant threshold.[11] Note also that identification here derives from the fact that different municipalities approach a population threshold during different election years. Hence,

[11] Unfortunately, focusing only on municipalities approaching the population threshold(s) from below is impossible due to the lack of sufficient observations in each year of the election cycle.

even though all municipalities hold elections on the same day (which implies we cannot include $Election_e$ independently due to perfect collinearity with the year effects γ_t), we can nonetheless differentiate between year and election effects in the analysis. For ease of interpretation, the results are graphically presented in figure 3 for population growth and the two policy measures with the strongest effects in the foregoing analysis (i.e., apartment building permits and personal income tax rate). The different panels in figure 3 provide the coefficient estimates across the election cycle with associated 95% confidence intervals (calculated using standard errors adjusted for the covariance between the interacted variables).

FIGURE 3 ABOUT HERE

Figure 3 highlights that – controlling for year and municipality fixed effects as well as socio-demographic characteristics – population growth in municipalities close to important population threshold(s) is highest in the year(s) immediately prior to an election year. While the restricted number of observations limits the statistical power of our analysis, the pre-election growth spike nonetheless reaches statistical significance at 95% confidence in two of the three years immediately preceding an election year. In the first half of the electoral cycle and in the election year itself (when additional population growth arguably no longer matters for mayor/alderman remuneration and council size), population growth is lowest. Interestingly, a different picture emerges in the middle and bottom panels of figure 3. The number of additional approved building permits for apartments and the reduction in the personal income tax rate are found to be highest in municipalities nearing a population threshold when the election – and thus the 'deadline' to surpass the population threshold – is still some way into the future (i.e. in the reference years as well as *e-2*). These effects are statistically significant at the 90% confidence level in the middle panel, and the 95% level in the bottom panel. Yet, no significant effects exist when the election is imminent. All in all, these findings are in line with the idea that local governments take into account the time it takes for building permits and fiscal policy changes to translate into increased population size (see also footnote 6).

4.6 Does crossing a population threshold benefit the incumbent?

The incentive to cross a population threshold is arguably larger when local politicians are more confident that they can benefit from this themselves. The personal economic incentive decreases when one fears electoral defeat at the next elections. We assess this proposition in two ways. First, we analyse whether the incumbent mayor benefits from passing a population threshold by looking at her probability of remaining in power in a subsequent legislative period. The results are provided in table 6 for the 4305 available mayor-legislature observations in the 1977-2014 period. This indicates that a mayor, on average, has a roughly 50/50 chance of being reappointed in a future legislative term (51.99%). Interestingly, this probability stands at 58.30% when looking only at the legislative terms where the municipal population surpasses a population threshold. A Chi^2 test comparing both distributions highlights that they are statistically significantly different (Fischer's exact $p = 0.031$). Although this should not be considered as (causal) evidence that passing a population threshold improves the probability to be reappointed, it does indicate that mayors more often than not tend to benefit themselves from the increased remuneration when crossing the threshold.[12]

TABLE 6 ABOUT HERE

Second, the personal economic incentive to pass a population threshold is only present when local office-holders expect to return to power after the next elections. Therefore, strategic housing and fiscal policy decisions should arise predominantly in this setting (compared to settings where local office-holders expect to be ousted from power and thus have no personal economic incentive to pass the threshold). Although the need for coalition governments – which occur in roughly 60% of all local government formations in Belgium (Geys, 2007) – strongly increase the uncertainty about future returns to power, pre-electoral agreements setting out the terms and partners of a coalition government after upcoming elections are a very common practice at the local level in Belgium (Wille and Deschouwer, 2012). Such agreements naturally increase the predictability of succeeding/failing to return to power (subject to obtaining a majority position in the local council).

[12] This positive correlation is also confirmed when using a simple logit model where the dependent variable is 1 when the mayor is reappointed in a future legislative term (0 otherwise) and the key explanatory variable is 1 when the municipal population crosses a population threshold in a given legislative term (0 otherwise). Full details are provided in table X.3 in the online appendix.

Therefore, local office-holders often have realistic expectations about their (potential to) return to power in the next legislative period. To test whether these expectations affect our results, table 7 differentiates between municipality-legislature observations where the mayor does return to power in the next legislative period, and those where the mayor is ousted after the next elections. The results confirm the existence of strategic housing and fiscal policy decisions *only if* it benefits the incumbent leadership: housing permit increases and tax rates decreases are only implemented by mayors who (expect to) return to power in the next legislative period (Panel I), but do not arise for mayors (expecting to be) ousted from power (Panel II).

TABLE 7 ABOUT HERE

4.7 Placebo tests

Finally, we report the results of two placebo tests. The first of these consists of repeating the analysis at placebo population thresholds where, to the best of our knowledge, no policy changes occur. In particular, we choose the midpoint between the currently valid population thresholds and the next threshold included in table 1, and then randomly add 167 to the result to make sure we do not accidentally include a real population threshold (for a similar approach, see Eggers *et al*., 2016). As such, we set 12 placebo thresholds at 1392, 2417, 3667, 4667, 5667, 17667, 22667, 27667, 37667, 55167, 85167 and 175167.[13] The results are presented in table X.1 of the online appendix. We thereby again focus on municipalities whose population is within a 2% window of the placebo threshold, and operationalize our central independent variable as 1 for municipalities approaching the population threshold from below (0 otherwise). All coefficient estimates in this exercise are small and remain statistically insignificant at conventional levels. Overall, therefore, these results confirm that our main results do *not* materialize at arbitrary population thresholds, but appear specific to the thresholds actually used in Belgium to increase mayor/alderman remuneration and the council size.

The second placebo test specifically concerns the results in table 5, which were obtained by looking at a one-year lag in our central explanatory variable. Naturally, similar results should *not* arise

[13] Equivalent results are obtained when we instead choose the midpoint between the current population thresholds and the *previous* threshold included in table 1, and then randomly *subtract* 167 from the result.

when instead introducing a one-year forward lag of our central explanatory variable, since there is no longer any incentive for strategic housing policy decisions after a municipality has passed the population threshold. This is borne out by the empirical analysis in table X.2 in the online appendix, where we observe a weak effect only for renovation permits.

5. Concluding discussion

This article evaluated whether, when and how – in the absence of outright manipulation options – local governments try to achieve influence over population figures, such as to locate themselves on the desired side of legally imposed population thresholds leading increases in the number and/or remuneration of local office-holders. Our main findings suggest significantly faster population growth in municipalities close to important population thresholds, which is driven by significantly higher net in-migration. We furthermore provide evidence that local governments appear to strategically employ their fiscal and housing policies to attract more inhabitants.

We also observe a highly suggestive pattern with respect to the timing of fiscal and housing policy actions. As 1 January of an election year serves as a formal 'deadline' with respect to the population threshold – and thus for setting the corresponding mayor/alderman remuneration and the size of the council – municipalities focus on this date. That is, they start granting additional apartment building permits and reduce tax rates at the onset of their legislative term, which translates into higher population growth and net in-migration in the years immediately prior to the relevant election deadline. This temporal pattern is in line with the notion that strategic fiscal and housing policy decisions act as a key mechanism for influencing the population growth rate when municipalities approach a population threshold with personal, economic implications for local office-holders. Moreover, we observe that the strategic public policies are only implemented by mayors who (expect to) return to power in the next legislative period, but do not arise for mayors (expecting to be) ousted from power. In other words, the fiscal and housing policies are only observed when the incumbent leadership expects to benefit from crossing the population threshold. Clearly, further research should examine whether other, potentially more subtle, alternative mechanisms are also employed – such as the opening day-care facilities (to increase the municipality's attractiveness to young families), the construction of elderly care centers, increasing the number of cultural options and activities, or the acceptance of more non-native migrants.

These results provide new evidence on rent-seeking behaviour in local administrations. Local office-holders' deliberate and strategic instigation of public policies targeting higher remuneration when surpassing exogenously imposed population thresholds indeed strongly suggests that political agents respond to incentives related to personal, economic gain. Importantly, the exogenous nature of the imposed thresholds and our pre/post comparison of population and policy developments *within the same municipality* imply that our inferences are very likely to be causal in nature. As such, we contribute to a vast political economics literature on political agency and (self-)selection (Besley, 2005, 2006; Gagliarducci and Nannicini, 2013; Geys and Mause, 2015). More broadly, however, our article also confirms that threshold-based public policies can have important unintended side-effects by distorting individuals' incentives. Similar threshold effects have likewise been observed in the public administration literature on management-by-objectives (for a recent discussion, see Hood, 2006) and the education economics literature on test-based school accountability systems (Reback, 2008; Neal and Whitmore Schanzenbach, 2010; Rockoff and Turner, 2010).

Finally, our results can have important policy implications, since it might imply that local administrations become less restrictive in granting building permits when important population thresholds are nearby. Consequently, a mechanism of control or accountability by higher-level governments might be required to prevent the acceptance of lower standards when population thresholds come within reach. Similarly, it is possible that the quality and quantity of local services decrease due to the lower tax rates. Moreover, since local office-holders' incentives for influencing population developments change over the electoral cycle, more accountability appears needed particularly at the onset of the legislative term in which a relevant population threshold is within reach. Overall, central administrations should be aware of the (perverse) incentives created by setting legally enshrined population thresholds. While such thresholds are often considered as a fair mechanism to distribute power and money, they can have unintended consequences.

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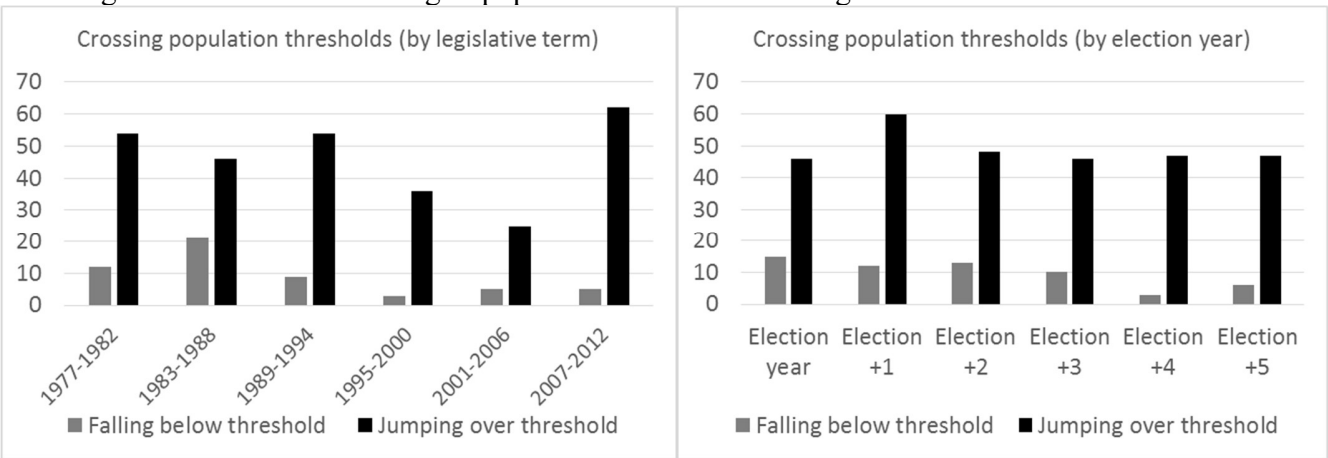
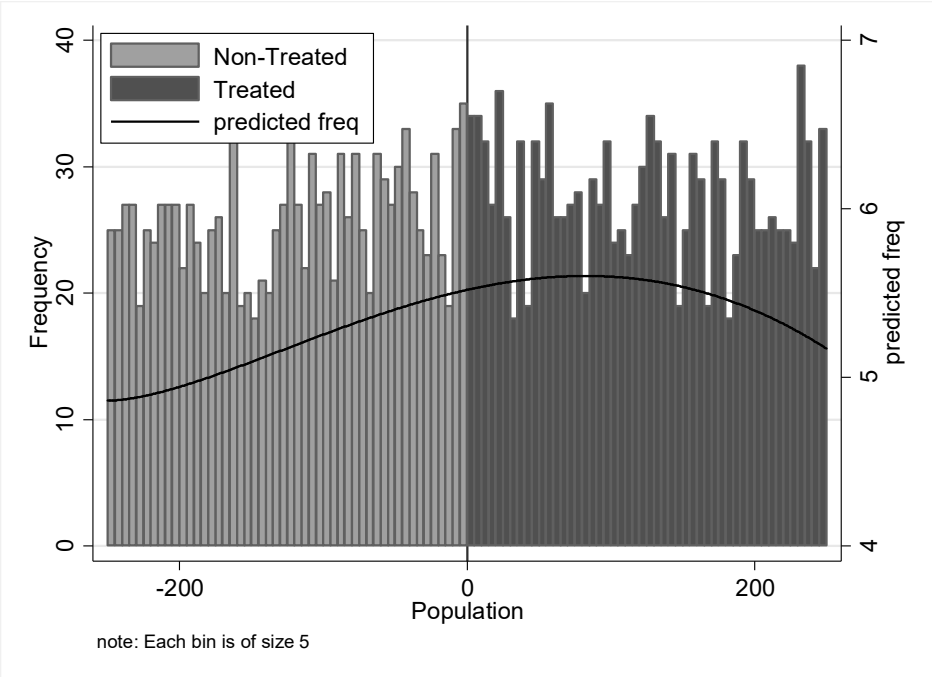
Figure 1: Number and timing of population threshold crossings



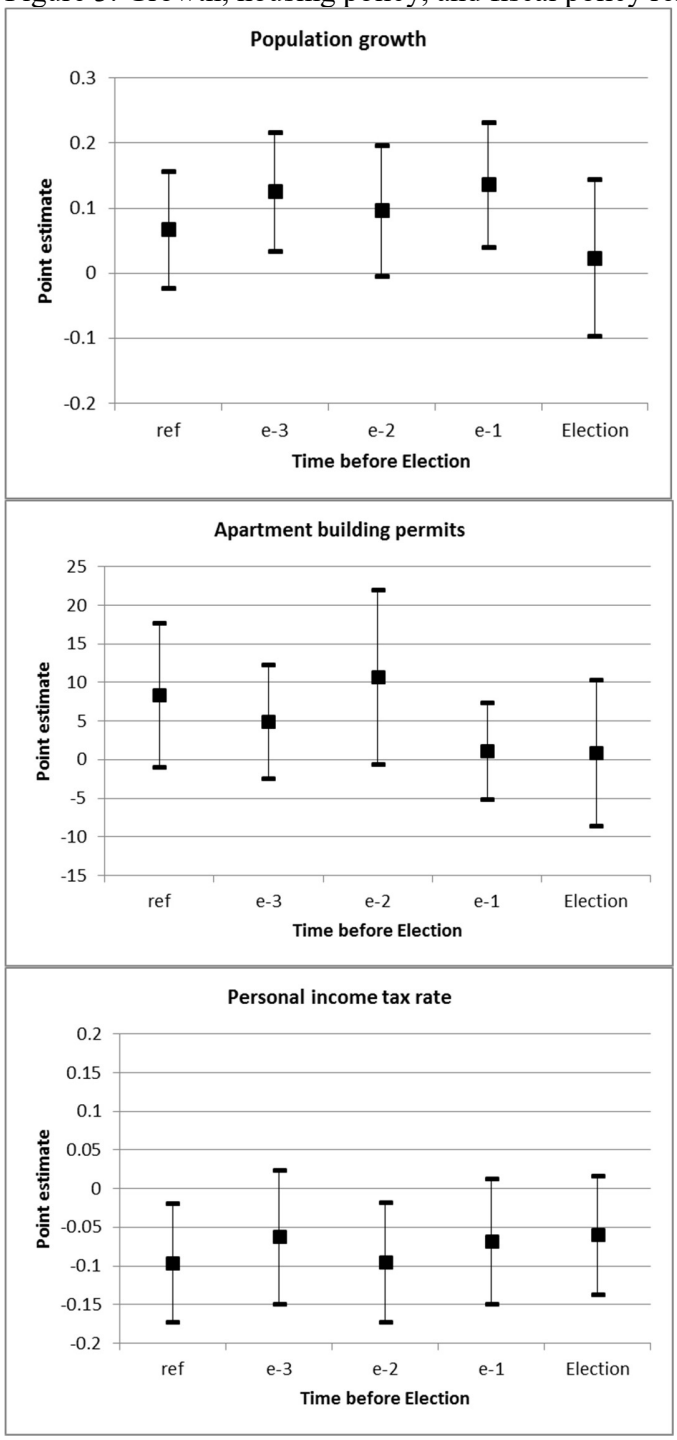
Note: The figure plots the frequency of municipalities' population sizes crossing one of the 17 population thresholds associated with higher mayoral/alderman wages *and* larger council size. The left-hand figure displays these frequencies by legislative period, while the right-hand figure distinguishes between the six years of the electoral cycle. Black bars represent municipal population sizes jumping over a population threshold, whereas grey bars reflect population sizes falling below a threshold.

Figure 2: Clustering around population thresholds



Note: The figure plots the distribution of municipalities' population sizes within a 250-person window around the 17 population thresholds associated with higher mayoral/alderman wages *and* larger council size. Each bin in the histogram is of size 5 (left-hand scale). The vertical axis designates the population threshold(s), with negative (positive) numbers indicating the number of inhabitants below (above) a population threshold. The line represents a fractional-polynomial prediction plot of the frequency distribution of municipalities around the population thresholds with a polynomial function of degree 3 (using a bin size of 1 in the underlying estimation, right-hand scale).

Figure 3: Growth, housing policy, and fiscal policy relative to elections



Note: The figure provides the coefficient estimates (with 95% confidence intervals) of interaction effects between $Population\ Threshold_{it}$ and indicator variables for the election year ('Election') as well as one ('e-1'), two ('e-2') and three ('e-3') years prior to the election. The remaining two years of the six-year election cycle act as the reference category ('ref'). The dependent variables are the year-on-year population growth rate (top panel), the absolute number of building permits for apartment buildings (middle panel), and the personal income tax rate (bottom panel). All models include controls for income, unemployment, age and gender distribution, as well as a full set of year and municipality fixed effects.

Table 1: Important population thresholds for Belgian municipalities

	Number of councillors	**Number of alderman**	**Mayor wage (as % of ministerial official)**	**Mayor wage (as % of municipal secretary)**	**Mayor wage (as % of national MP wage)**
Time period	*1977-now*	*1977-now*	*1977-2000*	*2001-2006* [a]	*since 2007* [b]
less than 300	7	2	17.32%	75%	26%
301					29%
501					31%
751					35%
1000	9	3			39%
1251					40%
1501					41%
2000	11		17.77%		42%
2500			19.58%		44%
3000	13				46%
4000	15				48%
5000	17	4	31.40%	80%	53%
6000			35.24%		56%
7000	19		39.09%		
8000			42.93%		60%
9000	21		46.77%		
10000		5	50.58%	85%	69%
12000	23		54.71%		
15000	25				74%
20000	27	6	78.12%	95%	88%
25000	29				94%
30000	31	7	107.39%		
35000	33				99%
40000	35		136.65%		
50000	37	8	168.67%	105%	116%
60000	39				
70000	41				
80000	43		221.01%	120%	140%
90000	45				
100000	47	9			
150000	49				151%
200000	51	10			
250000	53				
300000	55				

Note: The table represents the number of council members, alderman and the mayoral wage at different population levels. Boldface population thresholds witness a simultaneous increase in the wage of mayors and alderman as well as the number of council members at least during part of our time period (1977-2014), and are the focal point of the analysis in the main text. Note also that in the period 1977-2000, the mayoral wage increased in relatively small steps at no less than 152 thresholds between 2000 and 50000 inhabitants. To preserve space, we only included the main relevant increases in the table.

[a] Implemented by the Law of 4 May 1999; [b] Implemented by the Decree of 15 July 2005.

Table 2: Balance test between municipality-year observations just below and above population thresholds

Variable	Above threshold	Below threshold	p-value
	All municipality-year observations near threshold		
Population size	15256.85	14577.92	0.269
Female (%)	50.811	50.727	0.169
Elderly (%)	15.455	15.001	0.003
Income (EUR)	9.388	9.467	0.517
Unemployment (%)	3.704	3.864	0.087
Flanders (=1)	0.515	0.500	0.527
	Only municipality-year observations from municipalities crossing threshold		
Population size	15403.45	15099.60	0.736
Female (%)	50.609	50.903	0.001
Elderly (%)	14.587	15.238	0.000
Income (EUR)	9.659	9.443	0.182
Unemployment (%)	3.755	3.681	0.521
Flanders (=1)	0.497	0.507	0.747

Note: The table includes only the sample of municipalities whose population size is within 2% of a population threshold associated with higher mayoral wages *and* council size. On the left-hand side are municipalities just *above* the population threshold, while on the right-hand side are municipalities just *below* the threshold. P-value refers to the statistical significance of a two-sided t-test assessing the difference between both subsamples.

Table 3: Baseline regression results for municipal population developments

Variable	Growth	Birth	Death	Net migration
	Panel I:* Close to *population threshold			
Population threshold	0.086 ***	0.001	-0.008	0.073 ***
	(0.030)	(0.007)	(0.005)	(0.027)
Controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Municipality FE	YES	YES	YES	YES
N	18674	14640	14640	18674
R^2 (within)	10.08	18.81	12.91	4.85
	Panel II:* Below *or* Above *population threshold			
Below population threshold	0.075 **	0.003	-0.006	0.054 *
	(0.032)	(0.008)	(0.007)	(0.032)
Above population threshold	0.097 **	0.004	-0.011	0.092 **
	(0.043)	(0.009)	(0.006)	(0.038)
Controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Municipality FE	YES	YES	YES	YES
N	18674	14640	14640	18674
R^2 (within)	10.08	18.82	12.91	4.85

Note: The respective dependent variables are the year-on-year population growth rate ('Growth'), the number of births as a share of the total population ('Birth'), the number of deaths as a share of the total population ('Death'), and the difference between the number of immigrants and emigrants as a share of the total population ('Net migration'). In panel I, the central independent variable – 'Population threshold' – is an indicator variable for municipalities whose population size is within 2% of a population threshold associated with higher mayoral wages *and* council size. Panel II separates the municipalities within a 2% range of a population threshold between those *below* the threshold and those *above* the threshold. All models include a full set of year and municipality fixed effects, and exclude legislatures where the municipal population falls below a population threshold. Standard errors clustered at municipality level reported in brackets: *** significant at 1%, ** at 5% and * at 10%.

Table 4: Building permit results

Variable	Residential buildings	Apartments	One-family residences	Non-residential buildings	Renovations
Below population threshold (lag)	8.702 **	9.671 **	-0.969	0.229	1.710
	(4.274)	(3.874)	(1.382)	(0.290)	(1.194)
Above population threshold (lag)	2.054	0.973	1.081	0.200	1.437
	(3.285)	(2.970)	(1.167)	(0.296)	(1.001)
Controls	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Municipality FE	YES	YES	YES	YES	YES
N	9936	9936	9936	9936	9936
R^2 (within)	5.47	6.25	8.66	16.45	11.17

Note: The respective dependent variables are the absolute number of residential building permits ('Residential buildings'), permits for apartment buildings ('apartments'), permits for one-family residences ('One-family residence'), non-residential building permits ('Non-residential buildings'), and permits for renovations of residential buildings ('Renovations'). The central independent variable – 'Population threshold' – is an indicator variable for municipalities whose population size is within 2% of a population threshold associated with higher mayoral wages *and* council size. It is 1 *either* only for municipalities within a 2% range **below** the threshold *or* within a 2% range **above** the threshold. It is lagged by one period to accommodate the time lag between granting a permit, construction and moving into the residence. All models include controls for population size, income, unemployment, age and gender distribution, as well as a full set of year and municipality fixed effects. Standard errors clustered at the municipality level reported in brackets: *** significant at 1%, ** at 5% and * at 10%.

Table 5: Fiscal policy results

Variable	Property tax rate	Personal income tax rate
Below population threshold (lag)	-1.423 (14.594)	-0.094 ** (0.039)
Above population threshold (lag)	-4.822 (13.681)	-0.065 (0.040)
Controls	YES	YES
Year FE	YES	YES
Municipality FE	YES	YES
N	18674	18674
R^2 (within)	68.52	34.43

Note: The respective dependent variables are the tax rates for the local property tax and the local personal income tax (both of which are surcharges on taxes raised by higher-level governments; see main text). The central independent variable – 'Population threshold' – is an indicator variable for municipalities whose population size is within 2% of a population threshold associated with higher mayoral wages *and* council size. It is 1 *either* only for municipalities within a 2% range **below** the threshold *or* within a 2% range **above** the threshold. It is lagged by one period to accommodate the time lag between granting a permit, construction and moving into the residence. All models include controls for population size, income, unemployment, age and gender distribution, as well as a full set of year and municipality fixed effects. Standard errors clustered at the municipality level reported in brackets: *** significant at 1%, ** at 5% and * at 10%.

Table 6: Mayor reappointment

	All observations	Crossed population threshold	
		NO	YES
Mayor *not* reappointed	48.01%	48.46%	41.70%
Mayor reappointed	51.99%	51.54%	58.30%
N	N=4305	N=4022	N=283
Pearson $Chi^2(1)$		4.844 **	
Fisher's exact		p = 0.031	

Note: The table presents the share of mayors in power at time t who are reappointed as mayor during a future legislative period. Column 1 includes all available municipality-legislature observations, whereas columns 2 and 3 distinguish between legislatures depending on whether or not the municipality's population crosses a population threshold. The Pearson Chi^2 test statistics evaluates the statistical significance of the difference in both distributions, with a p-value obtained using Fisher's exact method.

Table 7: Results for mayors succeeding/failing to return to power

Variable	Residential buildings	Apartments	Property tax rate	Personal income tax rate
	Panel I: Mayor* returns to *power in next legislative period			
Below population threshold (lag)	16.548 ***	16.674 ***	-14.838	-0.074 *
	(5.969)	(5.500)	(15.166)	(0.043)
Above population threshold (lag)	5.808	4.113	-3.183	-0.061
	(3.745)	(3.556)	(16.528)	(0.050)
Controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Municipality FE	YES	YES	YES	YES
N	6132	6132	11243	11243
R^2 (within)	5.84	6.95	68.51	34.59
	Panel II: Mayor* ousted from *power in next legislative period			
Below population threshold (lag)	-1.849	-0.367	5.744	-0.043
	(6.043)	(4.976)	(20.374)	(0.057)
Above population threshold (lag)	-5.441	-7.587	-6.469	-0.015
	(5.913)	(5.723)	(17.751)	(0.047)
Controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Municipality FE	YES	YES	YES	YES
N	3804	3804	7431	7431
R^2 (within)	6.90	5.57	69.94	35.79

Note: The respective dependent variables are the absolute number of residential building permits ('Residential buildings'), permits for apartment buildings ('apartments'), and the tax rates for the local property tax and the local personal income tax (both of which are surcharges on taxes raised by higher-level governments; see main text). The central independent variable – 'Population threshold' – is an indicator variable for municipalities whose population size is within 2% of a population threshold associated with higher mayoral wages *and* council size. It is 1 *either* only for municipalities within a 2% range **below** the threshold *or* within a 2% range **above** the threshold. It is lagged by one period to accommodate the time lag between policy decisions and their effect. Panel I includes only municipality-legislature observations where the mayor returns to power in the next legislative period, while Panel II includes only municipality-legislature observations where the mayor is ousted from power at the next elections. All models include controls for population size, income, unemployment, age and gender distribution, as well as a full set of year and municipality fixed effects. Standard errors clustered at the municipality level reported in brackets: *** significant at 1%, ** at 5% and * at 10%.

Appendix A

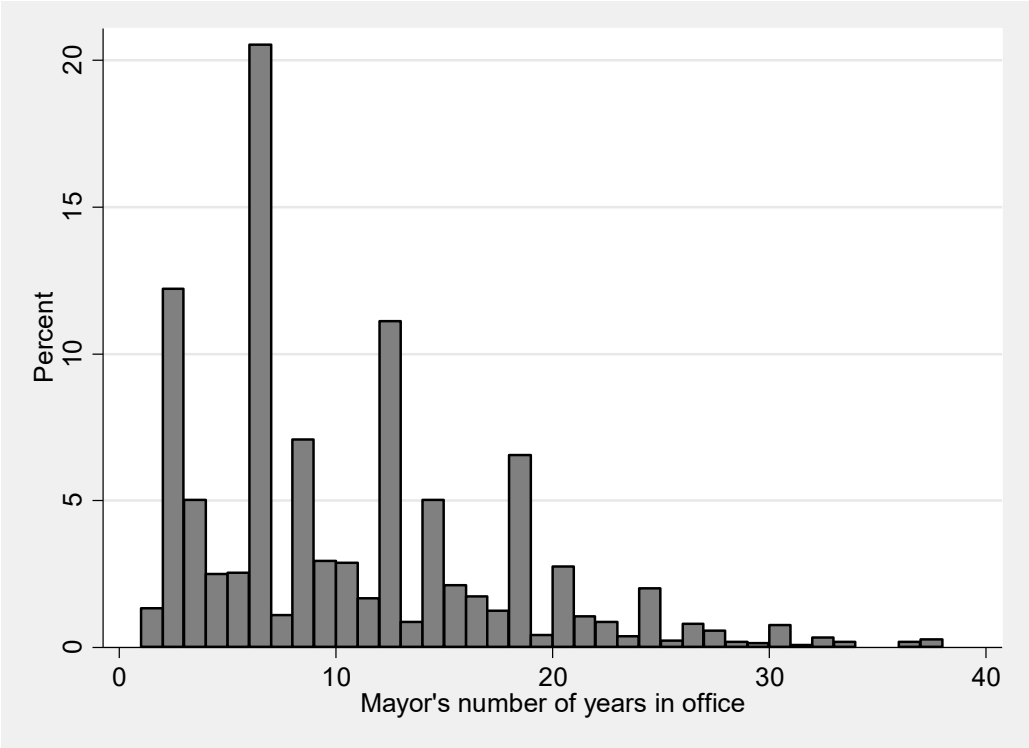
Table A.1: Summary statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max	Time period
Population threshold	22382	0.082	0.274	0	1	1977-2014
Population growth	21792	0.513	0.909	-9.576	13.146	1977-2013
Birth	15312	1.123	0.214	0	3.798	1988-2013
Death	15312	0.998	0.231	0	3.488	1988-2013
Net Migration	19435	0.386	0.747	-7.000	7.128	1981-2014
Residential buildings	11090	81.445	109.324	0	1729	1996-2014
Apartments	11090	39.929	85.494	0	1598	1996-2014
One-family residence	11090	41.516	39.081	0	811	1996-2014
Non-residential buildings	11090	8.661	9.862	0	140	1996-2014
Renovations	11090	44.228	56.649	0	1008	1996-2014
Property tax rate	22344	1571.232	708.688	0	3569	1977-2014
Personal income tax rate	22344	6.831	1.125	0	12	1977-2014
Controls						
Population size	22382	17368.6	28811.94	80	530826	1977-2014
Income	21204	9.678	2.525	3.424	19.405	1977-2012
Unemployment	20596	3.587	1.793	0	15.831	1980-2014
Elderly	20026	15.656	2.874	5.020	33.880	1981-2014
Female	20024	50.745	1.067	43.529	57.738	1981-2014
Flanders	22382	0.523	0.499	0	1	1977-2014
Mayors						
Tenure	2071	10.157	7.026	1	38	1977-2014

Note: Population threshold is an indicator variable equal to 1 for municipalities whose population size is within 2% of a population threshold associated with higher mayoral wages *and* council size (0 otherwise). Population growth is the year-on-year change in the municipality's population size (in percent). Birth and Death are the number of births (deaths) as a share of the total population. Net Migration is the difference between the number of immigrants and emigrants as a share of the total population. Residential buildings (Apartments, One-family residence, Non-residential buildings, Renovations) is the absolute number of building permits for residential properties (residential apartments, for one-family residences, for non-residential properties, renovations of residential buildings). The property and personal income tax rates are, respectively the surcharges raised on the regional property tax and the federal personal income tax. Income is the average real per capita income in the municipality (in 1000EUR, base year is 2000). Unemployment, elderly and female are expressed as a share of the total municipal population. Flanders is an indicator variable equal to 1 for municipalities in Flanders (0 for municipalities in Brussels and Wallonia). Tenure refers to the number of years a given mayor was in power over the period of observation.

ONLINE APPENDIX

Figure X.1: Mayor's number of years in office, 1977-2014



Note: The figure depicts the distribution of the number of years each of the unique 2071 mayors in our sample was in power over the 1977-2014 period. The spikes at six-year intervals reflect the length of the local electoral cycle (i.e. six years).

Table X.1: Placebo tests using alternative arbitrary population thresholds

Variable	***Panel I:* Population developments**			
	Growth	**Birth**	**Death**	**Net migration**
Population threshold	-0.0005	0.004	0.008	-0.0004
	(0.030)	(0.008)	(0.006)	(0.027)
Controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Municipality FE	YES	YES	YES	YES
N	18674	14640	14640	18674
R^2 (within)	10.01	18.82	12.90	4.78
	***Panel II:* Housing policy**			
	Apartments	**One-family residences**	**Non-residential buildings**	**Renovations**
Population threshold	-0.372	-1.200	-0.526	-0.344
	(2.004)	(1.222)	(0.360)	(0.780)
Controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Municipality FE	YES	YES	YES	YES
N	9936	9936	9936	9936
R^2 (within)	6.11	8.66	16.49	11.10

Note: In Panel I, the respective dependent variables are the year-on-year population growth rate ('Growth'), the number of births as a share of the total population ('Birth'), the number of deaths as a share of the total population ('Death'), and the difference between the number of immigrants and emigrants as a share of the total population ('Net migration'). In panel II, the dependent variables are the absolute number of residential building permits ('Residential buildings'), permits for apartment buildings ('apartments'), permits for one-family residences ('One-family residence'), non-residential building permits ('Non-residential buildings'), and permits for renovations of residential buildings ('Renovations'). The central independent variable – 'Population threshold' – is an indicator variable for municipalities whose population size is within 2% of a placebo population threshold (details in main text). All models include controls for population size, income, unemployment, age and gender distribution, as well as a full set of year and municipality fixed effects. Standard errors clustered at the municipality level reported in brackets: *** significant at 1%, ** at 5% and * at 10%.

Table X.2: Placebo tests on building permits using forward lag

Variable	**Residential buildings**	**Apartments**	**One-family residences**	**Non-residential buildings**	**Renovations**
Population threshold	0.043	1.159	-1.116	-0.183	1.894 **
(forward lag)	(2.835)	(2.363)	(1.166)	(0.226)	(0.903)
Controls	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Municipality FE	YES	YES	YES	YES	YES
N	9936	9936	9936	9936	9936
R^2 (within)	5.38	6.12	8.66	16.44	11.20

Note: The respective dependent variables are the absolute number of residential building permits ('Residential buildings'), permits for apartment buildings ('apartments'), permits for one-family residences ('One-family residence'), non-residential building permits ('Non-residential buildings'), and permits for renovations of residential buildings ('Renovations'). The central independent variable – 'Population threshold' – is an indicator variable for municipalities whose population size is within 2% of a placebo population threshold (details in main text). In all models, we set this indicator variable equal to 1 for municipalities within a 2% range *below* the placebo threshold. It is forwarded by one period as a placebo test. All models include controls for population size, income, unemployment, age and gender distribution, as well as a full set of year and municipality fixed effects. Standard errors clustered at the municipality level reported in brackets: *** significant at 1%, ** at 5% and * at 10%.

Table X.3: Mayor reappointment results

Variable	**Baseline**	**Baseline + population controls**	**Adding economic controls**	**Adding electoral controls**
Population threshold	1.310 *	1.366 **	1.653 **	2.026 *
	(0.672)	(0.673)	(0.709)	(1.125)
Mayor tenure	-1.052 ***	-1.057 ***	-1.133 ***	-1.117 ***
	(0.074)	(0.075)	(0.094)	(0.182)
Population size (in '000)	-	0.110	0.116	1.346 **
		(0.129)	(0.124)	(0.563)
Female share	-	0.743	0.580	1.422
		(0.729)	(0.668)	(1.011)
Property tax rate	-	-	0.002	0.002
			(0.002)	(0.003)
Personal income tax rate	-	-	-0.222	0.096
			(0.451)	(0.506)
Share unemployed	-	-	-0.718 *	-0.382
	-	-	(0.379)	(0.451)
Number of coalition parties	-	-	-	-0.800
				(0.607)
Vote share largest party	-	-	-	-3.597
				(4.680)
N	3444	3444	3403	940

Note: The dependent variable is 1 when the mayor is reappointed in a future legislative term (0 otherwise). The central independent variable – 'Population threshold' – is an indicator variable for municipalities whose population size crosses a relevant population threshold during a given legislature. Mayor tenure is the number of years the mayor has been in office. Observations are at the mayor-legislature level, and standard errors clustered at the mayor level are reported in brackets: *** significant at 1%, ** at 5% and * at 10%.