Breaking Away:
The Endogenous Formation of Local Governments

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Abstract

Why do communities break away from counties to form their own municipalities? Tiebout sorting takes local governments as given, but municipal incorporation in the United States allows communities directly governed by counties to form municipalities and gain control over zoning, municipal public goods, and taxes. Using 353 U.S. incorporations from 1970 to 2020, I show that larger communities and those Whiter and richer than their counties are more likely to incorporate. I develop and estimate a model of policy choice and jurisdiction formation that distinguishes two motives: control over local policies and retention of the local tax base. The average incumbent resident of a new municipality gains welfare equivalent to 0.22% of income, comparable to a 9% increase in municipal public goods without higher taxes. About half comes from better-matched zoning, net of higher housing costs, and the rest from keeping the local tax base. Better-matched public goods contribute almost nothing because residents differ far more in their preferences over zoning than over municipal public goods. The tax-base gains come largely at the expense of residents of the remaining unincorporated county, who lose 0.013% of income on average. Giving them veto power would halve expected incorporations, mostly by blocking communities richer than their counties. Allowing new municipalities to compensate these residents would restore most of the vetoed incorporations, because compensation offsets municipalities' fiscal gains while preserving the benefits of local policy control.

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1 Introduction

Local government in the United States is highly fragmented. Cook County, Illinois, contains more than 130 municipalities, each with authority over municipal public goods, taxation, and land use. Between these municipalities lie unincorporated areas, where the county government performs the same local functions. Residents of an unincorporated area can establish their own municipality through a process known as municipal incorporation. The new municipality remains part of the county, but it takes over municipal public goods, the taxes that fund them, and zoning.[1] Incorporation therefore changes both who makes local policy decisions and how fiscal resources are shared. Why do communities choose to form their own governments, and who gains and loses from the creation of new governments?

Theories of jurisdiction formation emphasize three considerations: heterogeneous policy preferences, redistribution, and economies of scale (e.g., Tiebout, 1956; Alesina and Spolaore, 1997; Bolton and Roland, 1997). The former two motives are especially relevant to municipal incorporation. First, residents may seek policies better suited to their preferences than those chosen for the broader constituency in the unincorporated county. These differences may concern the provision of public services and land use regulations. Second, a relatively affluent community may benefit from greater control over the tax revenues generated within its boundaries. These two motives often coexist.[2] The last motive, economies of scale, would discourage incorporation, since a municipality is mechanically smaller than the unincorporated county it leaves. I do not model this in providing certain public goods, but places must overcome a formation cost that falls with a place's size, which absorbs these scale economies along with any other fixed cost of founding a government.

These motives have different implications for welfare. Establishing separate local governments can improve the match between policies and the preferences of their residents, potentially benefiting both the new municipality and the part of the county that remains unincorporated. But fiscal separation can also redistribute resources between these two constituencies. Moreover, a municipality's preferred zoning policies may provide amenities that residents value while restricting housing supply and raising housing costs. The gains from incorporation therefore need not be shared equally among residents of the new municipality, or between the municipality and the rest of the unincorporated county. The residents of the latter may be affected by the incorporation but often do not have a say, so no decision reveals whether or how much they lose.

Separating these motives is difficult for three reasons. First, the two motives are bundled in one decision. A place that incorporates obtains its own policies and keeps its tax base at the same time, so the decision alone does not reveal which of the two an incorporation aimed to achieve. Second, the welfare consequences depend on policies that are never observed, i.e. the policy bundle the entire unincorporated county, which contains the incorporator itself, would have chosen without the incorporation. Measuring them requires knowing how policies depend on who chooses them, and how much each type of resident values those policies.

[1] Incorporation does not change the functions that the county performs countywide, such as health and social services, property assessment, and courts, or functions of special districts and school districts, which provide schooling in most states.

[2] Local newspaper Rough Draft Atlanta reports that "Residents of Sandy Springs were unhappy with Fulton County services, namely police protection, and felt their tax dollars were being used to bolster the less financially stable southern part of the county. Zoning battles between Sandy Springs and the county, which advocated building multi-family residential developments, were common" (Ritchie, 2025). Sandy Springs' incorporation campaign thus sought both greater local policy autonomy and greater control over fiscal resources.

This paper separates and quantifies the motives for incorporation. I first present four motivating facts about why places incorporate and what happens afterwards, using new data on U.S. municipal incorporation activities from 1970 to 2020. I then develop and estimate a model of local policy choice and government formation from the policies of existing municipalities and the historical incorporation decisions. I use it to separate the gains from better-matched policies from those of keeping the tax base, on both sides of the new boundary, and to evaluate rules for who must approve an incorporation.

The empirical analysis requires observing not only successful incorporations, but also the places that could have incorporated and the territory they would have left behind. I refer to a geographically defined unincorporated area eligible for incorporation as an *unincorporated place*, whether or not it ultimately becomes a municipality.[3] For a successful incorporation event, I call the place an *incorporator*, and the county territory it leaves its *remainder*. An incorporator and its remainder constitute the unincorporated county at baseline before its departure. I construct a dataset of 353 municipal incorporations in the U.S. metropolitan areas in 1970–2020. I standardize the boundaries of all geographic units to 2020 boundaries such that I observe them consistently across historical periods, and link places, their remainders, and baseline unincorporated counties with their residential characteristics, local government spending, and measures of zoning policies. Separately, I compile incorporation histories recording 880 formal incorporation attempts, each attempt's stated motives, their outcomes, and referendum votes if observed. This information permits comparisons between incorporators and their remainders, as well as between successful incorporators and places with failed attempts.

Each of the following four empirical facts shapes a part of the model, and the first two also inform its estimation.

The first fact is that local policies vary with the racial and educational composition of residents. Within the same county, municipalities with larger shares of non-Hispanic White or college-educated residents see larger minimum lot sizes in single family homes, and municipalities with different residents divide their spending differently among three municipal service categories, i.e. public protection, infrastructure, and amenities. These relationships are consistent with heterogeneous valuations of local policies. In the model, a government's policies average the policies that its residents prefer, so these variations across municipalities help identify how much each type of resident values municipal services and amenity that zoning protects.

The second fact concerns which places incorporate. Places that are Whiter and richer relative to their unincorporated county, and larger places, are more likely to incorporate. Within a state and decade, a place whose non-Hispanic White share exceeds its unincorporated county's by 10 percentage points is 0.11 percentage points more likely to incorporate, against an average probability of 1.6 percent per decade, and a place whose median household income is 10 percent higher than its unincorporated county's is 0.10 percentage points more likely to incorporate. These "gap" measures indicate how different these places are relative to their counties. Doubling a place's *own* population size increases its incorporation likelihood by 0.33 percentage points. These gradients are reduced-form evidence on the model's channels: the household income

[3] Specifically, an unincorporated place is known as a "Census Designated Place" (CDP), which is a census statistical unit for a population cluster in the unincorporated county. CDPs usually have locally recognized names and borders. A prominent example is Paradise, NV (Las Vegas Strip). Section 2 provides more details on the data.

gap stands for change in tax base, the composition gaps for preference-policy match, and the population for a formation cost that falls with size. I estimate the formation model from these incorporation decisions and validate the model by running the same regression replacing the outcomes by the probabilities of the estimated model (Section 5.5).

The third fact suggests that the local policy bundle diverges between the new municipality and its remainder. Two decades after incorporation, the new municipality spends a share of its budget on public protection 8.4 percentage points lower than its county. In the remainder, the share of new single-family homes built on lots below the new municipality's minimum lot size rises by about 10 percentage points within a decade, while in the new municipality, the share of new single-family homes built below its minimum lot size stays stable. Despite not directly detecting changes in *legal* zoning restrictions, these measures describe changes in the built environment that is shaped by regulations. Fact 3 is not used in estimation, but it supports the model's premise that a new municipality chooses policies that differ from the county's.

Fourth, incorporators subsequently experience stronger population growth and increases in their college-educated share relative to places with unsuccessful incorporation attempts. An event study shows that incorporators experience an increase of population by approximately 23% and of college-educated share by 2.7 percentage points. These outcomes are relevant because municipal services and land use policies affect the attractiveness of locations and potentially induce residential sorting. I interpret these estimates descriptively, because places whose attempts succeed may have grown faster even without incorporating. Fact 4 shows that residents' locations change after incorporation, which the benchmark welfare calculation holds fixed and an extension relaxes.

To quantify the welfare consequences of changing jurisdictional boundaries, I develop a model of local policy choice and jurisdiction formation. Heterogeneous households value municipal public goods, zoning amenities, and housing differently. Residents' demand for local policies involves trade-offs between a larger scale of public goods and a higher property tax that reduces consumption, and between stricter zoning that offers amenities and the resulting increased housing cost. Heterogeneous costs and benefits thus imply different demand for local policies for different types of residents. Local governments choose the level and composition of public spending, a property tax to fund the public goods, and zoning restrictions. Policies then reflect the preferences of their constituencies through probabilistic voting, and the chosen local policy bundle averages the ideal policies of residents across all types.

Incorporation changes the constituency that determines local policies: the new municipality chooses its own policies, while the remainder's policies reflect the residents who continue to be served by the county for municipal functions. Therefore, a place incorporates when the gain of its residents, the difference in utility between being incorporated and staying in the unincorporated county, exceeds a formation cost that falls with the number of households.

A useful property of the model is that the welfare consequences of incorporation can be decomposed into preference-policy match ("policy fit") and redistribution. Better-matched policies generate a nonnegative gain for the average resident of both the incorporator and its remainder. These gains are, however, second order in differences between the two constituencies' residential compositions. In contrast, differences in fiscal resources per household generate a first-order redistribution channel, where an affluent incorporator

can benefit by retaining more resources for its own municipal services, while the remainder may lose fiscal capacity. For places that resemble their county, the tax base therefore dominates the incentive to incorporate. Policy fit matters where preferences differ a lot, as they do over zoning.

I estimate the policy-preference parameters using variations in observed policies and in residential composition across existing municipalities. Within a county, municipalities with different residents choose different spending levels, spending mixes, and minimum lot sizes. How these policies covary with the shares of each type of resident identifies each type's valuations of public goods and of the amenity that zoning protects. Estimation results show that residents across races (non-Hispanic White or Other) and education attainment (college or below), value public goods similarly in total ("scale" of municipal service provision): their preferred tax rates range from 15 to 22 percent, and equal valuations for public goods are not rejected. They disagree about the ideal mix of the municipal services: Other residents put more weight on public protection, and college residents more on amenities. In contrast to the similar valuation of the scale of municipal goods, valuations of zoning differ by an order of magnitude, mainly by race: White residents prefer minimum lots of 22,600 to 26,900 square feet, and Other residents 1,700 to 6,900 square feet. To measure the housing cost of zoning, I estimate the relationship between residential minimum lot size and quality-adjusted housing prices. A 10 percent larger estimated minimum lot size is associated with approximately 1.0 percent higher housing prices. I then estimate parameters in the formation model from incorporation decisions across places and decades, allowing the probability of formation to depend on modeled gains, place size, and idiosyncratic place-specific shocks. I find that places with larger modeled gains incorporate more often than other places in the same state and decade, and larger places incorporate more often at the same gain.

Three pieces of evidence that the estimation does not use support the model. First, in 151 incorporation referenda, a gain of 1 percent of income moves a close vote by 7.7 percentage points. This rests within the range implied by Fajgelbaum et al. (2023). Second, the model predicts a tightening of zoning in 70 percent of the places whose proponents stated that they wanted to restrict development. Third, the model predicts each place's probability of incorporation from its modeled gain, which depends on how the place's income and composition differ from its county's, and I run the Fact 2 regression on these probabilities. The model reproduces the income gradient (0.095 percentage points per 10 percent of income, against 0.098 in the data), because a richer place keeps a larger tax base. It does not reproduce the White-share gradient, which is slightly negative in the model and positive in the data. Policy fit rewards a place that differs from its county in either direction, so the model gives no reason for Whiter places in particular to incorporate more often. However, preferences over neighbors, including racial motives, could explain this but my current model leaves them out.

The estimated model yields three main findings. First, the average resident of a newly incorporated municipality gains the equivalent of approximately 0.22% of income. Keeping local tax base contributes about 0.10%, while zoning changes contribute approximately 0.12% net of increased housing costs due to zoning. Better-matched public goods contribute less than 0.01%. Although municipalities differ in the composition of their expenditures, residents value public goods similarly, so tailoring public goods to them adds little. By contrast, residents place substantially different values on the amenities protected by zoning regulation. These results suggest that the ability to control zoning and fiscal resources, rather than public good differentiation alone, is central to the modeled benefits of incorporation. The baseline welfare calculation holds incumbents'

residential locations fixed, while allowing housing prices to reflect local zoning choices. An extension in Section 5.7 that allows residential adjustment in the incorporator reduces the estimated average gain to 0.15 percent, but this does not yet constitute a fully closed spatial equilibrium.

Second, the gains are unevenly distributed. Inside new municipalities, the gains go to the residents whose preferred zoning prevails, while the others pay higher housing costs. The welfare consequences also extend beyond the new municipality. The average resident of the remainder loses the equivalent of 0.013 percent of income, primarily through loss in fiscal resources. The loss is small on average because the median incorporator has 4.5 percent of the households of its unincorporated county, and it varies with the relative size and tax base of each incorporator-remainder pair.

Third, incorporation rules shape the configuration of political jurisdictions. Under the baseline institutional arrangement modeled in the paper, an unincorporated place can often decide whether to form a municipality while the remainder does not have a separate veto power. In a counterfactual that also requires the remainder's average resident to be no worse off ("double consent"), expected incorporations fall by approximately 52 percent. This counterfactual rule disproportionately prevents relatively more affluent places from leaving the unincorporated county. However, allowing the new municipality to compensate the remainder for its welfare loss restores most of these prevented incorporations. Expected incorporations rise from approximately 168 under double consent alone to 326 with compensation, compared with 352 under the baseline. This is because the gains from policy fit are positive for the remainder, and the loss comes from losing an affluent part of the tax base. Therefore, the payment that covers that loss is roughly the tax base the new municipality takes, so it keeps its gain from better-matched policies and its probability of incorporating only slightly falls from the baseline. The result illustrates how a transfer can preserve gains from local autonomy while addressing costs imposed on residents outside the new municipality. California's revenue-neutrality principle provides a relevant institutional example, although its legal criterion concerns the revenue loss for the county rather than the complete welfare loss modeled here.[4]

Taken together, the results indicate that the decision to create a new municipal government is not only a search for better-matched public services, the classical Tiebout motive. Incorporation also changes control over fiscal resources and zoning, with consequences for residents inside and outside the new jurisdiction. The institutional rules govern who may approve incorporation and whether losses can be compensated, and they crucially shape the welfare consequences.

The paper contributes first to the literature on endogenous political jurisdictions. Theoretical studies of national formation, breakup, and secession emphasize the trade-offs among preference heterogeneity, economies of scale, and redistribution (Buchanan and Faith, 1987; Alesina and Spolaore, 1997; Bolton and Roland, 1997; Jehiel and Scotchmer, 2001). Other models examine the formation and stability of jurisdictions in environments with mobile households and land markets (Konishi, 2008; Gravel and Oddou, 2014). Quantitative work has studied the stability of national boundaries and the formation or consolidation of local governments, including school district mergers and municipal mergers (Gordon and Knight, 2009;

[4]California's revenue-neutrality rule, in force since 1992, comes close to compensation, but it pays the county government for lost revenue rather than the remainder's residents for lost welfare. After 1992, the remainder lost tax base in 2 of 13 California incorporations, against 18 of 31 before, a larger drop than the model's version of the rule predicts; in practice, the rule has worked more like a veto, although the evidence rests on 13 incorporations.

Desmet et al., 2011; Weese, 2015; Allen, 2023). I contribute by quantifying different welfare mechanisms behind jurisdiction formation in the United States, allowing newly established governments to jointly choose municipal public goods, tax to fund them, and zoning policies, and explicitly accounting for the remaining unincorporated constituency. Though I do not explicitly allow for economies of scale in providing municipal public goods, I estimate that the formation cost of jurisdiction per household decreases with size, which is consistent with economies of scale in the fixed cost of founding a government.[5]

The paper also contributes to empirical work on the formation of local governments in the U.S. Previous studies have examined the political, racial, and fiscal correlates of municipal incorporation (Burns, 1994; Musso, 2001; Alesina et al., 2004; Kenny and Reinke, 2011). More recently, McCasland et al. (2026) show that the Great Migration contributed to the creation of predominantly White municipalities and persistent metropolitan fragmentation. My analysis focuses on a later period and uses observed fiscal policies and measures of land use policies to quantify different sources of incorporation gains. It does not imply that these mechanisms exhaust the reasons for municipal formation. In particular, the estimated model does not fully explain the positive relationship between a relatively higher non-Hispanic White share and incorporation probability, leaving room for political or social considerations beyond the modeled valuation of public goods and zoning.

Second, the paper speaks to the literature on fiscal federalism and decentralization. The Tiebout tradition emphasizes the benefits of households choosing among local governments that offer different combinations of taxes and public goods. Theories of fiscal federalism examine the trade-offs between centralized and decentralized provision, including the effects of preference heterogeneity and political incentives (Oates, 1999; Besley and Coate, 2003). Quantitative studies investigate how decentralized governments affect local policy, fiscal externalities, or the allocation of infrastructure under a given governmental structure (Calabrese et al., 2012; Jannin and Sotura, 2020; Bordeu, 2025; Ruggieri, 2025). My contribution is to endogenize the decision to decentralize itself. The same preference differences that influence preferred local policies also influence whether residents seek an independent jurisdiction, whether the surrounding constituency would oppose that decision, and whether residential sorting responds to these changes.

Third, the paper contributes to the political economy of land-use regulation. A long literature studies the relationship between property taxation, zoning, housing costs, and the incentives of existing residents to restrict development (e.g., Hamilton, 1975; Fischel, 2001; Calabrese et al., 2007; Hilber and Robert-Nicoud, 2013). Quantitative urban models evaluate the effects of land-use regulation on housing affordability, residential sorting, and welfare, including the consequences of regulations chosen by existing local governments (Hsieh and Moretti, 2019; Parkhomenko, 2023; Macek, 2026). My paper studies a political choice that precedes observed zoning regulations: whether residents establish a new municipality to obtain greater control over land use. By evaluating both the amenity benefits and housing costs of zoning, I quantify this motive alongside

[5]Recent quasi-experimental studies of municipal mergers do not establish economies of scale in providing individual public goods. Merger reforms in Denmark, the Netherlands, and Finland did not lower aggregate spending (Blom-Hansen et al., 2016; Allers and Geertsema, 2016; Moisio and Uusitalo, 2013), and in Denmark jurisdiction size did not matter for spending on most services. The clearest evidence of scale effects concerns administrative costs (Blom-Hansen et al., 2014; Allers and Geertsema, 2016; Blesse and Baskaran, 2016; Swianiewicz et al., 2021), although some studies find savings in total or service spending, for example Reingewertz (2012) for Israel and Duncombe and Yinger (2007) for very small school districts in New York.

redistribution and public-good provision. In doing so, the paper connects the formation of governments to the regulation of urban development.

Section 2 describes municipal incorporation and the data. Section 3 presents the four empirical facts. Section 4 develops the model. Section 5 estimates the model and reports the welfare consequences. Section 6 examines counterfactual incorporation rules. Section 7 concludes.

2 Municipal Incorporation and Data

Incorporation transfers two major powers from the county government to a new municipal government: municipal public goods, with the taxes that fund them, and zoning.[6] Subject to state-specific procedures, incorporation often requires a political process that starts from the submission of a proposal, to an institutional review, and to a final approval.[7] In most states, the process culminates in a referendum. States vary in their legal frameworks for incorporation.

2.1 Institutions and political geography

Municipal incorporation creates a general-purpose local government for a place that was not part of any municipality. Before incorporation, the government that serves unincorporated land, usually the county, manages the place's municipal public goods, such as police and fire protection, sewerage, and solid waste collection, and its zoning. Afterward, a municipal government decides the community's public goods and zoning. Figure 1 illustrates the change. When place A incorporates, its residents choose their own local policies, and the constituency of the unincorporated county shrinks to the residents of places B and C and of the rest of the unincorporated land. Incorporation does not change the functions that the county provides countywide, such as health and judicial services, or those that special districts provide, such as schooling.

State law determines how a community incorporates. The share of registered voters who must sign is 10 percent in Washington and 25 percent in California, but 60 percent in Idaho and two thirds in Kentucky.[8] A court, or a state or regional commission, then reviews the petition, often with a study of fiscal feasibility, and

[6] In New Jersey, New York (from 1980), North Dakota, Pennsylvania, South Dakota, Wisconsin, and Michigan (for new cities), unincorporated territory lies in townships, called towns in New York and Wisconsin. Where the township zones the territory that a new municipality takes over, I treat the township as the government that the place leaves. This applies to 16 of the 353 incorporations, 12 in New York and 4 in Wisconsin. Appendix B gives the rule by state and period. New England is not in the sample. In Connecticut, Massachusetts, and Rhode Island, all territory lies inside towns, and towns zone their land; the Census of Governments counts them as general-purpose governments. A New England community gains control of its zoning by forming a new town or, in Connecticut and Vermont, a borough or village inside its town. From 1970 to 2020 this happened four times, all in Maine and all by forming a new town: Ogunquit (1980), Long Island (1993), Frye Island (1998), and Chebeague Island (2007), with about 2,200 residents in 2020 combined.

[7] Among the 353 incorporations, there are 130 with histories. From the step that started a successful campaign, such as a petition or a feasibility study, it took a median of 1.4 years from that first step to incorporation, and a third took more than two years; Citrus Heights, California, took twelve. Most places incorporated at their first recorded attempt (82 percent), 13 percent at the second, and 5 percent at the third or later, or 1.26 attempts per incorporation. In California the median is 2.1 years, and 40 percent of places needed two attempts or more.

[8] Where the share is low, a required institutional review is common, often with a study of fiscal feasibility, and the voters of the proposed municipality decide in a referendum. Where it is high, a court or the county board decides and no election follows, as in Kentucky and Idaho.

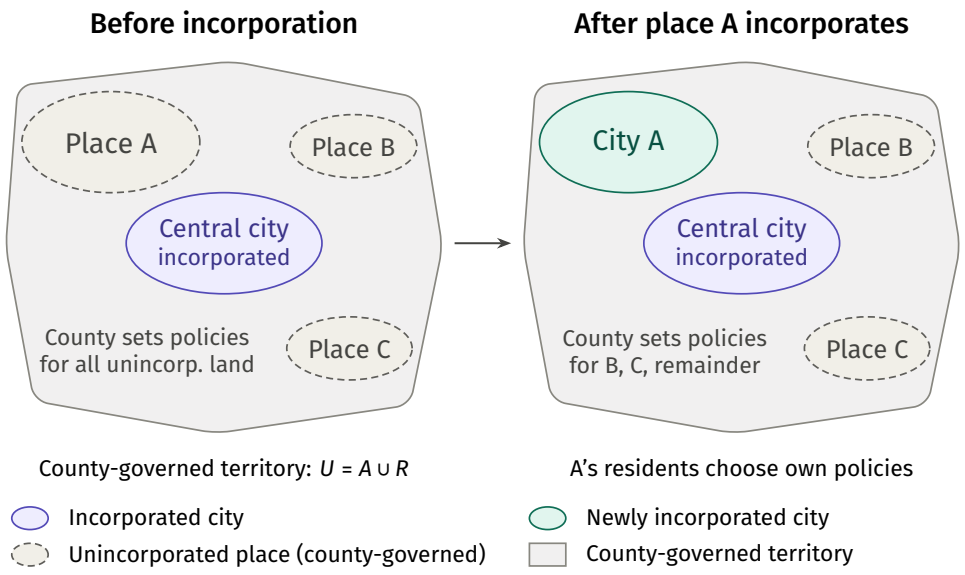


Figure 1: Municipal incorporation changes who sets policies

Before incorporation, the county sets policies for all unincorporated land, including places A, B, and C. After A incorporates, municipality A sets its own public goods, taxes, and zoning; the county keeps governing the remainder R.

the voters of the proposed municipality decide in a referendum.[9] In some states, such as Florida, Georgia, and North Carolina, the legislature must also approve. Florida, for example, requires a special act and a feasibility study and sets thresholds for population, density, and distance from existing municipalities.

Creating a municipality therefore takes more than winning a local vote, and how hard it is differs by state. California requires 500 registered voters, a review by the county's Local Agency Formation Commission, and, since 1992, a finding that the new city is revenue neutral for the county. In Texas, a place of 201 residents can incorporate: 50 voters petition the county judge, who orders an election, and no state body reviews the petition. In my sample, California incorporations took 1.56 attempts each on average, and the median California incorporator had 6,840 households at the census before it incorporated; Texas incorporations took 1.11 attempts, and the median Texas incorporator had 159 households (Appendix Table A.1).

Incorporation is often contentious in local politics, and the disputes center on the residents who stay behind. In Georgia, DeKalb County's budget for fiscal year 2016 warned that incorporations take areas that generate more tax revenue than they receive in services, so that the remaining unincorporated area must raise property taxes or cut services (DeKalb County, 2015). In Louisiana, in the debate over the incorporation of St. George, the government of the East Baton Rouge Parish (a parish is Louisiana's county) stressed the

[9] In most states the county's role is ministerial: a county judge or county commission orders the election once the petition meets the statutory requirements, as in Texas and Missouri. A county-level body can deny an incorporation in a few places: California's Local Agency Formation Commissions, created in 1963; Washington's county boundary review boards, created in 1967, which since 1990 can deny only proposed cities of fewer than 7,500 residents; Miami-Dade County, whose 1957 charter reserves the creation of new municipalities to the county commission; and Illinois counties of 150,000 to 1,000,000 residents with an official plan, since 1969, if the county board so resolves. All four predate the sample period. Two later changes apply to the sample: since 1992, a California commission must find that an incorporation is revenue neutral for the county, which applies to 16 of the 46 California incorporations; and St. Louis County, Missouri, has reviewed incorporations through a boundary commission since 1989, which applies to two of its three incorporations. Appendix B gives the rules by state and period.

projected loss of revenue and the absence of a vote for residents outside the proposed city. [10]

The state-level variation in the entry barrier of jurisdictions, and the disputes between the incorporator and the unincorporated remainder, motivate the two counterfactual approval rules of Section 6: a separate vote for the residents who remain under the unincorporated county, and that vote combined with compensation from the new municipality, which California's revenue-neutrality rule resembles.

2.2 Data

Geographic units. The analysis compares three territories. Using Figure 1 for illustration, *unincorporated places* A, B, and C are Census Designated Places (CDPs): a Census-defined statistical unit for a named population cluster without a municipal government. They are concentrations of population, often with locally recognized names and boundaries, such as East Los Angeles, CA, and Paradise, NV (where the Las Vegas Strip is located), while the rest of the unincorporated county is sparsely settled. I therefore take the unincorporated place as the unit that can incorporate, and I take its boundary as given.

Place A and the other unincorporated areas of its county form the *unincorporated county* U, which the county government governs. The *remainder* $R \equiv U \setminus A$ is the territory that stays unincorporated when A incorporates, so that $U = A \cup R$. All residents of U determine its local policies and pool their resources to fund its public goods; when A leaves, the constituency changes to R. A place that incorporates is also called an *incorporator*. Throughout, U is the unincorporated part of the county at the start of each decade, outside the municipalities that exist then ("central city" in Figure 1). For each incorporator A, I compute R, and compare an $A - R$ pair in studying the post-incorporation policy changes in subsection 3.3.

I measure all geographic units within their 2020 Census boundaries in all years, and I follow a place that incorporates within the 2020 boundary of the municipality it becomes. Constant boundaries prevent a place from gaining population only because its boundary expands.[11]

Incorporations, attempts, and referenda. I study 353 incorporations in the U.S. Metropolitan Statistical Areas (MSAs) from 1970 to 2020.[12] The dates of incorporation come from the Census Boundary and Annexation Survey and from incorporation histories that I collect. The incorporations concentrate in the South and West: California has 46, Texas 44, North Carolina 38, Missouri 23, Illinois 22, and Florida 21.

The incorporation histories record 880 attempts to incorporate a community: 528 succeeded, of which 350 are among my 353 incorporations sample, and 352 failed. For each attempt they record its stages, from the petition to the referendum and any legislative approval, and 277 referenda with vote share in favor of and against incorporation. They also record the motives that proponents stated, coded from newspaper reports,

[10] The St. George litigation ended in a state supreme court decision favoring incorporation (Appendix B).

[11] The Census Bureau delineates CDPs for statistical purposes, and their boundaries have no legal status. The 2020 boundary of a municipality need not coincide with the boundary proposed when it incorporated. I take each place's boundary as given and do not model its choice.

[12] My event file, built from the Census Boundary and Annexation Survey and the incorporation histories, dates 868 incorporations from 1970 to 2020. Of these, 689 created a new municipality, and 480 of those are municipalities in an MSA in 2020. I drop 127 without a credible census baseline before incorporation: 76 have no census data for their territory, and 51 have less than 80 percent of their population in historic census block groups with usable data (Appendix B).

official documents, and local histories. Among the 353 incorporations, I found a record of motives for 284 of the 353 incorporators, from the attempt that succeeded. Proponents sought better or different public goods in 125 (35%), to restrict development in 78 (22%), other control of land use in 98 (28%), to avoid annexation by a neighboring city in 129 (37%), and to stop subsidizing other areas in 24 (7%); a place can state several motives. The 69 without a record are mostly small places.

Demographics and constituency. Population, residential composition, income, and other socioeconomic characteristics come from the 1970 to 2000 decennial censuses and the five-year American Community Surveys (ACS) estimates in 2009–2013 and 2018–2022, harmonized to 2020 geography. I partition adult residents (aged 25 and older) into four types by race (non-Hispanic White or Other) and education (college and above or less than college): White college, Other college, White non-college, and Other non-college. The shares of my empirical types are computed from the universe of adults. However, the agents of my model are households, and the types are defined by the race and education of the householder (head of household), whose data is not consistently available across all decades. Therefore, I use the shares of adult types as proxies for the shares of household types.[13]

Public goods spending and taxation. Municipal and county finance accounts come from the Census of Governments (COG) from 1977 to 2022. I group eight expenditure functions into three categories of municipal public goods: protection (police, fire, and protective inspection), infrastructure (highways, sewerage, and solid waste), and amenities (parks, recreation, and libraries). Other functions, such as schools, hospitals, and courts, are outside the analysis. In the model, I assume that all municipal public goods are funded by property tax, which differs from observed property tax in county assessor data, which includes the county's share, and levies from special districts. The municipalities' level of spending on the three categories and the spending share of each category measure the scale and the mix of municipal public goods, respectively.

Zoning, lots, and house prices. The county assessor records from ATTOM report, for each property, the lot size, the structure, the year built, and last sales. The main measure of zoning is the minimum lot size (MLS) for single family residences (SFRs), which I infer from bunching in the distribution of lot sizes within a municipality, following Song (2025) and Cui (2024). Figure 2 illustrates the method. My estimated MLS uses only lots built after 1970 or after the municipality's incorporation, whichever is later, so that it reflects the zoning of the current government rather than lots built under an earlier regime. To describe what is built after incorporation, I use the lot sizes of new SFRs, by decade built, in the incorporator and in its remainder. For the cost of zoning, I use the sales in the assessor records to construct a quality-adjusted house price for each municipality. Table 1 lists the samples that each part of the analysis uses.

[13] In the 2018 to 2022 ACS, the non-Hispanic White shares of householders and non-Hispanic White shares of adults correlate at 0.99 across the 8,596 municipalities of Fact 1, and the college shares of householders and of adults correlate at 0.98.

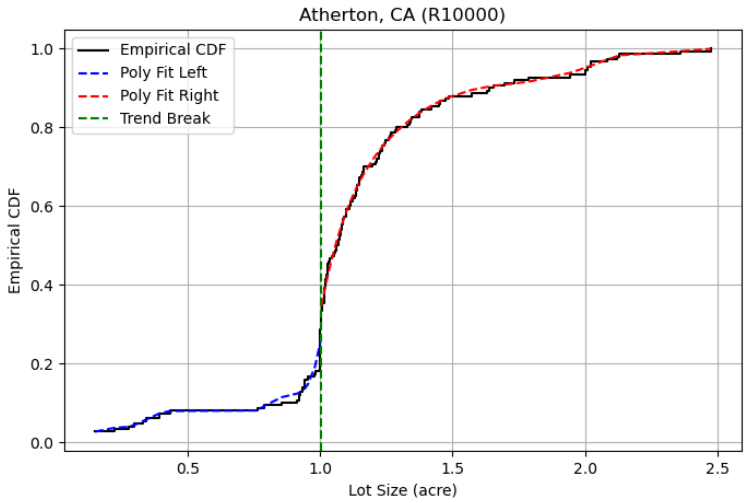


Figure 2: Estimating Minimum Lot Size (MLS) in Atherton, CA (R1) following Song (2025)

Empirical distribution of single-family lot sizes in the R1 district of Atherton, California, with polynomial fits on either side of the estimated break, the minimum lot size.

Table 1: Samples

Analysis	Unit	Period	Observations	Incorporations
Fact 1, zoning block	municipality	2018–2022	7,998	
Fact 1, fiscal block	municipality	2017	8,601	
Cost of zoning (κ)	municipality	2010–2022	6,541	
Fact 2 and formation	place-decade	1970–2020	21,742	352
Referenda	first referendum	1970–2020	151	
Fact 3, spending mix	incorporator	1977–2017		186
Fact 3, new lots	incorporator	1970–2020		195
Fact 4	place-decade	1970–2020	141 failed places	326
Gains and approval rules	incorporator	1970–2020		352

Municipalities are counted after dropping counties with a single municipality from regressions with county effects; they lie in 948 (zoning), 971 (public goods), and 799 (cost of zoning) counties. The preferences over public goods are estimated on 8,751 municipalities in 1,121 counties, including those in single-municipality counties. Fact 2 excludes place-decades in which a dated state rule made incorporation impossible; Dublin, California (1982), lacks the inputs of the tax-base gap. Fact 3: incorporators with accounts a decade after incorporation (spending mix) and incorporators with new single-family lots in the incorporator and the remainder (new lots). Fact 4: incorporators with outcomes after incorporation, against places whose formal attempt to incorporate failed and that had not incorporated by 2020.

3 Motivating Facts

This section presents four empirical facts about which places incorporate and what changes after they do. They motivate the three parts of the model in Section 4: local policies that depend on who lives in a jurisdiction, a decision to incorporate that weighs the gains from a government of one's own against a formation cost that falls with size, and residents who can move once the choice menu (jurisdictions that provide differentiated policy bundles) changes. Fact 1 shows that within a county, municipalities whose residents differ in race and education choose different zoning and municipal public spending. Fact 2 shows that places with Whiter residents and higher incomes than the jurisdiction they would leave, as well as larger places, are more likely to incorporate. Fact 3 shows that after incorporation the new municipality's spending mix moves away from the county's, and that new construction on the two sides of the new boundary diverges: the incorporators see a lower share of small lot construction. Fact 4 shows that new municipalities grow faster than places whose attempts to incorporate failed, and that their college share rises.

The facts play different roles in the quantitative analysis. Fact 1 is the reduced form of the model's policy rules: the rules make each policy a function of the composition of residents. The variations of Fact 1 help discipline the preference parameters of heterogeneous residents in Section 5. Fact 2 describes the incorporation decisions from which the formation model is estimated, and the model restricts the shape of the Fact 2 regression, a restriction that Section 5.5 tests. Facts 3 and 4 provide untargeted moments for the model. Fact 3 checks the premise of the model that a new municipality chooses policies that differ from the county's, and Fact 4 is the benchmark for the extension in which residents move after incorporation (Section 5.7).

3.1 Fact 1: Municipal spending and zoning vary with constituency

A place gains from a government of its own only if its residents would choose policies that differ from policies chosen by residents of the unincorporated county. Fact 1 shows that within a county, municipalities whose residents differ in race and education choose different zoning and different spending: Whiter municipalities zone for larger lots and spend less per household, while more educated municipalities zone for larger lots and spend more.

I partition all residents by four demographic types: race (non-Hispanic White or Other) and education (college educated or below). This section uses the two margins, the share of adults who are non-Hispanic White, W, and the share who are college educated, C, which are measured more precisely in census at granular scale than the four joint shares. The types are coarse, observable, and persistent dimensions of household heterogeneity; they proxy for heterogeneity in tastes for local policies. [14]Race and education stand for many differences between groups, such as exposure to policing and schools, discrimination in housing markets, political representation, income, homeownership, and tastes for amenities.[15] For the argument of this paper,

[14]This follows a long practice in public economics. Cutler et al. (1993) ask how the demographic composition of a community maps into the bundle of services its government provides, and distinguish individual demand, community preferences, and sorting. Rhode and Strumpf (2003) use race, education, and other characteristics as proxies for heterogeneous preferences for public goods. Alesina et al. (1999) relate ethnic fragmentation to the level and the composition of local spending and Alesina et al. (2004) model the formation of jurisdictions as a trade-off between economies of scale and heterogeneity in race and income.

[15]Each of these differences could affect local policies. More segregated cities spend less on public goods (Trounstine, 2016), and

each of these is a reason why constituencies of different composition may want, or obtain, different policies.

A local policy bundle consists of zoning and municipal public spending. Zoning is measured using logged municipality's minimum lot size (MLS), an estimate of the smallest lot that its zoning allows for a new single family residence (SFR), inferred from bunching in the lot sizes of SFRs built after 1970 or after incorporation, whichever is later (Section 2).[16] Municipal public spending is the municipality's spending on three categories of public goods in the 2017 Census of Governments: protection (police, fire, and protective inspection), infrastructure (highways, sewerage, and solid waste), and amenities (parks, recreation, and libraries). Municipal spending per household measures the level of public goods, and the shares of the three categories measure their mix. Therefore, the three margins, MLS, municipal spending per household, and spending mix describe how densely residential units are allowed to build, how much a government spends, and how to allocate the funds. All regressions compare municipalities in the same county and are estimated on municipalities only.[17] Comparing municipalities in the same county holds fixed the county's own policies, the regional housing market, and the division of responsibilities between different jurisdictions, so the gradients describe how policy differs between nearby jurisdictions with different residents.

Figure 3 shows the zoning gradients. Each panel plots the log MLS against one share (White or college), holding the county and the other share (college or White) fixed, so that its slope is the coefficient on that share in Table 2, column 1, where both shares enter linearly. Within a county, Whiter and more educated municipalities zone for larger lots. Among 7,998 municipalities in 948 counties, a 10pp higher non-Hispanic White share comes with a minimum lot regulation 9.5% (9.1 log points) larger, and a 10pp higher college share is associated with a minimum lot regulation 4.9% (4.7 log points) larger (Table 2, column 1).[18]

Figure 4 shows spending per household on the three categories of municipal public goods, for 8,601 municipalities in 971 counties. A college share higher by 10 pp comes with spending per household higher by 14.8% (13.8 log points), and a non-Hispanic White share higher by 10 pp with spending lower by 8.3% (8.7 log points) (Table 2, column 2). To interpret these results, Section 4 shows that a government spends on municipal public goods a share $t/(1+t)$ of its residents' housing expenditure, so spending per household is $[t/(1+t)]\, e$, where e is housing expenditure per household, i.e. the tax base, and t is the property tax rate set to fund the municipal public goods. The logged spending per household is therefore the sum of the logged tax base and the logged tax rate. More educated municipalities spend more in proportion to their larger tax base:

land-use regulation sustains segregation (Trounstine, 2020); support for redistribution rises with the share of recipients from one's own racial group (Luttmer, 2001). Exclusionary zoning, including large minimum lots, is more common where residents are Whiter, richer, and more educated (Bartik et al., 2025; Song, 2025); it spread with the arrival of Black migrants during the Great Migration (Cui, 2024); and much of racial segregation lies across the boundaries of local governments (Monarrez and Schönholzer, 2023).

[16] Song (2025) and Cui (2024) also infer minimum lots from bunching in lot sizes. Both papers note that zoning became widespread among American municipalities around 1970.

[17] The MLS is estimated for municipalities only. Counties zone large and heterogeneous territories that include rural and agricultural land, bunching in their lot sizes is harder to detect and to interpret, and the model's county zoning therefore has no direct counterpart in the unincorporated areas. Bartik et al. (2025) find that unincorporated areas typically face less restrictive zoning regulations, and that they account for 42% of housing growth.

[18] The gradients also appear in regulatory data directly collected from zoning ordinances. Bartik et al. (2025) code minimum lots from the ordinances of 3,139 of these municipalities. Applying the same specification to their data, the coded minimum lot rises by 5.4% (5.3 log points) per 10 pp of White share and by 7.4% (7.1 log points) per 10 pp of college share, against 7.3% (7.0 log points) and 7.8% (7.5 log points) for the estimated minimum lot of the same municipalities. The municipalities they code are larger, less White, and more educated than the others.

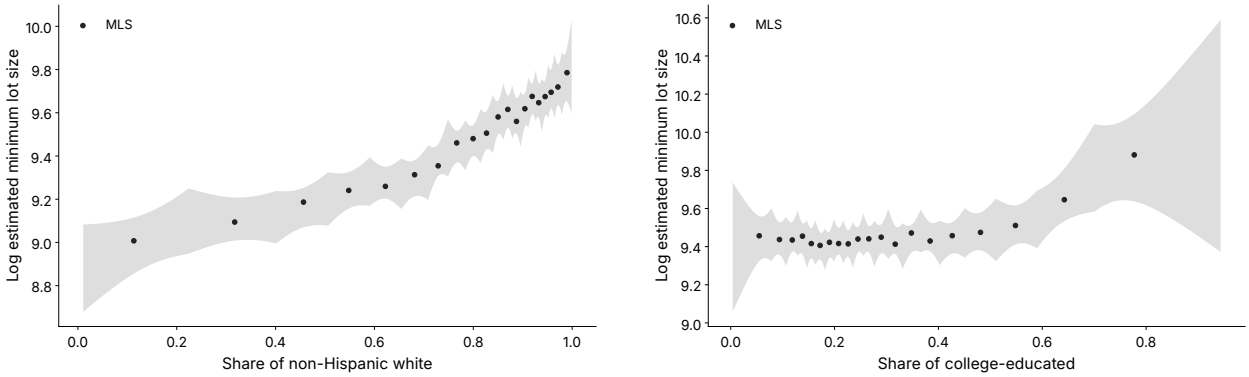


Figure 3: Local policies differ with constituency: zoning stringency

Binned scatter plots of the log cohort minimum lot size on the share of non-Hispanic White adults (left) and of college-educated adults (right). Each panel conditions on county effects and on a linear term in the other share, and is evaluated at the mean of the other share, so that it is the graphical counterpart of Table 2, column (1), in which both shares enter. Twenty quantile bins and uniform 95% bands with county-clustered standard errors (Cattaneo et al., 2024). The sample is the 7,998 municipalities in 948 counties with a cohort minimum lot size, excluding municipalities alone in their county. In each zoning cell with enough lots, the minimum lot size is the break in the lot-size distribution that the bunching test accepts, and otherwise the candidate break, the repeated mode, or the first decile, in that order; the municipality's minimum lot size is the lot-weighted geometric mean over its cells.

Table 2: Local policies differ with constituency

	(1) Log MLS	(2) Log exp. per HH	(3) Log tax base	(4) Log tax rate	(5) Log exp. per HH	(6) Public safety	(7) Infra-structure
White share (per 10 pp)	9.11	−8.67	3.39	−12.06	−2.93	−1.02	0.54
	(0.57)	(1.05)	(0.22)	(1.10)	(0.92)	(0.22)	(0.22)
College share (per 10 pp)	4.74	13.80	14.57	−0.76	7.31	0.30	−0.84
	(0.86)	(0.98)	(0.32)	(1.07)	(1.77)	(0.33)	(0.34)
Log population, log income					yes	yes	yes
Mean of outcome	9.47	7.15	9.56	−2.41	7.15	38.5	51.5
Municipalities	7,998	8,601	8,601	8,601	8,601	8,601	8,601
Counties	948	971	971	971	971	971	971

All regressions include county effects; standard errors clustered by county in parentheses. Columns (1) to (5): log points per 10 pp of the share; columns (6) and (7): pp of spending on the three categories of public goods. Column (1): log cohort minimum lot size of single-family homes, the specification of the zoning block. Columns (2) to (4): log spending per household on the three categories, its tax base (residents' housing expenditure per household), and its tax rate (spending over housing expenditure, $t/(1+t)$); column (2) equals column (3) plus column (4). Columns (5) to (7) add log population and log household income. Both shares enter every regression.

per 10 pp of college share, the tax base is 15.7% (14.6 log points) larger, and the tax rate does not change relative to less educated municipalities. Per 10 pp of White share, municipalities choose a tax rate 11.4% (12.1 log points) lower on a tax base 3.4% (3.4 log points) larger (columns 3 and 4). With log population and log household income added, spending per household still rises with the college share, by 7.6% (7.3 log points), and falls with the White share, by 2.9% (2.9 log points) (column 5).

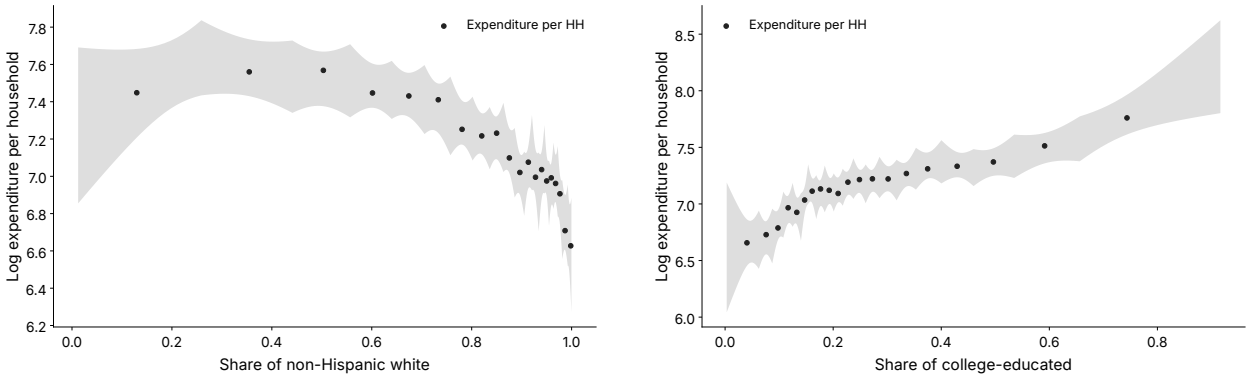


Figure 4: Local policies differ with constituency: expenditure per household

Binned scatter plots of log spending per household on the three categories of public goods on the share of non-Hispanic White adults (left) and of college-educated adults (right). Each panel conditions on county effects and on a linear term in the other share, and is evaluated at the mean of the other share and at the sample mean of the outcome. Twenty quantile bins and uniform 95% bands with county-clustered standard errors. 8,601 municipalities in 971 counties. Table 2, columns (2) to (4), splits the gradients into the tax base and the tax rate.

The mix of spending varies with composition as well. Within a county, a White share higher by 10 pp comes with a share of spending on protection 1.02 pp lower and a share on infrastructure 0.54 pp higher, and a college share higher by 10 pp with a share on protection 0.3 pp higher and a share on infrastructure 0.84 pp lower (Figure 5 and Table 2, columns 6 and 7).[19]

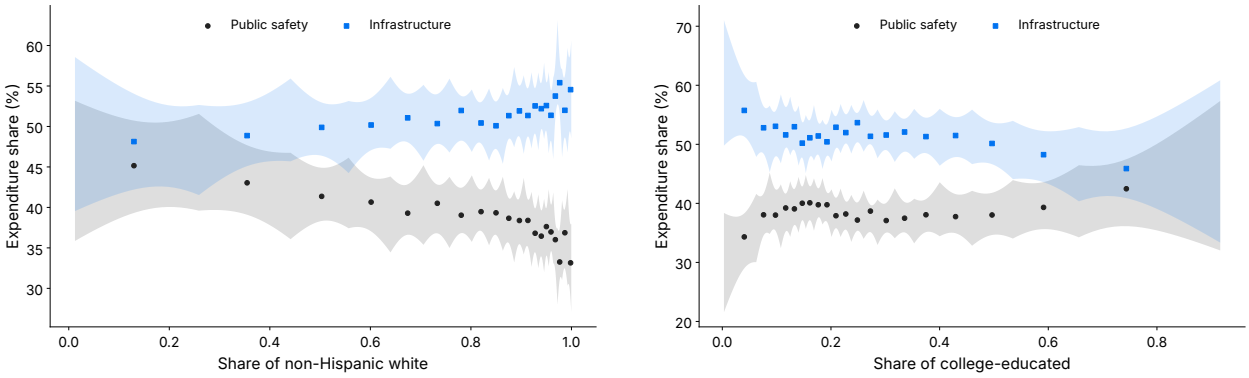


Figure 5: Municipal public good mixes also differ by constituency

Shares of spending on protection (public safety) and infrastructure within the three categories, with county effects, the other share, log population, and log household income as controls; 20 quantile bins and uniform 95% bands with county-clustered errors. 8,601 municipalities in 971 counties.

These gradients are equilibrium associations, not effects of composition on policy. The policy rules of

[19] Amenities spending is omitted; all three spending shares sum up to 1.

Section 4 produce them when each government chooses policy for its own residents and the types differ in what they value. Similar gradients arise if residents sort toward the policies they prefer, or if the cost of providing public goods, or the need for them, varies with composition; Section 5 states the assumption under which they reveal preferences.[20] Local policy bundle varies with residential composition of a jurisdiction, which suggests that changing political constituency, as a result of incorporation, may change local policies. Places with more different composition relative to their unincorporated county are therefore more likely to decide to leave. Fact 2 asks what predicts the incorporation decision.

3.2 Fact 2: Larger, Whiter, and richer places are more likely to incorporate

What drives the incorporation decision? The literature's answers are heterogeneous preferences and resistance to redistribution. Within the unincorporated county, local policies are determined by a potentially diverse group of county residents, while local policies of incorporated places are determined by residents within their own boundaries. The more an unincorporated place differs from the county it belongs to, the more its residents lose to preference mismatch. Therefore, the larger their gains would be from incorporation. Another concern is redistribution: if an unincorporated place is richer than the county jurisdiction, its residents are less likely to want to subsidize their poor neighbors.

Qualitative evidence also supports these hypotheses. Reviews of incorporation histories find that control over land use and dissatisfaction with county services are among the most common motives (Rice et al., 2014); the incorporation histories that I collect show the same (Section 2). I consider the former two motives driven by heterogeneous demand for local policies, so I focus on two key motives, heterogeneous preferences, and resistance to redistribution. Additionally, a larger unincorporated place is more likely to sustain the administrative cost of running their own governments than a smaller one, so this is a feasibility factor for incorporation.

I take the baseline unincorporated place as the unit eligible for incorporation. In the data they stay unincorporated as of 2020 or incorporated between 1970 and 2020. About half of the incorporators had been delineated by the Census as CDPs before they incorporated.[21] I follow all places unincorporated from their baseline year to 2020. Due to incomplete coverage of 1970 and 1980 census block group data, baseline unincorporated places can have a base year of 1970, 1980, and 1990. I consider incorporation an absorbing state, and drop the place once it incorporates.

My unincorporated place-decade panel keeps only the place-decades in which incorporation was legally possible: it excludes 436 place-decades in which a state rule, such as a minimum population or a minimum distance from an existing municipality, ruled it out.[22] The panel has 21,774 place-decades across 6,683 places in 42 states. Incorporation is rare among baseline eligible places: my sample covers 353 incorporations, a

[20] In the model, the unit cost of each public good is the same in every jurisdiction. Municipalities whose residents are nearly all White spend little on protection, which might reflect lower needs or lower costs as well as different preferences.

[21] For 342 of the 353 incorporations, I compare the first boundary after incorporation with the CDPs of the preceding census: 166 (49 percent) overlap a CDP, and 106 (31 percent) lie at least half inside one.

[22] The state rules exclude 329 place-decades in Washington, 80 in Georgia, 22 in Colorado, and 5 in Louisiana: 163 by a population minimum alone, 220 by a proximity rule alone, and 53 by both. In Washington after 1994, for example, a new city needs 1,500 residents, or 3,000 if it lies within five miles of a city of 15,000 or more.

rate of 1.6% per decade. Places that incorporate are larger than places that never do: in the decade they incorporate, they have 3,592 households on average, against 1,666 (Table 3). They are also Whiter and more educated than the unincorporated county they leave, by 2.7 and 2.0 pp on average, and their median household income is 6 percent higher.

Table 3: Places that incorporate and places that do not

	Fact 2 panel		Fact 4 panel, baseline	
	Incorporating place-decades	Never incorporating	Incorporators	Failed attempts
Households	3,592 (6,282)	1,666 (3,541)	2,442 (4,072)	3,608 (4,861)
Population	9,915 (17,149)	4,655 (9,531)	7,386 (12,371)	10,391 (14,221)
Non-Hispanic White, adults (%)	85.6 (21.4)	81.1 (25.5)	89.0 (18.6)	89.0 (13.9)
College, adults (%)	22.2 (14.8)	21.4 (15.5)	18.0 (12.3)	21.6 (14.8)
Median household income (2022 $)	87,655 (32,556)	80,953 (33,583)	79,615 (26,628)	83,379 (34,227)
White-share gap with U (pp)	2.7 (15.1)	−0.4 (17.2)	1.9 (13.6)	3.0 (12.3)
College-share gap with U (pp)	2.0 (10.8)	−0.9 (10.2)	1.0 (9.8)	2.8 (11.1)
Log income ratio with U	0.058 (0.243)	−0.028 (0.259)	0.044 (0.236)	0.041 (0.275)
Observations	353	21,166	353	141

Means, with standard deviations in parentheses. Fact 2 panel: the 353 place-decades in which a place incorporates and the 21,166 place-decades of places that never incorporate; the 255 earlier place-decades of places that later incorporate are in neither column. Fact 4 panel: the 353 incorporators and the 141 places whose attempts to incorporate failed, each at its first baseline year; 62 of the incorporators also had an earlier failed attempt. The gaps with U are the place's share minus that of its unincorporated county, in percentage points, and the log income ratio is the log of the place's median household income over that of U. Median household income is in 2022 dollars and excludes the 1970 census, which leaves 344 and 20,634 place-decades in the Fact 2 panel and 308 and 118 places in the Fact 4 panel.

I predict the incorporation decision using lagged "gap" measures related to the documented motives: I use the gap between the place and their unincorporated county in residential composition to proxy for heterogeneous demand for local policies. Let the baseline unincorporated county this place belongs to be U. Let W be share of non-Hispanic White residents in the jurisdiction, then $\Delta^W_{it} = W_i - W_U$ measures the difference in place i's White share relative to its unincorporated county, where place i is a part of it. Similarly, $\Delta^C_{it} = C_i - C_U$ gives the gap in college share between place i and its unincorporated county. I estimate the following linear probability model:

$$D_{it} = f\left(\Delta^W_{i,t-1}, \Delta^C_{i,t-1}\right) + \phi_y \log \frac{y_{i,t-1}}{y_{U,t-1}} + \phi_p \log \mathrm{Pop}_{it} + \psi_{\ell(i)\times t} + \varepsilon_{it}, \tag{3.1}$$

The outcome D_{it} indicates that place i incorporates by the end of decade t, and the regressors all come from the last period. Importantly, $f(\cdot)$ is a function of the place-unincorporated county gaps in residential shares in terms of race and education composition. y denotes median household income, so $\log \frac{y_{i,t-1}}{y_{U,t-1}}$ measures the place-unincorporated county gap in logged household income, a proxy for difference in per household tax base, which provides a test for the redistribution hypothesis. Log population enters because larger places can share the cost of incorporating among more residents. The state-by-decade effects $\psi_{\ell(i)\times t}$ restrict the comparison to places in the same state and decade, which face the same incorporation law and the same macroeconomic conditions. Standard errors are clustered by county.

I focus on two functional forms of $f(\cdot)$: a simple form where residential composition differences enter

the prediction regression linearly:

$$f\left(\Delta^W_{i,t-1}, \Delta^C_{i,t-1}\right) = \phi_W \Delta^W_{i,t-1} + \phi_C \Delta^C_{i,t-1}$$

as well as a functional form where a quadratic function of the residential composition differences predict incorporation:

$$f\left(\Delta^W_{i,t-1}, \Delta^C_{i,t-1}\right) = \phi_W \Delta^W_{i,t-1} + \phi_C \Delta^C_{i,t-1} + \phi_{WW}\left(\Delta^W_{i,t-1}\right)^2 + \phi_{CC}\left(\Delta^C_{i,t-1}\right)^2 + \phi_{WC}\Delta^W_{i,t-1}\Delta^C_{i,t-1}$$

Therefore, if heterogeneous preferences drive incorporation, one should see residential composition gaps significantly predict incorporation decision. If isolating own tax base motivates incorporation, one should see gap in logged household income a strong predictor. It is worth noting that the two motives differ in the direction and the shape of their effect on incorporation. If places incorporate to choose policies that fit their residents, a place that differs from its county in *either* direction gains, i.e. places with a higher as well as a lower share of non-Hispanic White are likely to incorporate.[23] The gain from a better policy fit grows with the square of the difference: Appendix C.4 shows that, to second order, it is a positive semidefinite quadratic form in (Δ^W, Δ^C). This provides a microfoundation for the commonly used quadratic loss function from preference mismatch. If places incorporate to keep their tax base, the gain is linear in the income gap.

Table 4 reports the estimates. Population size and income gap predict incorporation in both specifications. A place whose White share exceeds its county's by 10 pp is 0.11 pp (0.06) more likely to incorporate in column 1 with the linear residential composition, and 0.20 pp (0.09) more likely with the quadratic composition, where the average marginal effect is also 0.20. The college-share gap does not predict incorporation. The quadratic terms in Column 2 are not jointly significant. The results also give that a place with twice the population is 0.33–0.34 pp more likely to incorporate within a decade, a fifth of the base rate of 1.6%. Both the linear and quadratic specifications suggest that a place whose median household income is 10 percent higher relative to its unincorporated county's is 0.10 pp more likely, 6% of the base rate (column 1). A standard deviation of log population, 1.7, raises the probability by 0.82 pp, and a standard deviation of the log income ratio, 0.26, by 0.27 pp. Overall, this provides evidence that larger places, and places Whiter and richer than their county are more likely to incorporate.[24]

[23] Incorporators have become less White over time. The average non-Hispanic White share before incorporation is 89 percent among the incorporations of the 1980s and 1990s, 85 percent in the 2000s, and 65 percent in the 2010s. Among those of 1990 to 2019, 25 of 292 (9%) had a non-White majority. Smith and Waldner (2018) study why such cities form. Earlier waves of incorporation created mostly White municipalities (McCasland et al., 2026).

[24] Preference heterogeneity hypothesis predicts that a place gain from incorporation whether it is Whiter or less White than its county. Therefore, the lack of predicting power of the quadratic terms suggests that incorporations in this sample are more consistent with racial motives documented in Burns (1994); Wyndham-Douds (2023); Godinez Puig (2024); McCasland et al. (2026). My result is also consistent with the finding of Alesina et al. (2004) that racial heterogeneity is closely related to the formation of jurisdictions. The regression cannot separate these motives from policy preferences that differ by race, from redistribution, or from direct preferences over the composition of neighbors. The model of Section 4 contains no preference over neighbors and asks how much of the incorporation and sorting in the data can arise from *policy* alone.

Table 4: Who incorporates

	(1) Linear	(2) Quadratic
White-share gap Δ^W	0.114	0.204
	(0.062)	(0.090)
College-share gap Δ^C	0.131	0.082
	(0.145)	(0.129)
Log income ratio $\log(y_A/y_U)$	0.098	0.109
	(0.038)	(0.039)
Log population	0.333	0.339
	(0.073)	(0.075)
$(\Delta^W)^2$		0.021
		(0.017)
$(\Delta^C)^2$		0.007
		(0.058)
$\Delta^W\Delta^C$		0.071
		(0.083)
Average marginal effect of Δ^W		0.197
		(0.086)
Average marginal effect of Δ^C		0.078
		(0.129)
Quadratic terms, $F(3, 873)$ $[p]$		1.21 [0.305]
Eigenvalues of $\mathbf{\Phi}$		0.050 (0.039)
		-0.022 (0.064)
Mean of D_{it} (pp)	1.621	1.621
R^2 [within]	0.080 [0.005]	0.081 [0.006]
Place-decades	21,774	21,774
Places	6,683	6,683
Incorporations	353	353
State-by-decade cells	175	175
Counties	874	874

Linear probability models of equation (3.1), in pp of the probability of incorporating within a decade, with state-by-decade effects; standard errors clustered by county in parentheses. The gaps are the place minus U, the unincorporated county (which includes the place) or, in township states, the township, in units of 10 pp. The income ratio is that of median household incomes, in units of 10 percent ($\log 1.1$); log population is in units of a doubling ($\log 2$). In column (2), the linear terms are slopes at zero gaps, and the average marginal effects average the slopes over the sample. $\mathbf{\Phi}$ is the matrix of the quadratic form in (Δ^W, Δ^C), with diagonal (ϕ_{WW}, ϕ_{CC}) and off-diagonal $\phi_{WC}/2$, in pp per (10 pp)^2; standard errors of its eigenvalues by the delta method. The panel excludes place-decades in which a dated state rule ruled out incorporation (Section 3.2).

3.3 Fact 3: After incorporation, municipal spending and new construction diverge

To understand what happens after the incorporation of a place, I compare the local policy bundle after incorporation between an incorporator and its county remainder. The policies that the county would have applied to the place after incorporation are not observed, so neither comparison below estimates the effect of incorporation on policy. They describe how the municipal spending and the construction that residents are exposed to change when a place leaves the county.

The first comparison is the mix of municipal spending. Figure 6 follows the shares of spending on protection and on infrastructure in incorporators and in their counties (amenities is thus the omitted category) in the Census of Governments from 1977 to 2017. The figure shows the average incorporator, with standard error clustered by county. By construction, the incorporator's series is the county's mix before incorporation and its own mix afterward, so the two lines coincide before incorporation, and their agreement is not a test of parallel trends. After incorporation they separate. Two decades post incorporation, the new municipality spends a 8.4 pp lower share of its budget on protection than its county and a 9.8 pp higher share on infrastructure. [25]

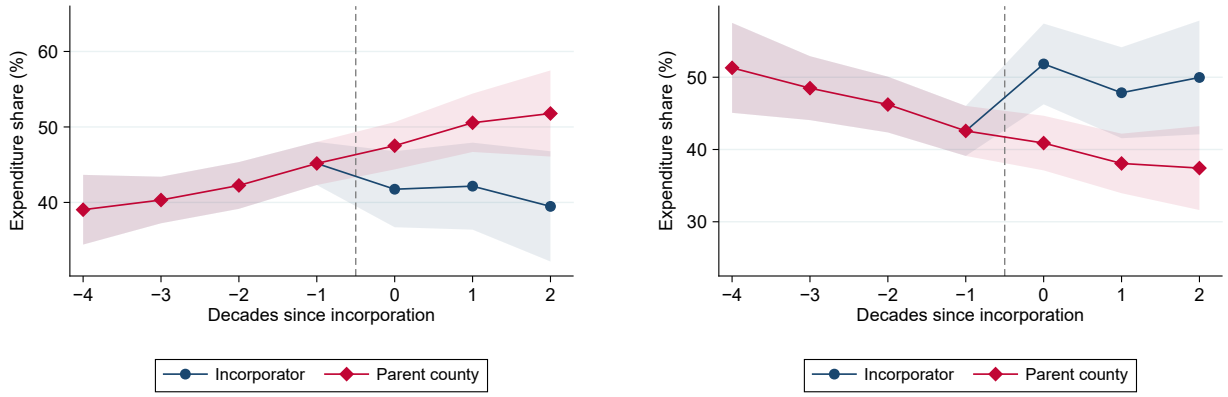


Figure 6: After incorporation, spending mixes diverge

Shares of spending on public safety (left) and infrastructure (right) within the three categories, by decade relative to incorporation, for incorporators and their parent counties. Before incorporation, both lines show the county's mix by construction. Census of Governments, 1977–2017; spending less capital outlay; county spending net of payments received from other local governments; county-clustered 95% intervals.

The second comparison is what is built after incorporation, which reflects changes of zoning regulations. The zoning ordinances of new municipalities are not observed historically, and the MLS of Fact 1 is estimated from all SFRs built under the current government. I therefore ask whether new construction respects the detected minimum lot size regulation of the new municipalities. For each incorporator, I take the minimum lot size detected in its lots built *after* incorporation and compute the share of new SFR construction below the

[25] Municipalities' spending includes municipal payment to other local governments for these three categories of municipal services (e.g., through a contract). Counties' spending is net of the payments the county receives from other local governments in these three municipal service categories. However, the county's municipal service accounts could still include functions that serve the whole county. Under an assumption that all three spending categories allocate the same share of spending to unincorporated county vs. the entire county, the county's mix is identical to the spending mix that serves the unincorporated county. In general, it is possible that part of the difference reflects the different functions of counties and municipalities.

estimated MLS, in the incorporator and in its remainder.[26] Figure 7 shows the average share across event time. In the incorporator, the share is stable before and after incorporation: about 30% SFR properties built in each decade are below estimated MLS.[27] A minimum lot regulation that the new government tightened, or enforced for the first time, would lower the share after incorporation, but it does not reveal an obvious trend break. This is, however, not a surprise: a MLS could be enacted to solidify existing built pattern and prevent future changes when faced with demographic changes such as growth shocks. This is evident when I compare this stable trend to what happens in their county remainder: in the remainder, the share of new SFR constructions below the *incorporator's* minimum rises by approximately 10pp a decade after the incorporator leaves the unincorporated county. Therefore, new construction on the two sides of the boundary diverges, and it is the remainder that moves: it builds more SFRs on small lots (measured by below the new municipality's MLS), while the new municipality maintains a stable construction pattern, more resistant to population growth and demographic changes.

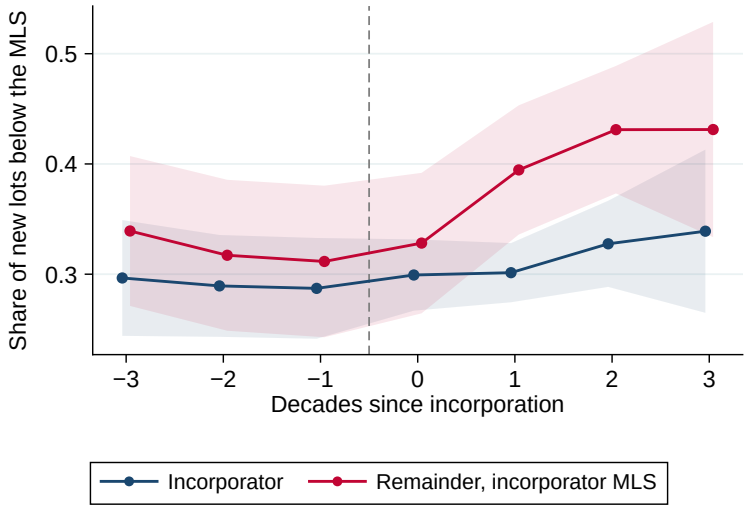


Figure 7: New construction against the incorporator's minimum lot size

Share of new single-family lots smaller than 98 percent of the incorporator's minimum lot size, by decade relative to incorporation, for lots built in the incorporator and in its remainder. The minimum lot size is the one detected in the incorporator's lots built after incorporation: the stock-weighted mean of the accepted breaks of its zoning cells, available for 170 of the 353 incorporations. A decade enters if the territory has at least 10 new lots in it; decade 0 contains the year of incorporation. For the 16 incorporations that left a township, the remainder is the township's. 95% intervals with county-clustered standard errors.

[26] The minimum lot size of an incorporator is the stock-weighted mean of the accepted breaks of its zoning cells; 170 of the 353 incorporations have one. A cell is a zoning code within a zoning authority or, where the assessor records no usable code, a block group within it; block-group cells can mix districts with different minimum lots, which raises the share below the minimum in every decade and on both sides. A decade enters if the territory has at least 10 new lots in it. For the 16 incorporations that left a township, the remainder is the township's. The median detected minimum lot is 0.27 acres in incorporators and 0.75 acres in their remainders.

[27] Some new houses stand on lots platted before the current minimum lot applied. Subdivisions were often platted decades before their houses were built, a median of 18 years in Gallagher et al. (2026), and lots platted before zoning are smaller than lots platted under it.

3.4 Fact 4: New municipalities grow faster than failed attempts, and their college share rises

By creating a new jurisdiction that has control over the municipal public goods and zoning policies, incorporation adds to the differentiated bundles of public goods and changes the menu option for the residential choice. How does incorporation affect sorting? I compare incorporators with 141 places whose formal attempt to incorporate failed and that had not incorporated by 2020. Both groups tried to incorporate, so the comparison holds fixed unobservable characteristics that lead a place to try. At baseline, the places whose attempts failed are larger than the incorporators (3,608 households against 2,442) and slightly more educated (a college share of 21.6 percent against 18.0), and they have the same White share, 89.0 percent (Table 3).

I follow the recent literature of staggered difference-in-differences design (e.g., Goodman-Bacon, 2021; de Chaisemartin and D'Haultfœuille, 2020; Sun and Abraham, 2021),[28] and use the imputation estimator of Borusyak et al. (2024), with the following model for untreated outcomes

$$Y_{it}(0) = \alpha_i + \upsilon_{\ell(i)\times t} + \varepsilon_{it}, \tag{3.2}$$

where α_i are place effects and $\upsilon_{\ell t}$ state×decade fixed effects. The imputation estimator works as follows: I first estimate the untreated outcome using Equation 3.2 on the never and not-yet-treated observations, *impute* the untreated outcome of each incorporator after incorporation, and average the differences between observed outcome and imputed untreated outcome over the decades post incorporation. Standard errors are clustered by state.

The sample has 326 incorporations with outcomes after incorporation, in 38 states.[29] Because incorporators and failed places are compared within a state and decade, the counterpart of these estimates in the model is the response of the incorporator itself, not of its county.

Figures 8 and 9, along with Table 5, report the estimates. Population grows by 21 log points (0.05) more than in the comparison, households by 0.21 (0.05), and housing units by 0.19 (0.05). Home values do not change detectably (0.03, 0.03). The college share rises by 2.7 pp (0.6). The rise is in education rather than race: the shares of White college and Other college adults rise by 1.4 pp (0.6) and 1.2 pp (0.4), the shares of White and Other non-college adults fall by 1.3 pp (0.6) each, and the White share does not move (0.5 pp, 0.8). The estimates describe composition, not counts: a rising college share can come from college-educated households moving in, from others moving out, or from faster growth of one group, and the population effect says that, on net, the new municipality gains residents relative to the places it is compared with. The joint tests on the leads do not reject at the 5 percent level ($p = 0.24$ for log population and 0.10 for the college share), although the college share already rises before incorporation: the estimate two decades before incorporation, relative to the decade before, is -1.2 pp (0.5). Pretrends therefore warn against a causal interpretation, and results are sensitive to extrapolation of the pretrends as the counterfactual: the population effect stays positive if the change after incorporation departs from parallel trends only by up to half the largest change before it

[28] See Roth et al. (2023) for a review.

[29] With baseline log population and the baseline gaps against the county in log home value, White share, and college share as controls, each interacted with decade, the effects on log population and the college share are 0.20 (0.05) and 1.8 pp (0.6).

(Rambachan and Roth, 2023).

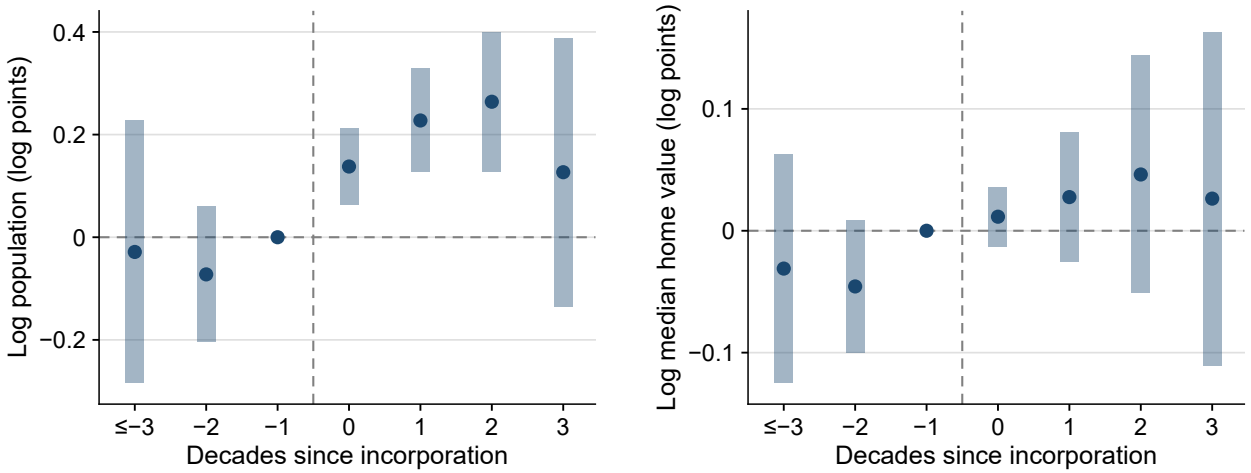


Figure 8: Incorporators see population growth post incorporation

Event-study estimates of log population (left) and log home value (right) by decade relative to incorporation, incorporators against failed attempts (equation 3.2); 95% intervals, standard errors clustered by state.

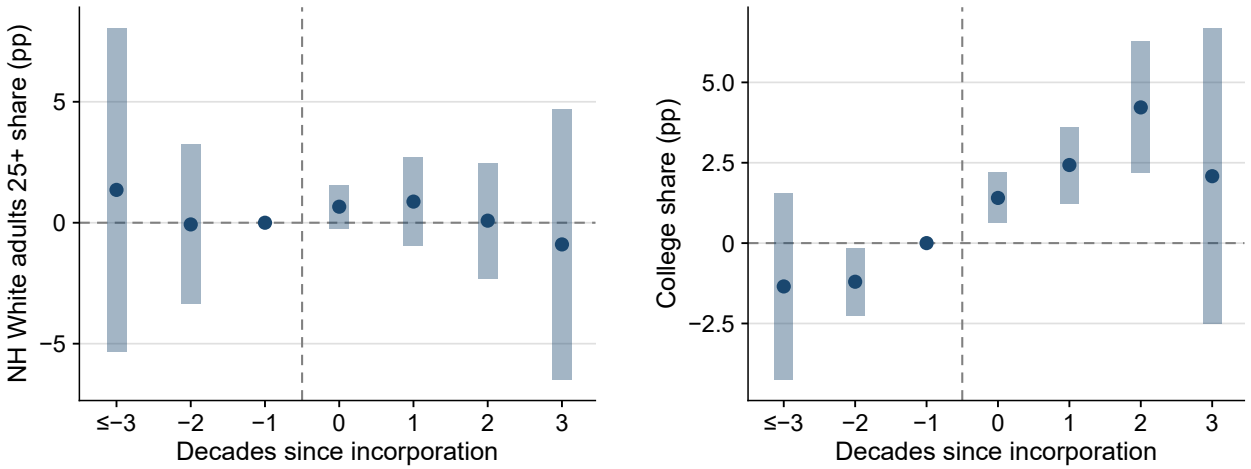


Figure 9: College share increases by 2.7 pp

The non-Hispanic White share (left) and the college share (right) of adults, as in Figure 8.

I do not interpret these estimates as causal effects. Places may incorporate in anticipation of development, and the timing of a successful attempt can respond to local shocks. The estimates show that new municipalities grow faster than places whose attempts failed and become more college educated. The welfare calculations of Section 5.6 hold residents' locations fixed; Section 5.7 lets residents move.

In summary, these four motivating facts are descriptive of why places incorporate and what happens afterwards. They call for a model of the following features: first, policies depend on the composition of a jurisdiction's residents, so the creation of a new jurisdiction that changes who votes changes the policies (Facts 1 and 3); second, the decision to incorporate responds to preference mismatch, resources, and size (Fact 2), so the gain from incorporation has to separate preference mismatch motive from the resource motive, and the cost of creating a government has to fall with size. Third, residents sort after incorporation, along

Table 5: What follows incorporation: incorporators vs. failed attempts

	Log population	Log households	Log housing units	Log home value	White share (pp)	College share (pp)
Average, decades 0 to 2	0.210	0.210	0.192	0.028	0.54	2.69
	(0.048)	(0.049)	(0.050)	(0.028)	(0.81)	(0.60)
Joint test of leads (p)	0.24	0.40	0.14	0.09	0.28	0.10

	White college share (pp)	Other college share (pp)	White non-college (pp)	Other non-college (pp)
Average, decades 0 to 2	1.43 (0.55)	1.20 (0.43)	−1.30 (0.60)	−1.33 (0.60)
Joint test of leads (p)	0.50	0.78	0.41	0.09

Imputation estimator of Borusyak et al. (2024), equation (3.2), with place effects and state-by-decade effects; standard errors clustered by state. 326 incorporations with outcomes after incorporation (318 for the four type shares, which start in 1980), in 38 states, against 141 places whose formal attempt to incorporate failed and that had not incorporated by 2020.

education more than race (Fact 4), and the extension with mobility can be compared with this pattern.

4 A Model of Local Government Formation

This section develops a model in which each government jointly chooses municipal public goods, the tax that funds them, and zoning for its own residents, and in which places decide whether to form a government of their own. The model has two blocks. The first block takes a map of jurisdictions as given. Heterogeneous households live in locations that are grouped into jurisdictions,[30] and each government chooses policy by probabilistic voting. The chosen policies are then weighted averages of each type's ideal policies, which is how the gradients of Fact 1 arise. The second block considers the perturbation to the existing map of jurisdictions based on calculus of costs and benefits. I compare the policies that the residents of an unincorporated place could have got under incorporation to staying in the county. The gain from incorporation splits into a reduction in preference mismatch and a transfer of tax base. A place incorporates when the gain of its average resident overcomes a cost that falls with the place's size, which gives the shape of the Fact 2 regression. Residential choice closes the model when households are allowed to move after a boundary changes.

4.1 Setup

Let $\mathcal{I}$ be a set of locations and $\mathcal{P}$ a partition of the locations into jurisdictions. A municipality governs its jurisdiction consisting of a single location. A county government directly governs the locations of its unincorporated territory, which can include several unincorporated places and the area outside them. When place A of the unincorporated county U incorporates, the partition changes: A becomes a jurisdiction with its own municipal government, and the county governs the remainder $R = U \setminus A$.[31]

[30] Locations include already incorporated places (existing municipalities), unincorporated places and non-place area. The latter two form the unincorporated counties, but only unincorporated places (census statistical units of population cluster) are eligible for incorporation.

[31] The county and a municipality choose policy by the same rule, for different constituencies. County councils, however, are often elected by the voters of the whole county, including existing municipalities within the county boundary, so the rule for the county

Household ν has a type $s(\nu)$ and an annual income $y_\nu > 0$. The utility of household ν in location i, governed by government $m = m(i)$, is

$$U_{i\nu} = B_{is} \left(\frac{c_\nu}{1-\beta_s} \right)^{1-\beta_s} \left(\frac{h_\nu}{\beta_s} \right)^{\beta_s} \prod_{k=1}^{K} g_{mk}^{\gamma_{sk}} z_m^{\rho_s} \epsilon_{i\nu}, \qquad c_\nu + (1+t_m) q_i h_\nu = y_\nu, \tag{4.1}$$

where c is the numeraire, h is housing services, q_i is the rental price of housing. The local policy bundle $\Psi = (g_{mk}, t_m, z_m)$ consists of g_{mk}, the quantities of government m's K-dimensional public goods (empirically, the three municipal public goods protection, infrastructure, and amenities, as in Fact 1), t_m, an ad valorem property tax on the housing expenditure, and zoning stringency $z_m > 0$. Type s spends the share β_s of its income on housing, values public good k at γ_{sk}, with total valuation $\Gamma_s = \sum_k \gamma_{sk}$, and values the amenity that zoning protects at ρ_s. An idiosyncratic taste $\epsilon_{i\nu}$ is distributed Fréchet with shape parameter θ, and together with the exogenous type-specific amenity B_{is} , it captures the other determinants of where a household lives.

The indirect utility of household ν is

$$V_{i\nu} = B_{is}\, y_\nu \left[(1+t_m) q_i \right]^{-\beta_s} \prod_k g_{mk}^{\gamma_{sk}} z_m^{\rho_s} \epsilon_{i\nu}. \tag{4.2}$$

A change in log utility is therefore a proportional change in income at baseline prices and policies, and I measure every gain as a share of income. Types differ in how they value local policies and in how much housing they demand. The model contains no preference over the race or education of neighbors, and it takes no stand on where the differences across types come from. The zoning amenity stands for the benefits of a less intensive built environment, such as open space and less congestion.[32] Zoning stringency z_m is a continuous index, which Section 5.3 maps to the minimum lot size.

4.2 Zoning, housing supply, and tax incidence

Developers combine a fixed amount of land with a variable construction input to produce housing services,

$$H_i = A_i(z_{m(i)})\, \bar{T}_i^{1-\beta^H} N_i^{\beta^H}, \qquad \beta^H \in (0,1),$$

is an assumption: county directly serves the residents of the unincorporated county in terms of municipal services and land use management, and I assume that the policies are determined by the constituency of its unincorporated territory.

[32] Zoning policies regulate density, while residents experience realized density, which also depends on who moves in and on what developers build. It would be more realistic to let residents value realized density, an equilibrium object, and to let voters anticipate how zoning changes the number of households, density, and rents. I let the regulation enter utility directly for tractability: it keeps the voting problem myopic and gives the closed-form policy rules of Section 4.4. The specification can be read as a reduced form of the congestion amenity of Parkhomenko (2023), in which the amenity falls with the number of residents per unit of land at a constant elasticity, under two restrictions: the minimum lot binds when a location is built out, so that density at build-out is the inverse of the minimum lot, and stringency is the power transformation of the minimum lot that Section 5.3 uses (equation 5.2). Under these restrictions the density amenity is $z_m^{\rho_s}$, with ρ_s equal to the elasticity of the amenity with respect to density times d, the standard deviation of the log minimum lot in (5.2) (Appendix D). The density in this reading is the one that the regulation implies at build-out, not that of the current residents, which is why voters who take the residents as given can value it. The cost of zoning comes through housing supply, as in Parkhomenko (2023), where regulation lowers the productivity of developers. The two sides of the trade-off then have different curvature: the amenity is linear in the log minimum lot and the housing cost is convex in it, which gives an interior zoning choice.

where $\bar{T}_i$ is land and N_i is the construction input. Following Parkhomenko (2023) and D'Amico et al. (2024), zoning lowers the productivity of developers, $A_i(z_m) = \bar{A}_i e^{-\kappa z_m}$ with $\kappa > 0$. The competitive housing supply is then

$$H_i^S = \mathcal{A}_i e^{-(1+\eta)\kappa z_m} (q_i/w_i)^\eta, \qquad \eta = \frac{\beta^H}{1-\beta^H} > 0, \tag{4.3}$$

where w_i is the exogenous price of the construction input and $\mathcal{A}_i = (\beta^H)^\eta \bar{A}_i^{\eta+1} \bar{T}_i$ is local production capacity.

Let $E_i = \sum_{\nu \in i} \beta_{s(\nu)} y_\nu$ be the tax-inclusive spending of location i's households on housing. Housing-market clearing, $(1+t_m) q_i H_i = E_i$, gives

$$q_i = \left[\frac{w_i^\eta E_i}{(1+t_m)\mathcal{A}_i} \right]^{1/(1+\eta)} e^{\kappa z_m}. \tag{4.4}$$

The rent responds to both zoning and the tax. One more unit of stringency raises the rent by $100 \times \kappa$ log points. Because households spend a fixed share of their income on housing, a higher tax lowers the rent: residents bear a fraction $a \equiv \eta/(1+\eta)$ of a change in $\log(1+t_m)$ through the tax-inclusive price $(1+t_m)q_i$, and absentee landowners bear the rest.

4.3 Public goods and heterogeneous demand for local policies

Government m produces municipal public good k using the production function $g_{mk} = Q_{mk}/(c_k L_m)$, where Q_{mk} is spending on it, L_m is the number of households in jurisdiction m, and c_k is a unit cost common to all governments. A population elasticity of one implies no economies of scale in producing municipal public goods, so there are no economies of scale and incorporation does not change the efficiency of production.[33] Municipalities therefore have the following public goods financing condition:

$$Q_m = \sum_k Q_{mk} = \underbrace{\sum_k g_{mk} c_k L_m}_{\text{spending on public goods}} = \underbrace{t_m \sum_{i \in \mathcal{I}_m} q_i H_i}_{\text{property tax revenue}}. \tag{4.5}$$

Because $(1+t_m)\sum_{i\in\mathcal{I}_m} q_i H_i = \sum_{i\in\mathcal{I}_m} E_i \equiv E_m$, the government spends on public goods the share $\sigma_m \equiv t_m/(1+t_m)$ of its residents' housing expenditure, $Q_m = \sigma_m E_m$. Spending per household, the object of Fact 1, is then $Q_m/L_m = \sigma_m e_m$, where $e_m \equiv E_m/L_m$ is housing expenditure per household. e_m therefore denotes the tax base per household. [34]

Substituting the rent (4.4) and the budget (4.5) into (4.2) gives the utility of household ν in terms of policies:

[33] With economies of scale, the cost of a given level of a public good would rise less than one for one with households, and a new municipality would pay more per household than the county. The elasticity is not identified from the shares of spending, and the evidence on scale economies in local services varies by service (Byrnes and Dollery, 2002; Gómez-Reino et al., 2023); I set it to one.

[34] At a given tax rate, spending per household is proportional to the tax base, which is the split of Table 2, columns 2 to 4.

$$\ln V_{i\nu} = \underbrace{\textstyle\sum_k \gamma_{sk} \ln \lambda_{mk}}_{\text{spending mix}} + \underbrace{\Gamma_s \ln \sigma_m - a\beta_s \ln(1+t_m)}_{\text{spending level vs. tax}} + \underbrace{\rho_s \ln z_m - \beta_s \kappa z_m}_{\text{amenity vs. rent}}$$
$$+ \underbrace{\Gamma_s \ln e_m}_{\text{tax base}} - \tfrac{\beta_s}{1+\eta} \ln E_i + \text{const}_{i\nu}, \tag{4.6}$$

where $\lambda_{mk} \equiv Q_{mk}/Q_m$ is the share of spending on good k, the mix. Each bracket is a trade-off that one policy controls. The mix allocates a given budget across goods. A higher tax raises spending on every good, by raising σ_m, and raises the tax-inclusive price of housing, of which the household bears the share a. Stricter zoning thus raises the amenity and the rent. The tax base per household is not a policy: it represents the resource that funds the policies. The last term is the effect of local housing demand on the rent, which no policy changes if residential choices are fixed.

Then heterogeneous households have the following ideal bundle of local policies:

$$t_s^* = \frac{\Gamma_s}{a\beta_s}, \qquad g_{mks}^* = \frac{\gamma_{sk}}{\Gamma_s + a\beta_s} \frac{e_m}{c_k}, \qquad \lambda_{sk} = \frac{\gamma_{sk}}{\Gamma_s}, \qquad z_s^* = \frac{\rho_s}{\kappa\beta_s}. \tag{4.7}$$

Differences in the valuation of public goods, of the zoning amenity, and of housing imply differences in the demand for local policies. A type wants a higher tax when it values public goods more relative to the share of the tax it bears through its housing bill, a larger share of spending on the goods it values more, and stricter zoning when it values the amenity more relative to the housing cost it pays. Resources raise the level of public goods, but not the tax, the mix, or zoning.

4.4 The local policy choice

Policies are chosen collectively by the residents. Let $\Psi_m = (\{g_{mk}\}_K, t_m, z_m)$ be the policy bundle of government m. I adopt the probabilistic voting framework of Fajgelbaum et al. (2023): two office-motivated candidates announce platforms, and a resident ν of location i values platform Ψ_m at:

$$u_{i\nu}(\Psi_m) = \ln V_{i\nu}(\Psi_m) + \varepsilon_\nu(\Psi_m),$$

where $\varepsilon_\nu(\Psi_m)$ captures voters' idiosyncratic taste for the platform, independent across voters and platforms and distributed with type I extreme value with a common scale. It captures ideology, trust in a candidate, and the other considerations that the model does not represent. Under regularity conditions the candidates' platforms converge, and the equilibrium policy maximizes a weighted sum of voters' utilities, with weights given by the density of the taste shocks at the margin (Hinich, 1977; Lindbeck and Weibull, 1987).[35] Because

[35] With utilities that are strictly concave in the policy, as $\ln V_{i\nu}$ is when the tax is written as the share σ_m of housing expenditure that it raises, and with identically and continuously distributed taste shocks that enter utility additively, a pure-strategy equilibrium exhibits policy convergence and maximizes the weighted sum of voters' utilities (Theorem 5 of Banks and Duggan, 2004). A mixed-strategy equilibrium exists with a compact policy space and continuous expected vote shares, and a pure-strategy equilibrium exists if, in addition, the policy space is convex and the vote shares are quasi-concave (Theorems 1 and 2), a condition that can fail in a policy space of several dimensions (Duggan, 2008).

the scale is common to all voters, the weights are equal, and the equilibrium policy maximizes the average utility of the jurisdiction's households:

$$\max_{\Psi_m} \sum_{i \in \mathcal{I}_m} \sum_s \mu_{is} \ln V_{is}(\Psi_m)$$

$$\text{s.t.} \sum_k g_{mk} c_k L_m = t_m \sum_{i \in \mathcal{I}_m} q_i H_i, \qquad q_i = \left[\frac{w_i^\eta E_i}{(1+t_m)\mathcal{A}_i} \right]^{1/(1+\eta)} e^{\kappa z_m}$$

where L_{is} is the number of type-s households in location i, $\mu_{is} = L_{is}/L_m$ is the share of jurisdiction m's households that are of type s and live in location i, and $\ln V_{is}$ is the part of (4.6) that the households of type s in i share. The government takes the residents of its jurisdiction and their incomes as given: voters do not anticipate that policy changes who lives there. Let $\mu_{ms} = \sum_{i \in \mathcal{I}_m} \mu_{is}$ be the share of type s among m's households, and let $\bar{x}_m = \sum_s \mu_{ms} x_s$ denote the average of a type-specific parameter x_s in jurisdiction m. Maximizing the objective gives the equilibrium policy bundle

$$t_m = \frac{\bar{\Gamma}_m}{a\bar{\beta}_m}, \tag{4.8}$$

$$g_{mk} = \frac{\bar{\gamma}_{mk}}{\bar{\Gamma}_m + a\bar{\beta}_m} \frac{e_m}{c_k}, \tag{4.9}$$

$$z_m = \frac{\bar{\rho}_m}{\kappa\bar{\beta}_m}, \tag{4.10}$$

with spending mix $\lambda_{mk} = \bar{\gamma}_{mk}/\bar{\Gamma}_m$. Appendix C derives these rules.

The equilibrium local policies have a straightforward interpretation: the jurisdiction's tax, municipal spending mix, and zoning are averages of the bliss points across heterogeneous types (4.7):

$$t_m = \sum_s \frac{\mu_{ms}\beta_s}{\bar{\beta}_m} t_s^*, \qquad z_m = \sum_s \frac{\mu_{ms}\beta_s}{\bar{\beta}_m} z_s^*, \qquad \lambda_{mk} = \sum_s \frac{\mu_{ms}\Gamma_s}{\bar{\Gamma}_m} \lambda_{sk}. \tag{4.11}$$

The weights combine the types' shares of households with their housing shares for the tax and for zoning, because a type that spends more on housing bears more of the tax and of the housing cost of zoning, and combines the types' shares with their valuations of public goods in the equilibrium spending mix. The policy bundle therefore depends on the composition of the jurisdiction and not on its resources; resources raise the level of public goods through e_m. These rules are the model's counterpart of Fact 1. A municipality whose residents include more of a type that values the zoning amenity highly relative to its housing share zones more strictly, and one whose residents value public goods highly relative to the tax they bear spends a larger share of its tax base.

4.5 Gains from incorporation

I compute the gains from incorporation for incumbent residents. The residents of each location and their housing expenditure E_i are held at their values before incorporation.[36] Before incorporation, all residents of the unincorporated county, U, face the same policies. Afterward, the incorporator A and the remainder R choose their own. Using Equation 4.6, the change in utility of a resident of type s in $j \in \{A, R\}$ is

$$\Delta \ln V_{js} = \underbrace{\sum_k \gamma_{sk} \ln \frac{\lambda_{jk}}{\lambda_{Uk}}}_{\text{spending mix}} + \underbrace{\Gamma_s \ln \frac{\sigma_j}{\sigma_U} - a\beta_s \ln \frac{1+t_j}{1+t_U}}_{\text{spending level vs. tax}} + \underbrace{\rho_s \ln \frac{z_j}{z_U} - \kappa\beta_s (z_j - z_U)}_{\text{amenity vs. rent}} + \underbrace{\Gamma_s \ln \frac{e_j}{e_U}}_{\text{tax base}}. \tag{4.12}$$

For $j = A$, define $\Delta v_{js} = \Delta \ln V_{js}$, the gain of type s from its own place's incorporation; for $j = R$, $\Delta \ln V_{js}$ is the utility change of the unincorporated remainder from losing place A due to incorporation.

The gain measures the welfare of residents as consumers of housing and local policy. It excludes the owners of land and of construction inputs, so a lower housing cost raises the gain of every resident. The first three terms follow from policy choices: the spending mix, the level of spending and the tax that funds it, and zoning net of its housing cost. The change in the tax base per household is the mechanical result of secession and depends on no policy choice. It is positive for the territory with a larger tax base per household than U and negative for the other.

Holding residents' locations fixed, the gain of a territory's average resident has two parts that behave differently. The first is policy fit. Each government chooses the policies that maximize the average utility of its own residents. Before incorporation, the residents of A live under policies chosen for all of U. Afterward, their own government could keep those policies but chooses the ones its residents prefer, so the change cannot hurt A's average resident. The same argument applies to the remainder R: policy fit is never negative on either side of the new boundary. It is also small when the two constituencies are alike. A's ideal policy is then close to the county's, and a policy near the optimum costs little, by an amount that grows with the square of the distance. A place twice as different from its county gains about four times as much from policy fit, whether it is Whiter or less White than the county.

The second part is the tax base. The tax base per household of U is the household-weighted average of those of A and R, so after incorporation, the richer side has more resources per household and the poorer side

[36] This effectively imposes a myopic assumption in the decision to incorporate: incumbent voters do not consider the equilibrium effect induced by their incorporation decision. This may not differ too much from the reality: three features of incorporation support it. First, the residential response is slow relative to the decision: the referendum is held once, by the residents of the day, while the population effects of Fact 4 build up over two decades. Second, the motives that proponents state, recorded in the incorporation histories of Section 2, concern the taxes, services, and land use of the existing community, the objects of the gain in equation (4.12). Like the incumbent owners of Parkhomenko (2023), voters in the model choose policy taking their own residence as given; unlike them, they also take the other residents as given, while Parkhomenko's owners anticipate how regulation changes the number of renters who move in. Section 5.7 relaxes the assumption by letting households move after incorporation, which lowers the gain of incumbents because newcomers bid up the price of housing.

has less. What one side keeps, the other loses, and the amount grows with the gap in tax base per household itself, not with its square.

Two implications follow. For a place that differs little from its county, the tax base dominates its gain, and policy fit matters only where preferences differ a lot, as they do over zoning (Section 5.6). The remainder gains little from policy fit: when a small place leaves, the remainder's composition moves by only L_A/L_R times the place's gap, so its gain from policy fit is smaller by roughly the square of that ratio. Both statements concern averages; a type whose ideal policy is far from that of its new government can lose. The shape of the gain also gives a test: in the Fact 2 regression, the composition gaps should enter as a positive semidefinite quadratic form and the income gap linearly (Section 5.5). Proposition 1 in Appendix C.4 states these properties formally.

4.6 Incorporation referendum

A gain from a government of its own is not enough to incorporate: a campaign must be organized to raise public support, the formal procedures must be initiated, and a place must also win a referendum. Similar to the policy voting process in Subsection 4.4, an incumbent household in place i votes in the referendum as follows:

$$\mathcal{U}_{i\nu}(D) = \underbrace{\Delta \ln V_{is}(D)}_{\text{gains}} - \underbrace{F_i \cdot D}_{\text{formation cost}} + \underbrace{\varepsilon_\nu(D)}_{\text{voting shock}}$$

where $D = 1$ for the incorporation and $D = 0$ against it, F_i is the formation cost per household, common to the place's residents and measured, like the gain, as a share of income, and ε_ν captures idiosyncratic taste for or against self-government, distributed Type I Extreme Value with a scale $1/\zeta$. The standard result in probabilistic voting literature gives that the yes share for incorporation is:

$$S_i(F) = \sum_s \mu_{is} \Lambda(\zeta(\Delta v_{is} - F)), \tag{4.13}$$

where $\Delta v_{is} \equiv \Delta \ln V_{is}(D = 1)$, gains from own incorporation, and Λ is the logistic function, and the place incorporates if $S_i(F_i) \geq 1/2$.

Let F_i^* solve $S_i(F_i^*) = 1/2$: it is the highest formation cost at which a majority approves. Intuitively, F_i^* is approximately the gain of the average resident, $\Delta\bar{v}_i$.[37] I thus use the average gain as the index of the referendum: the place incorporates if $\Delta\bar{v}_i \geq F_i$. This is the majority rule in the limit $\zeta \to 0$, and it lets the formation model be estimated from incorporation decisions alone, without the yes shares, which are recorded for only 151 first referenda (Section 5.4).

The formation cost is assumed to decrease in the size of the place, differs by state, and is also affected by

[37] The yes share is $S_i(F) = \sum_s \mu_{is}\Lambda(\zeta(\Delta v_{is} - F))$. Near zero, the logistic function is close to linear: $\Lambda(x) = 1/2 + x/4 - x^3/48 + \ldots$. With the linear term alone, $S_i(F) = 1/2 + (\zeta/4)(\Delta\bar{v}_i - F)$, so the yes share is one half exactly when F equals the average gain, and $F_i^* = \Delta\bar{v}_i$. The cubic term moves the threshold. To leading order, $F_i^* = \Delta\bar{v}_i - (\zeta^2/12)\sum_s \mu_{is}(\Delta v_{is} - \Delta\bar{v}_i)^3$, where the sum is the third central moment of the four types' gains. When one type gains much more than the others, the moment is positive and the threshold lies below the average gain: the logistic function flattens away from zero, so that type's large gain raises its yes share less than in proportion. The correction is small when the gains of the four types differ by much less than $1/\zeta$, the scale of the voting tastes, because every type's yes share then lies on the nearly linear part of Λ.

a shock common to the place's residents:

$$F_i = \chi \ln L_i + h_{\ell(i)} + \xi_i, \tag{4.14}$$

where L_i is the number of households of the place, $\ell(i)$ is its state, and ξ_i is a logistic shock with a scale of $1/b$. A place with 1 percent more households faces a formation cost higher by $\chi/100$, as a share of income per household; a negative χ means that larger places face a lower formation cost. The state effects h_ℓ absorb what makes incorporation easier or harder in a state, such as incorporation law and the services that counties are stipulated to provide. The shock ξ_i stands for everything about the place that the model omits, such as whether anyone organizes, local politics, and the county's position. Without it, a place with a given gain and size would incorporate for sure or never, because the voting tastes average out over a place's voters. The probability of incorporation is then

$$p_i = \Lambda\big(b\,(\Delta\bar{v}_i - \chi \ln L_i) + \psi_{\ell(i)}\big)\,, \tag{4.15}$$

where $\psi_\ell = -bh_\ell$. The coefficient b is the inverse of the scale of the place shock: it measures how strongly the modeled gain moves the odds of incorporating.

With the panel of unincorporated places in Fact 2, I estimate a dynamic version of this model in Section 5.4. I estimate b and χ by a logit with state-by-decade fixed effects $\psi_{\ell\times t}$, and $\Delta\bar{v}_i$, $\ln L_i$ are taken from the decade immediately before the incorporation. The referendum votes and the motives that proponents state are used to validate the model.[38]

4.7 Residential choice afterwards

When households can relocate after a boundary changes, residential choice closes the model. The location tastes $\epsilon_{i\nu}$ are independent draws from a Fréchet distribution with unit scale and shape $\theta > 0$. Let $v_{is} = V_{i\nu}/(y_\nu \epsilon_{i\nu})$ be the part of indirect utility that is common to the households of type s in location i. Income does not vary with location and cancels from the choice, so the share of type s households that live in i is

$$\pi_{is} = \frac{v_{is}^{\theta}}{\sum_j v_{js}^{\theta}}. \tag{4.16}$$

Equilibrium. Given a partition $\mathcal{P}$ of locations into jurisdictions, the parameters $\{\beta_s, \gamma_{sk}, \rho_s, \kappa, \eta, \theta\}$, the national number of households of each type $\{\bar{L}_s\}$, household incomes $\{y_\nu\}$, and exogenous location characteristics $\{\bar{A}_i, \bar{T}_i, w_i, B_{is}\}$, a spatial equilibrium is a vector $\{L_{is}, q_i, g_{mk}, t_m, z_m\}$ such that (i) households choose locations by (4.16), with $L_{is} = \pi_{is}\bar{L}_s$; (ii) housing markets clear, (4.4); and (iii) each government chooses policy by (4.8) to (4.10), given the residents of its jurisdiction.

The main results hold residents' locations fixed and do not use equation (4.16). The equation closes the

[38] In the model, a remainder that consists of a single place would get its own residents' policies once its neighbor leaves, which gives places in a county of two an incentive to wait for the other to incorporate. With the sizes of actual counties, the remainder never shrinks to one place. Places stay unincorporated for other reasons: to avoid a municipal tax, to keep the county's more permissive zoning, and because organizing is costly. Fully incorporated counties are rare.

model when households can relocate after a boundary changes, and θ is calibrated for that case in Section 5. Voters then choose policy for the residents of the day, without anticipating the moves that the policy causes, which is the myopia of the referendum.

5 Estimation and Results

I estimate the model in three steps. First, the policies of existing municipalities identify how much each type values public goods, how it would divide spending among them ("mix"), and how much it values the amenity that zoning protects (Fact 1). Second, housing prices identify the housing cost of zoning. Third, given the gains that these preferences imply, the incorporation decisions of the Fact 2 panel identify the formation model of Section 4.6: how strongly the modeled gain moves the odds of incorporating, and how fast the formation cost falls with size. The housing shares and the elasticity of housing supply are calibrated. The section then reports the gains from incorporation that the estimates imply, with residents' locations held fixed; Section 6 changes the approval rule.

5.1 Calibrated parameters

The housing expenditure shares come from the Consumer Expenditure Survey for 2015 to 2019, for reference households with householder aged 25 or above, pooling owners and renters. I estimate that $\beta = (0.193, 0.198, 0.230, 0.259)$ for White college, Other college, White non-college, and Other non-college households.[39] The elasticity of housing supply is $\eta = 2$, which corresponds to a land share of one third in housing production. Residents then bear $a \equiv \eta/(1+\eta) = 2/3$ of a change in the tax factor $1 + t_m$ (Section 4.2). This value is close to the population-weighted mean elasticity of 1.75 in Saiz (2010). The Fréchet shape parameter of residential choice is $\theta = 6$ for all types, following Bagagli (2025); it enters only Section 5.7.

5.2 Preferences over public goods: level and mix

How much residents value public goods in total is revealed by how much a municipality spends relative to its residents' housing expenditure, and their relative valuations by how it divides that spending. Write $\gamma_{sk} = \Gamma_s \lambda_{sk}$, where Γ_s is type s's total valuation of public goods and λ_{sk}, with $\sum_k \lambda_{sk} = 1$, its ideal mix (equation 4.7).

Level ($\boldsymbol{\Gamma_s}$) By the policy rule (4.8), a municipality spends the share $\sigma_m = \bar{\Gamma}_m/(\bar{\Gamma}_m + a\bar{\beta}_m)$ of its residents' housing expenditure on public goods, so spending per household is $\sigma_m e_m$ (Fact 1). The estimating equation is

$$\frac{Q_m}{L_m} = \frac{\bar{\Gamma}_m}{\bar{\Gamma}_m + a\bar{\beta}_m}\, e_m + \alpha_{n(m)} + \alpha_y \ln \frac{Y_m}{L_m} + u_m, \qquad e_m = \frac{(\boldsymbol{\mu}_m' \boldsymbol{\beta})\, Y_m}{L_m}, \tag{5.1}$$

[39] From the 1980 Consumer Expenditure Survey, Weiwu (2025) predicts housing shares of 0.34 and 0.22 for Black respondents without and with a high school degree, and of 0.30 and 0.21 for White respondents, from a linear housing expenditure function evaluated at each group's average income. Her groups differ from mine, by race and by a high school rather than a college degree, but the pattern is the same: the share falls with education and is higher for the minority group at each level of education.

where Q_m is spending on the three categories, L_m is the number of households, Y_m is their aggregate income, and $\alpha_{n(m)}$ are county effects. Among municipalities in the same county with the same income per household, those whose residents include more of a type that values public goods highly relative to the tax it bears spend a larger share of their residents' housing expenditure. This variation identifies the differences in Γ_s across types. The county effects absorb the average spending of each county, so one more moment sets the common level of the Γ_s: on average across municipalities, the model's spending per household equals observed spending per household, and the county effects average to zero. The moment conditions set the residual orthogonal to three of the four type shares and to the squared White and college shares, within county and net of log income per household. I impose additivity in race and education, $\Gamma_1 + \Gamma_4 = \Gamma_2 + \Gamma_3$, and estimate by two-step GMM.

Mix (γ_{sk}) By the policy rule, the share of spending on good k is $\lambda_{mk} = \sum_s \tilde{\mu}_{ms}\lambda_{sk}$, with weights $\tilde{\mu}_{ms} = \mu_{ms}\Gamma_s/\bar{\Gamma}_m$ (equation 4.11). The mix of a municipality is therefore a weighted average of the ideal mixes of its types. A type's weight is its share of the municipality's households times its valuation of public goods, divided by the municipality's average valuation, so that the weights sum to one. Given $\widehat{\Gamma}_s$, the estimating equation adds county effects to this expression for protection and infrastructure; the amenities share follows from adding up. It has no other controls, because in the model the mix depends on composition and not on income or other characteristics. The ideal mixes are additive in race and education, and the mean share of each category is matched exactly.

Estimates. Table 6 reports the estimates, with standard errors from a bootstrap that resamples counties and repeats every step (199 draws). The total valuations of public goods are $\widehat{\Gamma} = (0.020, 0.029, 0.025, 0.034)$, with standard errors of 0.007, 0.019, 0.006, and 0.021. However, equality across the four types is not rejected ($p = 0.78$).[40] A 10 percent increase in all three public goods is worth 0.19 to 0.33 percent of income, depending on type. The preferred tax rates on the housing payment, $t_s^* = \Gamma_s/(a\beta_s)$, are 15.4, 21.8, 16.5, and 19.8 percent.

The types disagree about how to divide spending. Other residents put more weight on protection, 62.0 and 48.5 percent of their valuation of public goods, against 44.6 and 31.1 percent for White residents. White non-college residents put the most on infrastructure, 60.4 percent, and college residents put more on amenities than non-college residents, 15.4 and 15.1 percent against 8.4 and 8.2. Equality of the ideal mixes across types is rejected.[41]

Funding. In the model, a tax on housing funds all spending on the three categories. In the 2017 accounts of these 8,751 municipalities, property-tax receipts equal 58.8 percent of this spending in aggregate and 43.4 percent in the median municipality; charges, other taxes, and intergovernmental transfers fund the rest. I estimate Γ_s from total spending, so the tax in the model stands for all the revenue that funds these public goods. The mix does not depend on how the spending is funded.

[40] The overidentifying restrictions imply borderline rejection ($J = 6.64$, $p = 0.084$).

[41] The overidentifying restrictions of the mix are rejected ($J = 9.89$, $p = 0.007$)

Table 6: Preference estimates

	White college	Other college	White non-college	Other non-college
A. Benchmark				
Housing share β_s	0.193	0.198	0.230	0.259
Valuation of public goods Γ_s	0.020	0.029	0.025	0.034
	(0.007)	(0.019)	(0.006)	(0.021)
Preferred tax t_s^* (%)	15.4	21.8	16.5	19.8
Ideal mix λ_{sk} (%): protection	44.6	62.0	31.1	48.5
	(3.6)	(4.5)	(1.9)	(2.3)
infrastructure	39.9	22.9	60.4	43.4
	(3.4)	(4.6)	(2.1)	(2.4)
amenities	15.4	15.1	8.4	8.2
	(1.5)	(2.0)	(0.7)	(1.1)
Zoning amenity ρ_s	0.049	0.006	0.044	0.001
	(0.005)	(0.008)	(0.004)	(0.002)
Preferred stringency z_s^*	3.06	0.35	2.31	0.04
Preferred minimum lot (1,000 sq ft)	26.9	6.9	22.6	1.7
B. Robustness: log population added to every block				
Valuation of public goods Γ_s	0.021	0.032	0.024	0.035
	(0.006)	(0.010)	(0.003)	(0.014)
Ideal mix λ_{sk} (%): protection	41.2	48.9	35.1	42.8
	(2.1)	(3.1)	(1.2)	(1.6)
infrastructure	44.9	41.4	54.8	51.2
	(2.1)	(3.1)	(1.2)	(1.6)
amenities	13.9	9.7	10.1	5.9
	(1.2)	(1.7)	(0.6)	(0.9)
Zoning amenity ρ_s	0.068	0.054	0.026	0.012
	(0.005)	(0.009)	(0.004)	(0.003)
C. Tests				
	Benchmark		Robustness	
Γ_s: J (df 3) [p]	6.64 [0.084]		6.26 [0.100]	
Γ_s equal across types: Wald (df 2) [p]	0.49 [0.782]		0.67 [0.714]	
λ_{sk}: J (df 2) [p]	9.89 [0.007]		12.36 [0.002]	
λ_{sk} equal across types: Wald (df 4)	105.6		61.3	
ρ_s: J (df 3) [p]	31.14 [<0.001]		0.29 [0.962]	
ρ_s equal across types: Wald (df 2)	149.8		104.1	

Housing shares from the Consumer Expenditure Survey, 2015 to 2019. Public goods: two-step GMM on 8,751 municipalities in 1,121 counties (2017 Census of Governments), additive in race and education. Benchmark controls: Γ_s, county effects and log income per household; λ_{sk} and ρ_s, county effects only. Robustness: log population added to each block. Standard errors from a bootstrap of counties that repeats every step (199 draws for public goods; 99 draws of linked county groups for zoning). $t_s^* = \Gamma_s/(a\beta_s)$ with $a = 2/3$. Zoning: two-step GMM on 8,010 municipalities, additive, $\kappa = 0.067$; $z_s^* = \rho_s/(\kappa\beta_s)$, and the preferred minimum lot inverts equation (5.2). Under additivity, a parameter differs across the four types only through a race difference (Other minus White, the same at either level of education) and an education difference (non-college minus college, the same for either race). The Wald tests of equality test that both differences are zero, for each free share of the ideal mix and for Γ_s and ρ_s, with the bootstrap covariance of the differences. All equality tests with $p < 0.001$ also have bootstrap $p < 0.005$.

5.3 Zoning: its cost and its value

Conversion. Zoning stringency in the model is a positive index. I map the estimated minimum lot size to the stringency index with

$$z_m = \exp\left\{(\log \mathrm{MLS}_m - \overline{\log \mathrm{MLS}})/d\right\}, \tag{5.2}$$

where $\overline{\log \mathrm{MLS}} = 9.498$ and $d = 0.628$ are the mean and standard deviation of the log MLS across the 8,782 municipalities, so that $z_m = 1$ at the mean.

The cost of zoning. The parameter κ is the semi-elasticity of the rental price of housing with respect to stringency in equation (4.4). For each municipality, a hedonic regression of sale prices on lot size, building area, bathrooms, age, structure type, and time effects, with block-group-by-jurisdiction effects, gives the log price of a reference home, $\log q_m$. I regress $\log q_m$ on the log MLS, with county effects and the two other terms of equation (4.4), $\log E_m$ and $\log(1 + t_m)$, on 6,541 municipalities in 799 counties. The elasticity of the price with respect to the MLS is $\vartheta = 0.106$ (0.016). At the mean, $\kappa = \vartheta d = 0.067$ (0.010): a minimum lot 10 percent larger raises the price of housing by 1.0 percent.[42]

The value of zoning amenities. By the zoning rule (4.10), stringency times the average housing share is linear in the type shares, with coefficients $\tilde{\rho}_s = \rho_s/\kappa$. The estimating equation is

$$z_m \bar{\beta}_m = \sum_s \mu_{ms} \tilde{\rho}_s + \alpha_{n(m)} + u_m. \tag{5.3}$$

Among municipalities in the same county, those with more residents of a type that values the zoning amenity highly relative to its housing share zone more strictly (Fact 1). County effects absorb the level, so I add the restriction that the equation holds at the sample mean, which identifies the common level of the valuations given κ and the conversion (5.2). The moments are those of the public-goods equations, and I impose additivity and $\tilde{\rho}_s \geq 0$. Population and incomes respond to zoning in the model, so the main specification conditions on county effects only.

Estimates. The valuations of the zoning amenity are 0.049 (0.005) for White college, 0.006 (0.008) for Other college, 0.044 (0.004) for White non-college, and 0.001 (0.002) for Other non-college residents (Table 6). They differ mainly by race: the valuation of Other residents relative to White residents is 0.07, and that of non-college relative to college residents 0.82. Equality across types is rejected. The preferred minimum lots of White residents are 26,900 and 22,600 square feet, and those of Other residents 6,900 and 1,700 square feet.[43] The gains below report both.

[42] The conversion (5.2) also fixes the curvature of the housing cost of zoning, which the price data do not identify. The housing cost in the model is linear in z, and therefore convex in the log MLS with curvature $1/d$. To second order, the net zoning gain of Proposition 1 is $\frac{1}{2}\vartheta\bar{\beta}_j z_j (\Delta \log \mathrm{MLS})^2/d$: for a given price elasticity and a given gap in minimum lots, it falls with d. I set d to the dispersion of the log MLS across municipalities. A constant elasticity in the MLS is the limit $d \to \infty$, in which the cost and the amenity are both linear in the log MLS and the net zoning gain vanishes to second order. The price data cannot distinguish the two. Appendix D reads ρ_s as d times the density elasticity of a congestion amenity.

[43] The overidentifying restrictions are rejected.

5.4 Formation cost and the place shock

The last step estimates the formation model of Section 4.6, taking the gains that the preference estimates imply as data. An observation is an unincorporated place in a decade. For each place-decade, I compute the gain of the place's average household, $\Delta\bar{v}_{it}$, from the last decade, as in Section 5.6, and its number of households L_{it}. The formation panel has 21,742 place-decades and 352 incorporations.[44]

Equation (4.15) has a fixed effect for each state and decade. I estimate b and χ by a logit of the incorporation indicator on the gain $\Delta\bar{v}_{it}$, size $\ln L_{it}$, and state-by-decade fixed effects; the coefficient on $\ln L_{it}$ is $-b\chi$. The estimates rest on the 82 cells with at least one incorporation and at least one place that does not incorporate: 12,557 place-decades in 32 states. The fixed effects make the expected number of incorporations in each state and decade equal the observed number, which the counterfactuals of Section 6 keep. The coefficient b is identified by how much more often places with larger modeled gains incorporate than other places in the same state and decade, and χ by how much more often larger places incorporate at the same gain.

The formation cost is not part of the welfare: everything that makes incorporation rarer than the modeled gains predict, including the cost of campaign and procedures, potentially also a lack of interest, net of benefits of self-government that the model does not measure. The costs can also be concentrated on a small interest group. It is not a resource cost, so it does not enter welfare: the gains of Section 5.6 are those of equation (4.12) only.

Estimates. Table 7 reports the estimates. Gains predict incorporation: $\widehat{b} = 49.8$, with a standard error of 8.5 from the model and 16.7 clustered by state. A gain of 0.1 percent of income raises the odds of incorporating by 5.1 percent. The formation cost falls with size: $\widehat{\chi} = -0.756$, so a place with 1 percent more households faces a formation cost lower by 0.0076 percent of income. A place with twice as many households faces a formation cost lower by 0.52 percent of income; against a place with 1,000 households, one with 5,000 faces a formation cost lower by 1.22 percent and one with 20,000 by 2.26 percent.

Validation: votes and stated motives. Neither the referendum votes nor the motives that proponents stated are used in estimation. In the model, the log odds of a referendum's yes share rise with the average gain at the rate ζ. Across the 151 first referenda with recorded counts, in 21 states, a regression of the log odds of the yes share on the average gain, with state effects, gives $\widehat{\zeta} = 30.7$ (SE 10.9). A gain of 1 percent of income moves a close vote by 7.7 pp, within the range of 5 to 16 pp implied by the estimates of Fajgelbaum et al. (2023) for California's referendum on high-speed railway. Voters do not weigh size as the formation cost does. With $\ln L_{it}$ added, larger places vote yes slightly less often, by 0.14 (0.09) in the log odds per unit of $\ln L_{it}$, which would imply $\chi = 0.50$ (0.38), the opposite sign of the panel's estimate. The size gradient of the formation cost is therefore consistent with costs that arise before a vote, in organizing and qualifying for one, rather than with a cost that voters weigh.

[44] This panel is built from the same places and decades as the Fact 2 panel (21,774 place-decades and 353 incorporations) but is not a subset of it: it lacks 55 of Fact 2's place-decades, including both of Dublin, California, the incorporation whose gains cannot be computed.

Table 7: Formation estimates

	(1) Main	(2) Main, robust	(3) Conditional logit	(4) State, decade	(5) Decade	(6) Constant, 32 states	(7) Constant, all
b	49.80	62.33	49.17	50.56	45.71	40.74	44.32
model SE	(8.45)	(9.22)	(8.38)	(8.44)	(7.76)	(7.46)	(7.57)
clustered SE	[16.67]	[14.18]	[16.39]	[16.62]	[13.78]	[13.31]	[13.20]
χ (% of income per unit of $\ln L$)	−0.756	−0.588	−0.755	−0.696	−0.397	−0.407	−0.378
model SE	(0.146)	(0.106)	(0.146)	(0.134)	(0.095)	(0.105)	(0.094)
clustered SE	[0.346]	[0.283]	[0.345]	[0.335]	[0.291]	[0.343]	[0.310]
Doubling L lowers the formation cost by (%)	0.524	0.407	0.523	0.482	0.275	0.282	0.262
SD of the place shock (%)	3.64	2.91	3.69	3.59	3.97	4.45	4.09
Log likelihood	−1305.16	−1299.70	−1190.21	−1407.68	−1708.37	−1719.47	−1773.36
Place-decades	12,557	12,557	12,557	18,568	21,742	18,568	21,742
States (clusters)	32	32	32	32	42	32	42

Logit of incorporation within a decade on the average household's gain and $\ln L_{it}$, equation (4.15); the coefficient on $\ln L_{it}$ is $-b\chi$, and χ, in percent of income per unit of $\ln L_{it}$, and its standard errors come from the delta method. A negative χ means that the formation cost falls with size. Column (1): one fixed effect per state-by-decade cell, benchmark gains; cells without an incorporation drop out, which leaves the 82 cells with at least one incorporation and one place that does not incorporate. Column (2): the same with the robustness set's gains. Column (3): conditional logit within the same cells, which conditions on the number of incorporations in each cell instead of estimating the fixed effects. Columns (4) to (7): state and decade dummies; decade dummies; a constant; columns (4) and (6) use the 32 states with an incorporation. Standard errors from the model in parentheses and clustered by state in brackets; clustered by county (691), column (1)'s are 11.67 for b and 0.232 for χ. Log likelihoods are not comparable across columns with different samples, and column (3)'s is a conditional likelihood. The formation panel has 21,742 place-decades and 352 incorporations. The place shock's standard deviation is $\pi/(\sqrt{3}\,b)$, in percent of income. Validation (Section 5.4): on the 151 first referenda in 21 states, the log odds of the yes share rise with the average gain at $\widehat{\zeta} = 30.70$ (robust SE 10.92; state-clustered 6.59; $R^2 = 0.234$), which implies $b = 58.9$ (21.0; 12.6); with $\ln L$ added, its coefficient is -0.138 (0.089; 0.084), so $\chi_{\text{vote}} = 0.503$ (0.378; 0.351).

Among the 168 incorporations whose ex ante motive a source supports, a stated land-use motive is not more likely where the modeled zoning gain is larger (logit coefficient 0.14 per standard deviation, standard error 0.15), and the fiscal and service motives are unrelated to the corresponding parts of the gain (-0.07, standard error 0.24, and 0.13, standard error 0.20). The direction of the land-use motive agrees with the model, however. The model tightens zoning in 70 percent of the places whose proponents wanted to restrict development (44 of 63) and in 38 percent of those that wanted to promote it (6 of 16); 68 percent of the 79 cases match (Fisher $p = 0.022$). Across all coded attempts, failed ones included, the agreement is similar but imprecise: 73 percent of 51 cases match ($p = 0.59$).

5.5 Motivating facts revisited

Fact 1 contains the variation that identifies preferences, and the incorporation decisions behind Fact 2 identify the formation model. Facts 3 and 4 are not used in estimation, and neither is the Fact 2 regression. The model restricts the shape of that regression. By Proposition 1, the gain from policy fit is a positive semidefinite quadratic form in the composition gaps, and the tax base enters linearly through the income ratio.

Table 8 regresses the model's probability of incorporation on the design of equation (3.1), with state-by-decade effects, and sets the coefficients beside those from the data on the same 21,723 place-decades.[45] The model reproduces the income gradient: per 10 percent of the income ratio, the probability of incorporating rises by 0.095 percentage points (0.012) in the model and by 0.098 (0.038) in the data. It reproduces the size gradient, 0.335 against 0.332 points per doubling, which the formation cost is estimated to fit, and the college gradient, 0.135 against 0.121. In the quadratic specification, the model's quadratic form is positive definite, with eigenvalues of 0.052 (0.010) and 0.019 (0.011) points per (10 pp)^2, as Proposition 1 implies. The data's eigenvalues, 0.050 (0.039) and -0.027 (0.064), cannot distinguish the form from zero, and the difference between the quadratic terms of the data and of the model is not significant ($p = 0.51$).

The model does not produce the White-share gradient. Per 10 pp of White-share gap, the model's probability falls by 0.057 percentage points (0.020), while the data's rises by 0.116 (0.063). The difference is 0.173 (0.061). The White-share gradient is the part of Fact 2 that a model of policy preferences without preferences over neighbors leaves unexplained.

5.6 The gains from incorporation

The average resident of a new municipality gains 0.219 percent of income, about as much as 9 percent more of every public good at the same tax would be worth. The tax base and zoning account for almost all of it, 0.098 and 0.115 percentage points; public goods add 0.006. The average resident of the remainder loses 0.013 percent, mostly through the tax base that the new municipality takes with it. Inside the new municipality, the gains go to the residents whose preferred zoning prevails.

For each incorporator, I ask how its incumbent residents and those of its remainder value the separate

[45] The model's probability is the fitted probability of Table 7, column 1, whose state-by-decade effects match the number of incorporations in each state and decade. The 19 place-decades of the formation panel without the Fact 2 regressors have no incorporation. Standard errors are clustered by county and ignore the estimation error in the model's probability.

Table 8: Who incorporates: the data and the model

	Linear			Quadratic		
	Data	Model	Difference	Data	Model	Difference
White-share gap Δ^W	0.116	−0.057	0.173	0.206	0.065	0.141
	(0.063)	(0.020)	(0.061)	(0.091)	(0.028)	(0.090)
College-share gap Δ^C	0.121	0.135	−0.014	0.074	0.090	−0.017
	(0.146)	(0.035)	(0.144)	(0.130)	(0.031)	(0.133)
Log income ratio	0.098	0.095	0.003	0.109	0.108	0.001
	(0.038)	(0.012)	(0.037)	(0.038)	(0.011)	(0.038)
Log population	0.332	0.335	−0.003	0.338	0.352	−0.014
	(0.074)	(0.036)	(0.074)	(0.076)	(0.036)	(0.077)
$(\Delta^W)^2$				0.021	0.052	−0.031
				(0.017)	(0.010)	(0.021)
$(\Delta^C)^2$				0.002	0.019	−0.017
				(0.057)	(0.012)	(0.056)
$\Delta^W \Delta^C$				0.074	−0.005	0.078
				(0.085)	(0.020)	(0.080)
Eigenvalues of $\mathbf{\Phi}$				0.050	0.052	
				(0.039)	(0.010)	
				−0.027	0.019	
				(0.064)	(0.011)	
Quadratic terms, p				0.306	<0.001	0.506
Composition terms, p	0.149	<0.001	0.017	0.295	<0.001	0.048
Robustness set of preferences						
White-share gap Δ^W	0.116	0.006	0.110	0.206	0.066	0.140
	(0.063)	(0.018)	(0.057)	(0.091)	(0.021)	(0.086)
Composition terms, p	0.149	<0.001	0.140	0.295	<0.001	0.305

Linear regressions of the outcome on the design of equation (3.1), with state-by-decade effects, on the 21,723 place-decades of the formation panel with the Fact 2 regressors (352 incorporations); standard errors clustered by county (854) in parentheses. Data: 100 times the indicator of incorporation. Model: 100 times the fitted probability of Table 7, column (1) (or column 2 for the robustness set), whose state-by-decade effects match the observed incorporations of each state and decade. Difference: data minus model; its standard errors ignore the estimation error in the model's probability. Units as in Table 4; the data columns differ slightly from that table because the two samples differ by 55 and 23 place-decades (Section 5.4). p: Wald tests of the quadratic terms and of all composition terms.

policies of the two. I take the unincorporated county U which consists of the incorporator A and the remainder R with $U = A \cup R$ at the census before incorporation. I apply the policy rules (4.8) to (4.10) to U, A, and R, and evaluate equation (4.12) for each type in A and in R. Residents' locations and incomes are held at their values before incorporation. Other places in U that incorporate in the same decade stay in R. It covers the 352 incorporations of the formation panel. Within a territory, I average the gains of the four types with their shares of adults; across incorporations, I weight each incorporation equally. Two incorporators in the same county can have overlapping remainders. Preferences are homothetic, so all residents of a type in a territory have the same proportional gain.

Gains come from the tax base and zoning. The average resident of a new municipality gains 0.219 percent of income (bootstrap standard error 0.027), and the median incorporation gives its average resident 0.118 percent (Table 9). The gains are dispersed: the 10th percentile is -0.424 percent and the 90th 1.050 percent (Figure 10). Figure 11 and Table 9 split the gain into the six terms of equation (4.12). The tax base contributes 0.098 (0.034). Zoning contributes a net 0.115, the difference between a gain in amenities of 0.258 (0.027) and a rise in housing costs of 0.142 (0.012). Public goods contribute 0.006 in total: the mix adds 0.005 (0.001), and a slightly smaller share of housing expenditure spent on public goods, -0.014 (0.036), comes with a lower tax, 0.015 (0.061).

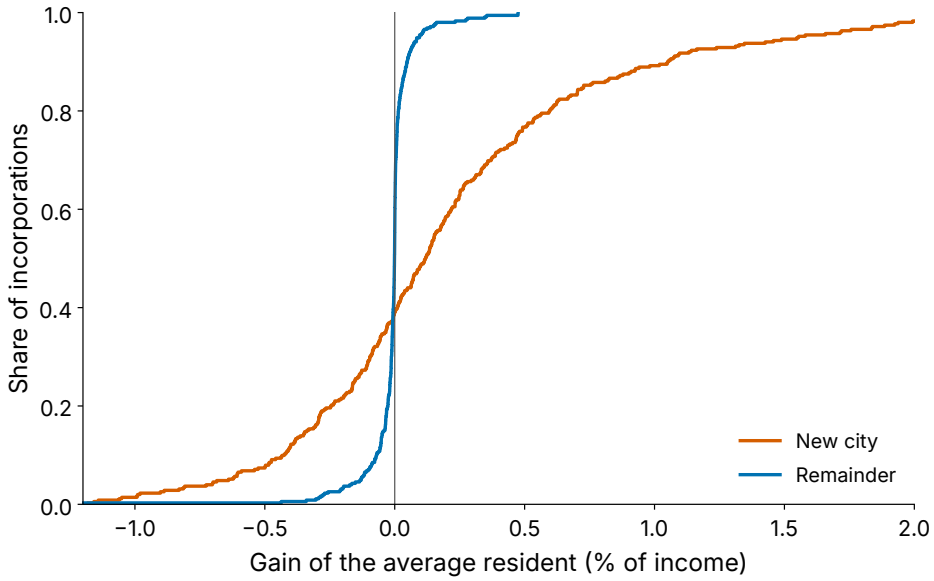


Figure 10: Gains are small on average and vary widely

Distribution across the 352 incorporations of the gain of the average resident of the new municipality and of its remainder, percent of income, benchmark set. The horizontal axis is cut at -1.2 and 2.0 percent.

The five policy terms sum to the gain from policy fit, 0.122 percent, and the tax base adds 0.098. Policy fit is large for zoning and small for public goods, because preferences differ much more over zoning. The total valuations of public goods are similar across the four types (Section 5.2), and although the ideal mixes differ, a new municipality's mix moves only as far as its composition differs from its county's. The preferred stringency differs by an order of magnitude: White residents prefer a stringency 9 to 61 times that of Other

Table 9: The gains from incorporation

	Benchmark		Robustness	
	New municipality	Remainder	New municipality	Remainder
Mean	0.219	−0.013	0.173	−0.012
	(0.027)	(0.005)	(0.021)	(0.004)
Median	0.118	−0.001	0.076	−0.001
10th percentile	−0.424	−0.069	−0.440	−0.067
90th percentile	1.050	0.047	0.974	0.044
Share whose average resident loses (%)	38.9	55.4	41.5	56.2
Mean contribution of each term of equation (4.12)				
Spending mix	0.0048	0.0001	0.0019	0.0000
	(0.0013)	(0.0000)	(0.0006)	(0.0000)
Spending level	−0.0137	0.0003	−0.0134	0.0001
	(0.0365)	(0.0020)	(0.0292)	(0.0015)
Tax	0.0151	−0.0003	0.0153	0.0000
	(0.0610)	(0.0017)	(0.0370)	(0.0014)
Tax base per household	0.0977	−0.0148	0.0989	−0.0149
	(0.0339)	(0.0052)	(0.0212)	(0.0037)
Zoning amenity	0.2579	−0.0029	0.2042	−0.0065
	(0.0270)	(0.0010)	(0.0230)	(0.0006)
Zoning housing cost	−0.1425	0.0043	−0.1340	0.0089
	(0.0119)	(0.0011)	(0.0116)	(0.0012)
Residents move (Section 5.7): mean gain				
$\theta = 6$	0.151		0.124	
$\theta = 3$	0.180		0.144	

Gain of the average resident, percent of income, 352 incorporations, each weighted equally; within a territory the four types are weighted by their shares of adults. Bootstrap standard errors in parentheses (99 draws of the preference estimates). Benchmark and robustness sets as in Table 6. The six terms sum to the mean. Residents move: first-order approximation with the new municipality's housing price adjusting; the remainder held fixed.

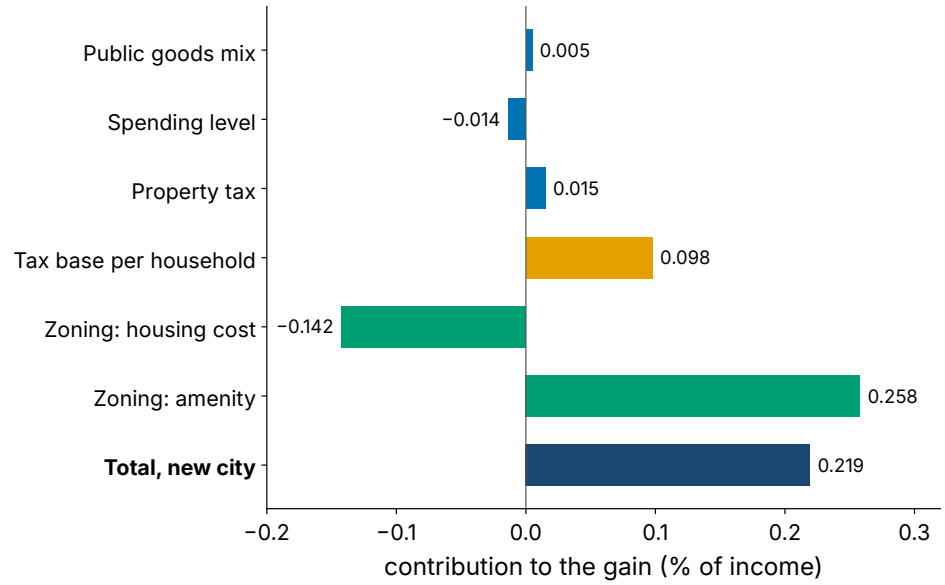


Figure 11: Gains come from the tax base and stricter zoning, not public goods

Mean contribution of each term of equation (4.12) to the gain of the average resident of a new municipality, percent of income, 352 incorporations, benchmark set (Table 9).

residents with the same education (Table 6). A new municipality therefore gains from setting the stringency its residents prefer, and 64 percent of new municipalities zone more strictly than their counties. As Proposition 1 implies, policy fit is never negative.

The tax base is a first-order term with either sign. In 57 percent of incorporations, the new municipality has a larger tax base per household than its county and keeps it. The average resident of a new municipality loses from incorporation in 39 percent of incorporations (137 of 352), and every one of them has a smaller tax base per household than its county: the resources it gives up exceed the policy fit it gains.

The remainder pays through the tax base. The average resident of the remainder loses 0.013 percent of income (0.005), and the average resident loses in 55 percent of remainders. The tax base costs the remainder 0.015 percent (0.005), and policy fit gives back 0.0015. The remainder's policies change little, because the incorporator is usually a small part of U: the median incorporator has 4.5 percent of the households of U, and the remainder's composition gap is the incorporator's gap times $-L_A/L_R$.

Who gains. Averaged over the residents of all new municipalities, White college residents gain 0.61 percent of income and White non-college residents 0.15 percent (Table 10). Other non-college residents gain 0.03 percent, and Other college residents lose 0.03 percent. The difference comes from zoning. A new municipality chooses the stringency that its majority prefers, and 325 of the 352 new municipalities have a White majority. Averaged over those incorporations, White college and White non-college residents gain 0.28 and 0.23 percent, mostly through the zoning amenity, while Other college and Other non-college residents lose 0.05 and 0.12 percent through higher housing costs. In the other 27, zoning becomes looser in 24: Other non-college residents gain 0.90 percent through lower housing costs, and the White minority loses 3.3 to 3.9 percent of

income through the zoning amenity. Averaged over incorporations rather than residents, every type's gain is slightly negative, -0.024 to -0.040 percent with standard errors of 0.06 to 0.13, because each type loses heavily in the new municipalities where it is a minority. In the remainder, the changes are small for every type, between a loss of 0.026 percent for White college residents and a gain of 0.005 percent for Other non-college residents.

Table 10: Gains by type of resident

	New municipality					Remainder	
	Residents	Incorporations		White	Other	Residents	Incorporations
		Mean	Share losing	majority	majority		
White college	0.61	-0.040	40.6	0.28	-3.86	-0.026	-0.009
		(0.065)					(0.005)
Other college	-0.03	-0.024	49.7	-0.05	0.26	-0.002	-0.011
		(0.120)					(0.008)
White non-college	0.15	-0.040	42.3	0.23	-3.33	-0.019	-0.010
		(0.056)					(0.004)
Other non-college	0.03	-0.040	50.9	-0.12	0.90	0.005	-0.012
		(0.127)					(0.009)
Incorporations		352		325	27		352

Percent of income, benchmark set. Residents: mean over all adults of the type in the 352 new municipalities (or their remainders). Incorporations: mean over incorporations, each weighted equally, with bootstrap standard errors; share losing: percent of new municipalities in which the type loses. White or Other majority: incorporations whose adults are at least half non-Hispanic White, or less than half; each incorporation weighted equally. Adults in new municipalities are 23.5, 5.5, 53.7, and 17.3 percent White college, Other college, White non-college, and Other non-college.

Sensitivity. The tax-base half of the gain does not depend on the zoning estimates, and the zoning half does not depend on the incidence of the tax. With the robustness set, which adds log population to the controls of every preference block, the average gain is 0.173 percent (0.021): the tax base contributes 0.099 and zoning a net 0.070. Because the zoning valuations of that set differ more by education than by race, so do the gains: averaged over incorporations, the two college types gain 0.160 (0.026) and 0.157 (0.035) percent and the two non-college types 0.029 (0.022) and 0.010 (0.045), while in the benchmark all four types are between -0.024 and -0.040. Over the range of incidence that the price regressions allow, $a \in [0.19, 0.92]$, the average gain is between 0.145 and 0.259 percent (Section 5.1).

5.7 When residents move

The main calculation holds residents in place. In an extension, households move into or out of the new municipality after it incorporates, by equation (4.16), and its housing price adjusts to the new demand. The calculation is a first-order approximation, and the remainder and the rest of the county stay at their values at incorporation. With $\theta = 6$, the number of households in the new municipality rises by 0.9 percent on average, and the higher price of housing costs its incumbent residents 0.06 to 0.08 percent of income, depending on the type. The average gain falls from 0.219 to 0.151 percent of income, and with $\theta = 3$ to 0.180 percent. The median household gains in 222 of the 352 new municipalities, with and without moves.

6 Counterfactuals

Who must approve an incorporation decides which places leave and who pays. In the baseline, only the residents of the place vote, although the remainder's policies and tax base change too. I consider two rules. Under double consent, the remainder must also approve, and it does when its average resident does not lose:

$$p_{it}^{\mathrm{DC}} = p_{it} \cdot \mathbf{1}\{\Delta\bar{v}_{R,it} \geq 0\}, \tag{6.1}$$

where p_{it} is the baseline probability and $\Delta\bar{v}_{R,it}$ the gain of the remainder's average resident. The remainder can veto an incorporation but cannot impose one. Under double consent with compensation, the new municipality can buy that approval: it pays the remainder's households, in proportion to their incomes, enough to leave the remainder's average resident as well off as before, and it incorporates if its own gain net of the payment exceeds its formation cost:

$$p_{it}^{\mathrm{DCT}} = \Lambda\big(b\,(\Delta\bar{v}_{it} - \tau_{it} - \chi \ln L_{it}) + \psi_{\ell(i)\times t}\big), \qquad \tau_{it} = \max\{0, -\Delta\bar{v}_{R,it}\}\,\frac{L_R\,\bar{y}_R}{L_A\,\bar{y}_A}, \tag{6.2}$$

where L_A and L_R are the numbers of households of the place and of its remainder, and $\bar{y}_A$ and $\bar{y}_R$ their average household incomes, so that the ratio in τ_{it} is that of their total incomes.

Each rule changes the probability of incorporation of every place-decade in the formation panel. The gains, the number of households, and the estimates of b, χ, and the state-by-decade fixed effects (Table 7, column 1) stay at their baseline values. The fixed effects make the expected number of incorporations in each state and decade equal the observed number, so the baseline reproduces the 352 incorporations, and place-decades in cells without an incorporation have probability zero under every rule. The expected number of incorporations is the sum of the probabilities. Table 11 reports it for each rule, overall, in California, and by size.

6.1 Double consent stops affluent places

Double consent reduces expected incorporations from 352 to 168.4, by 52 percent (Table 11). The remainder vetoes when the new municipality takes too much of the tax base with it: the remainder's net change and its tax-base term have the same sign in 347 of the 352 incorporations. Among the observed incorporations, the remainder would have vetoed 195, and 157 would have gone ahead.[46]

The places that double consent stops are affluent relative to the territory they leave. Weighting each place-decade by its baseline probability, household income in the stopped places is 1.26 times that of their remainder, against 0.85 in the places that still incorporate, and their tax base per household is 1.23 times as large, against 0.86 (Table 11, Panel B). Their average resident would have gained 0.57 percent of income, and their remainder loses 0.04 percent when they leave. Size does not separate the two groups: the stopped places have 2,405 households on average and the others 2,531, and the rule cuts expected incorporations by about

[46] In the model, the remainder's vote has no shock of its own, so it approves exactly when its average resident does not lose. Its stakes are small, so a shock as large as the place's would make its approval close to even odds everywhere, and double consent would then stop about half of all incorporations without selecting affluent places.

Table 11: Approval rules: expected incorporations and who is stopped

A. Expected incorporations

	Observed	Baseline	Double consent	Double consent with compensation	Revenue neutrality
All	352	352.0	168.4	325.5	325.3
California	45	45.0	20.5	40.0	40.0
Fewer than 1,000 households	186	192.9	94.6	178.6	178.4
1,000 to 5,000	86	108.6	49.0	99.9	99.9
5,000 or more	80	50.5	24.9	47.0	47.0

B. Incorporations weighted by their baseline probability

	Stopped by double consent	Kept under double consent	Restored by compensation
Expected incorporations	183.6	168.4	157.1
Income per household, place / remainder	1.26	0.85	1.23
Tax base per household, place / remainder	1.23	0.86	1.20
Households	2,405	2,531	2,427
Gain of the place's average resident (%)	0.57	−0.16	0.51
Gain of the remainder's average resident (%)	−0.04	0.03	−0.04
Zoning gap $\lvert \ln(z_A/z_R) \rvert$	0.19	0.33	0.19

C. Observed incorporations that the remainder vetoes

Vetoed (California)	195 of 352 (21 of 45)
Payment, % of the new municipality's income	p10 0.06; median 0.32; p90 0.83; mean 0.40
Gain before payment, median (%)	0.38; all 195 keep a gain after paying

Panel A: sums of probabilities over the 21,742 place-decades of the formation panel, from Table 7, column (1), whose state-by-decade effects match observed incorporations. Double consent: the remainder approves if its average resident does not lose (equation 6.1). Compensation: the new municipality pays the remainder's loss, in proportion to income (equation 6.2). Revenue neutrality: single consent, and the new municipality pays the remainder's loss of tax base. Panel B: means weighted by the baseline probability (stopped: baseline minus double consent; restored: compensation minus double consent), computed with the estimates of Table 7, column (1). Panel C: observed incorporations whose remainder's average resident loses.

half in each size class (Figure 12). The incorporations that still occur leave a larger tax base behind, so their remainder gains 0.03 percent, while their own average resident loses 0.16 percent from the modeled policies; in the model they incorporate because of the place shock. They also differ more from their remainder in zoning, $|\ln(z_A/z_R)| = 0.33$ against 0.19.

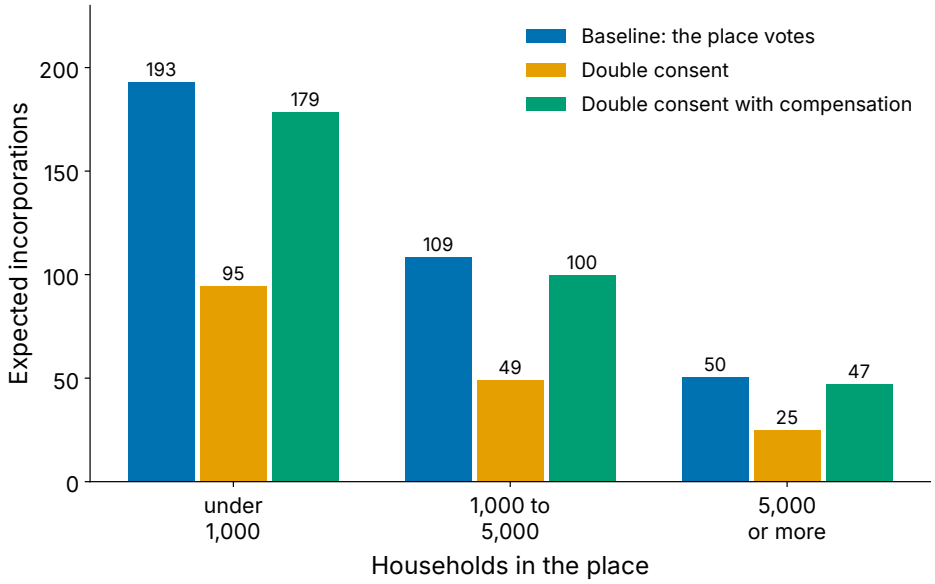


Figure 12: Double consent halves incorporations in every size class; compensation restores most

Expected incorporations over the 21,742 place-decades of the formation panel, by the number of households in the place at the start of the decade (Table 11, Panel A).

6.2 Compensation restores most incorporations

With compensation, expected incorporations fall only to 325.5, by 8 percent: the payment restores 157.1 of the 183.6 expected incorporations that double consent stops. The payment takes most of the gain of the places that make it, but never all of it. Among the 195 observed incorporations that the remainder would veto, it is a median 0.32 percent of the new municipality's income (10th and 90th percentiles 0.06 and 0.83 percent), against a median gain of 0.38 percent. Every one of them keeps a gain after paying, a median 0.04 percent and a mean 0.18 percent of income.

Proposition 1 explains why. The remainder's loss is the tax base it gives up, net of a small gain in policy fit, and the new municipality's gain is that tax base plus its own policy fit, which is never negative. A payment that covers the remainder's loss therefore leaves the new municipality with about its policy fit. With compensation, a place incorporates when its policy fit exceeds its formation cost, which includes the place shock, and the rule stops few places: those whose gain was mostly the tax base. Compensation changes who pays more than who incorporates. Across the other specifications of Table 7, double consent leaves 167.9 to 174.4 expected incorporations, and double consent with compensation 324.4 to 328.2; with the conditional logit, 168.8 and 325.9.

6.3 California's revenue neutrality

California's revenue-neutrality rule comes close to compensation, with two differences: the payment goes to the county government rather than to the remainder's residents, and it covers the county's loss of revenue rather than the residents' loss of welfare. Since 1992, a Local Agency Formation Commission may approve an incorporation only if it is substantially revenue neutral for the county, and new cities have paid counties to meet the requirement.[47] In the model, the corresponding rule makes the new municipality pay for the remainder's loss of tax base. It gives 325.3 expected incorporations, almost the same as full compensation, because the remainder's loss is almost all tax base.

The rule offers two checks. First, after 1992 California should see fewer incorporations that take tax base from the remainder. It does, and by more than the model predicts. Among California's incorporations dated 1992 or earlier, the remainder loses tax base in 18 of 31 (58 percent); among those dated 1993 or later, in 2 of 13 (15 percent; Fisher $p = 0.018$). In the other states the share does not change: 32 of 55 against 145 of 248, 58 percent in both periods. Under the model's version of the rule, the share of expected California incorporations whose remainder loses tax base falls only from 55 to 49 percent, while under double consent it falls to 0.3 percent. California after 1992 is thus closer to a veto than to a payment that new cities can easily afford, although the evidence rests on 13 incorporations.

Second, the payments should cover the loss of tax base. They do not in the two cases with reported payments. Goleta (2002) and Rancho Cordova (2003) agreed to annual payments to their counties of about 0.95 and 0.79 percent of their median household income per household, while in the model their remainders gain residential tax base, by 0.047 and 0.036 percent of income. The model's tax base is residential, and California's negotiations cover sales and other taxes as well. With the total taxable base in place of the residential base, the sign of the remainder's loss matches 7 of the 12 known revenue-neutrality outcomes, against 4 of 12 with the residential base.

Double consent selects by the effect on the remainder, which is the tax base. Compensation turns the veto into a price, and the price is the tax base, so the places that still incorporate are those whose policy fit exceeds their formation cost, place shock included. Both comparisons value changes in policy and exclude the formation cost. Both change the probability of each incorporation separately, on the observed set of unincorporated places, without modeling sequences of incorporations, annexation, or alternative boundaries. Both hold residents in place; with mobility, new residents would bid up housing prices in the new municipalities that the rules let through (Section 5.7).

7 Conclusion

Residents of an unincorporated place in the United States can form a municipal government of their own. The new government takes over the zoning, the municipal public goods, and the tax base of the place. This paper asks why places incorporate and who gains and who loses when they do. Across 353 incorporations in

[47] Government Code sections 56800 and 56815. Section 56815 allows alternative findings when the county and the affected agencies agree or when the negative fiscal effects are mitigated.

metropolitan areas from 1970 to 2020, larger places, Whiter places, and places with higher incomes than their unincorporated county are more likely to incorporate. After incorporation, the spending mix of the new municipality moves away from the county's, and new construction on the two sides of the new boundary diverges: the remainder builds more small lots, while the new municipality does not.

To value these changes, I estimate a model in which each government chooses public goods, a property tax, and zoning for its own residents. A place incorporates when the gain of its average resident exceeds a formation cost that falls with its size. The average resident of a new municipality gains 0.22 percent of income. The tax base contributes 0.10 percentage points and zoning, net of its housing cost, 0.12. Better-fitting public goods add almost nothing, because the four types value public goods similarly but value the amenity that zoning protects very differently. The average resident of the remainder loses 0.013 percent of income, mostly through the tax base that the new municipality takes with it. Inside new municipalities, the gains go to the residents whose preferred zoning prevails. In the 325 of 352 with a White majority, White residents gain, and Other residents lose a little through higher housing costs.

The two motives differ for the residents left behind. Policy fit is never negative on either side of the new boundary, while the tax base moves resources from the remainder to the new municipality. Approval rules therefore decide which communities leave and who pays. If the remainder must also consent, expected incorporations fall by 52 percent. The rule stops affluent places: household income in the places it stops is 1.26 times that of their remainder, against 0.85 in the places that still incorporate. If the remainder must consent but the new municipality can compensate it, expected incorporations fall by only 8 percent, to 325.5 of 352. The payment is about the tax base that the new municipality takes, and the new municipality keeps its policy fit. California's revenue-neutrality rule comes close to such compensation, but California after 1992 is closer to a veto: the remainder lost tax base in 2 of its 13 incorporations, against 18 of 31 before.

These results have limits. The main calculation holds residents in place. When households can move, newcomers bid up the price of housing in the new municipality, and the average gain falls from 0.22 to 0.15 percent of income. The gains value municipal public goods, the taxes that fund them, and zoning. They leave out landowners, the choice of boundaries, and interactions between neighboring incorporations. The formation cost is estimated as everything that makes incorporation rarer than the modeled gains predict, and it does not enter welfare. Finally, Whiter places incorporate more often than the modeled gains predict, which points to motives beyond the policies studied here, such as preferences over neighbors.

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A Tables

Table A.1: What it takes to incorporate in four states

	California	Washington	Texas	Missouri
Incorporations in the sample	46	16	44	23
Statutory minimum	500 voters	1,500 residents[a]	201 residents[b]	none
Review before the vote	commission[c]	review board	none	none[d]
Median years to incorporate	2.05	2.14	0.44	0.81
(dated campaigns)	(25)	(14)	(8)	(3)
Attempts per incorporation	1.56	2.12	1.11	1.00
Median households	6,840	7,625	159	39
Smallest, households	1,157	1,156	23	2
(place, year)	(Loomis, 1984)	(Mill Creek, 1983)	(DISH, 2000)	(Three Creeks, 2008)

California counts registered voters. (a) 300 before 1994. (b) 600 for a Type A city. (c) The Local Agency Formation Commission, with a fiscal analysis and a finding of revenue neutrality. (d) In St. Louis County, a boundary commission. Statutes: Cal. Gov. Code 56043, 56720, 56800, 56815; Wash. Rev. Code 35.02.010 (1,500 residents since 1994, 300 before; a higher minimum near large cities, now 3,000 within five miles of a city of 15,000, suspended from July 2023 to June 2028); Tex. Loc. Gov't Code 6.001, 7.001 to 7.003 (inside a city's extraterritorial jurisdiction, that city must consent, Sec. 42.041); Mo. Rev. Stat. 72.080 and 72.400 to 72.423. The first step is the first dated petition, filing, application, bill, or feasibility study of the successful campaign. Attempts per incorporation count all recorded attempts at the place up to its incorporation. Households at the census that opens the decade of incorporation.

B Institutions, Geography, and Measurement

B.1 State requirements and documented county objections

The institutional examples in Section 2 distinguish eligibility, review, voting, and mitigation. Florida Statutes section 165.061 specifies compact and contiguous territory, at least 1,500 residents in counties of 75,000 or fewer and 5,000 in larger counties, a density standard, and separation from an existing municipality, subject to the statute's stated exceptions. Section 165.041 requires a feasibility study addressing service costs, fiscal capacity, and a five-year operational plan. These requirements can affect the set of feasible proposals as well as the resources needed to organize one; the formation regression does not separately identify their effects.

California Government Code section 56815 compares revenues transferred with the direct and indirect expenditures for services assumed by the new government. It also permits approval when the county and other affected agencies agree or when a negative fiscal effect is adequately mitigated, including through revenue-sharing or payments. The statute therefore does not require every resident's gain to be nonnegative.[48]

DeKalb's FY2016 budget identifies police, parks, roads and drainage, and transportation as services exposed to revenue changes from annexations and incorporations. Its concern is net contribution: a departing area may generate more revenue than the costs the county avoids when that area leaves. A later county legislative record, file 2017-1457, proposed asking the Georgia General Assembly to require an additional referendum among residents of unincorporated DeKalb. That proposal documents a demand for broader consent, not an enacted statewide rule. Nor is its electorate identical to the separate remainder majority used here.[49]

The St. George example illustrates why projections and legal outcomes must be kept separate. The City-Parish's May 2019 statement projected an annual revenue reduction of $48.3 million and emphasized the outside residents' lack of a vote. This is a gross revenue projection, not a measured net fiscal or welfare loss. Its 2022 financial report also acknowledged that some service costs would fall and that legacy liabilities mattered. On April 26, 2024, the Louisiana Supreme Court reversed the denial of incorporation and ruled for the incorporators.[50]

These episodes establish the institutional relevance of outside fiscal effects without determining their magnitude in the model. Schools, legacy liabilities, administrative transition costs, sales taxes, and negotiated transfers are outside the modeled local-service budget. The quantitative decomposition measures changes in housing-expenditure capacity, chosen service policies, and housing incidence under its stated fiscal closure.

B.2 The institutional margin

An incorporated municipality remains geographically inside its county. The change in government reallocates authority over a subset of local policies; it does not sever every connection to county administration. The modeled county constituency is the unincorporated territory receiving the local services in the model. Actual county elections also include residents of existing municipalities. Treating the local-service constituency as the policy constituency is therefore a maintained approximation, not a description of the county electoral roll.

[48] The California Assembly's compilation of the Cortese–Knox–Hertzberg Act, sections 56800 and 56815, provides the fiscal-analysis and mitigation provisions. This institutional description is not a claim that the fitted California state effect isolates revenue neutrality from other legal or political factors.

[49] See the DeKalb County legislative record, file 2017-1457. The proposal refers to the unincorporated county as a whole, including the place that would incorporate. My counterfactual requires a distinct majority in the remaining territory as well as approval inside the unincorporated place.

[50] See the City-Parish 2022 Annual Comprehensive Financial Report, p. 119, and *Broome v. Rials*, Nos. 2023-C-01108 and 2023-C-01118. The Court records that the challenge was brought by the mayor-president and a councilmember; it should not be described as a suit filed by the parish itself.

California's incorporation process illustrates several distinct institutional margins. The state's incorporation guidelines describe a comprehensive fiscal analysis, service plans, LAFCO review, and a revenue-neutrality assessment. Fiscal mitigation can involve terms governing transfers or revenue sharing. An administrative assessment of fiscal effects is distinct from separate majorities in the departing and remaining constituencies. Accordingly, the double-consent experiment and the California cost experiment should not be interpreted as two implementations of the same legal rule.[51]

The Census Bureau's distinction between an incorporated place and a Census-designated place concerns legal government status. A CDP is a statistical representation of a named concentration of population. The set of unincorporated places is consequently a set of observed communities on fixed geography; it is not a record of every petition, defeated referendum, or feasible boundary.[52]

B.3 Four geographic benchmarks

The full county includes existing municipalities and is useful for some fiscal-account comparisons. The dynamic unincorporated county excludes municipalities that have already incorporated. A fixed endline remainder additionally excludes communities that will incorporate later. A nearby ring measures a local comparison area and need not coincide with any government's service territory. These objects have different residents, tax resources, and policy authority. They cannot be interchanged merely because each is called a comparison group.

The structural experiment uses the pre-decade unincorporated county U, removes one unincorporated place A, and calls the rest R. Other unincorporated places that incorporate during the same decade remain in R for this experiment. Each unincorporated place is thus evaluated against the same timing convention, without assigning an arbitrary order to events within a Census interval. Applying several such experiments in one county does not produce a simultaneous partition: the remainder populations overlap across experiments.

Whole-place municipal policy is preserved for multi-county municipalities. The current primary-county approximation combines whole A with the native remainder of its population-primary county. It does not partition the city budget into fragment governments. Because that combined object is not literally one geographic county, exact single-county results and the multi-county sensitivity are distinguished wherever used. Neither successful mass accounting nor a valid city budget resolves this geographic approximation.

B.4 Demographic composition and household resources

The four types are White college, Other college, White non-college, and Other non-college. Their native counts describe persons aged 25 and older. College means BA or above; Other is the complement of the White definition in the source, not a synonym for Black. Political weights are these four counts divided by their sum. Household counts, total population, and the adult population are retained as separate variables.

The historical panel allocates supported source contributions to fixed 2020 boundaries. The approved aggregation retains observed additive contributions and returns missing when no supported contribution exists. A missing source cell is not converted to a true zero. A QA flag records the reliability of an allocation; it is not itself an estimate of the mass of missing residents. In particular, the saved q80 measure is a fraction of proxy-block records with support, not an 80% population-coverage measure. The welfare support audit below records its effect separately from numeric availability.

At each physical fragment, resources are constructed as $E_i = (\mu_i'\beta)Y_i$, where Y_i is aggregate household

[51] See the California Governor's Office of Planning and Research, *A Guide to the LAFCO Process for Incorporations*, available from Sacramento LAFCO. The discussion of Government Code sections 56800 and 56815 concerns the fiscal-analysis and revenue-neutrality framework. The empirical state intercept is not an estimate of a statutory fee.

[52] See the Census Bureau's geographic glossary and CDP guidance. A statistical boundary does not create a municipal government.

income in annual real-2010 dollars. Historical income uses the inherited household-income-bin construction. The jurisdictional sum is $E_m = \sum_{i \in m} E_i$. In general this differs from $(\mu_m' \beta) \sum_i Y_i$: the latter reassigns income across types when locations are pooled. Keeping fragment resources additive prevents a boundary change from mechanically changing the amount of private resources in the experiment. Actual HH_m is the denominator for service congestion; median household income times households is not substituted for aggregate income.

The resource bridge is a limitation of measurement. Adult-person composition is not observed household-type composition, and type-specific household incomes are not observed in every historical geography. The maintained bridge does not estimate that missing joint distribution. It also means that an adult-weighted distribution of percentage gains should not be labelled a household-weighted distribution of dollar gains.

C Policy Derivations and Incidence

C.1 Household demand and the housing price

The first-order conditions for the normalized Cobb–Douglas aggregator imply $c_\nu = (1 - \beta_s) y_\nu$ and $h_\nu = \beta_s y_\nu / [(1 + t_m) q_i]$. Substituting these demands into utility gives equation (4.2). Summing housing demand over current residents gives $(1 + t_m) q_i H_i = E_i$. Combining this identity with the supply function yields equation (4.4); taking the log difference at fixed $E_i, w_i, \mathcal{A}_i$ gives

$$d \log[(1 + t_m) q_i] = a \, d \log(1 + t_m) + \kappa \, dz_m, \qquad a = \frac{\eta}{1 + \eta}.$$

The comparison permits a supply response to policy while holding the residents fixed. It is not a comparison with fixed housing quantities.

C.2 The spending allocation and total tax

At a fixed tax and thus fixed budget Q_m, the government chooses Q_{mk} to maximize $\sum_k \bar{\gamma}_{mk} \log Q_{mk}$ subject to $\sum_k Q_{mk} = Q_m$. Positive category weights give $Q_{mk}/Q_m = \bar{\gamma}_{mk}/\bar{\Gamma}_m$. Household congestion and common cost shifters are constants for this choice. The policy-dependent terms in the objective for the total tax are

$$\bar{\Gamma}_m \log t_m - (\bar{\Gamma}_m + a\bar{\beta}_m) \log(1 + t_m).$$

Differentiation gives $\bar{\Gamma}_m / t_m = (\bar{\Gamma}_m + a\bar{\beta}_m)/(1 + t_m)$, hence $t_m = \bar{\Gamma}_m / (a\bar{\beta}_m)$. Substitution yields the category spending rule. The interior solution is unique when $\bar{\Gamma}_m > 0$ and $a\bar{\beta}_m > 0$. If all service weights are zero, the optimal modeled tax is zero. If a single category has zero aggregate weight, its limiting allocation is zero; one must not evaluate an unweighted $\log 0$ as a numerical service loss.

C.3 Zoning and its preferred level

At fixed residents, zoning affects the government's objective through $\bar{\rho}_m \log z_m - \kappa \bar{\beta}_m z_m$. Its derivative is $\bar{\rho}_m / z_m - \kappa \bar{\beta}_m$, giving $z_m = \bar{\rho}_m / (\kappa \bar{\beta}_m)$. The second derivative is negative for $\bar{\rho}_m > 0$. Writing $z_s^* = \rho_s / (\kappa \beta_s)$ shows

$$z_m^* = \sum_s \frac{\mu_{ms} \beta_s}{\bar{\beta}_m} z_s^*.$$

The weights involve housing expenditure shares as well as political shares. The corresponding ideal tax is $t_s^* = \Gamma_s / (a \beta_s)$ and obeys the same averaging relationship. A common valuation and a common preferred

policy therefore impose different restrictions.

Fiscal preferences, resources, and outside financing do not enter this zoning derivative under the maintained separability and fixed-incumbent resource closure. This is the precise reason the fiscal re-estimation does not mechanically change ρ. That result would need reconsideration if zoning changed another component of the budget or if the government internalized endogenous constituency changes when setting policy.

C.4 Policy fit and the tax base

Equation (4.12) gives the gain of each type. Averaged over a territory's residents, it splits into the two motives for incorporation that the literature emphasizes, policies that fit the residents and resources that they keep (Alesina et al., 2004). Let $\Delta\bar{v}_j = \sum_s \mu_{js}\Delta v_{js}$ be the gain of the average resident of $j \in \{A, R\}$.

Two properties of the model drive the split. First, the government of j chooses the policy that maximizes the average utility of j's residents. Under the county's policy, j's residents get a bundle chosen for a different constituency, so they lose relative to the bundle of their own government, and the loss is zero only if the two bundles coincide. Second, the tax base per household enters utility only through the term $\Gamma_s \ln e_m$, which no policy changes. Incorporation therefore removes a mismatch loss and moves resources between A and R.

To state the result, describe a fiscal policy by how it divides each dollar that residents spend on housing: the share $1 - \sigma_m$ pays for housing net of the tax, and the shares $\sigma_m\lambda_{mk}$ pay for the three public goods. Collect the four shares in

$$\boldsymbol{\omega}_m = (1 - \sigma_m,\ \sigma_m\lambda_{m1},\ \sigma_m\lambda_{m2},\ \sigma_m\lambda_{m3}),$$

let $\Omega_m = \bar{\Gamma}_m + a\bar{\beta}_m$, and let $\mathrm{KL}(\mathbf{p}\|\mathbf{q}) = \sum_k p_k \log(p_k/q_k)$ be the Kullback-Leibler divergence.

Proposition 1 (policy fit and the tax base). *Hold residents fixed, and let A and R choose policies by (4.8) to (4.10). For any policy of the county and for $j \in \{A, R\}$, the gain of the average resident is $\Delta\bar{v}_j = \mathcal{L}_j + T_j$, where*

$$\mathcal{L}_j = \Omega_j \,\mathrm{KL}(\boldsymbol{\omega}_j\|\boldsymbol{\omega}_U) + \bar{\rho}_j\left[\frac{z_U}{z_j} - 1 - \log\frac{z_U}{z_j}\right] \geq 0, \tag{C.1}$$

$$T_j = \bar{\Gamma}_j \log\frac{e_j}{e_U}. \tag{C.2}$$

(i) If the county also chooses by (4.8) to (4.10), then to second order in the composition gap $\boldsymbol{\mu}_j - \boldsymbol{\mu}_U$,

$$\mathcal{L}_j = \tfrac{1}{2}(\boldsymbol{\mu}_j - \boldsymbol{\mu}_U)'\mathbf{M}_j(\boldsymbol{\mu}_j - \boldsymbol{\mu}_U), \tag{C.3}$$

where $\mathbf{M}_j$ is positive semidefinite and depends on the composition of j. If γ_{sk}, β_s, and ρ_s are additive in race and education, then to second order $\mathcal{L}_j = \frac{1}{2}\boldsymbol{\Delta}_j'\mathbf{Q}_j\boldsymbol{\Delta}_j$, where $\boldsymbol{\Delta}_j = (W_j - W_U,\, C_j - C_U)$, W_j and C_j are the shares of j's households that are White and college educated, and $\mathbf{Q}_j$ is a 2×2 positive semidefinite matrix that depends on these shares. (ii) Unless $e_A = e_U$, T_A and T_R have opposite signs, and $L_A(e_A - e_U) + L_R(e_R - e_U) = 0$.

The first term of $\mathcal{L}_j$ is the fiscal mismatch. A government that chooses for j divides each dollar of housing expenditure in proportion to how much j's average resident values each use: ω_{jk} is proportional to $\bar{\gamma}_{jk}$ for the public goods, and ω_{j0} to $a\bar{\beta}_j$ for the housing payment, since a is the share of the tax that residents bear. Under the county's policy, the dollar is divided as $\boldsymbol{\omega}_U$. The loss is the divergence between the two divisions, scaled by Ω_j, the total weight that the average resident puts on the four uses. The second term is the zoning mismatch, weighted by the value of the zoning amenity: $x - 1 - \log x$ is zero at $x = 1$, positive elsewhere, and close to half the square of $\log x$ near $x = 1$. Under the county's zoning, j's residents either pay for more amenity than they want or get less than they would pay for. The loss is not symmetric: for the same gap in log stringency, a county that zones more strictly than j's ideal level costs j's residents more than one

that zones less strictly, because the housing cost of zoning is linear in z and the amenity is logarithmic. The term T_j is the tax base: a territory whose households spend more on housing than those of U keeps its larger base after incorporation, and gains $\bar{\Gamma}_j$ per log point.

Three implications follow. First, policy fit is second order in composition. When the county chooses by the same rule, each policy is a smooth function of the composition of residents, so the policy gaps between j and U are linear in the composition gap to first order, and the loss is a quadratic form in it. A place twice as different from its county gains about four times as much from policy fit, and the direction of the difference does not matter. Second, the tax base is first order and a transfer. The tax base per household of U is the household-weighted average of those of A and R, so what one side keeps, the other loses. In welfare terms the transfer is not zero-sum, because utility is logarithmic in resources, but its sign differs between the two sides. Third, the remainder gains from policy fit too, but less when the incorporator is small: its composition gap is the incorporator's scaled by $-L_A/L_R$, so its loss is smaller by the square of this ratio, up to the difference between $\mathbf{M}_R$ and $\mathbf{M}_A$. The proposition concerns averages. A type whose ideal policy is far from that of its jurisdiction can lose from policy fit, and the four types can gain or lose more than the average.

The proof uses only the policy rules. Average the fiscal terms of (4.12) over j's residents. Because $1/(1+t_m) = 1-\sigma_m$, the tax term becomes $a\bar{\beta}_j \log(\omega_{j0}/\omega_{U0})$, and the mix and level terms combine into $\sum_k \bar{\gamma}_{jk} \log(\omega_{jk}/\omega_{Uk})$. By the policy rules of j, these weights are proportional to j's own division of the dollar, $\bar{\gamma}_{jk} = \Omega_j \omega_{jk}$ and $a\bar{\beta}_j = \Omega_j \omega_{j0}$, so the sum is $\Omega_j \sum_k \omega_{jk} \log(\omega_{jk}/\omega_{Uk})$, a Kullback-Leibler divergence. The zoning terms average to $\bar{\rho}_j \log(z_j/z_U) - \kappa\bar{\beta}_j(z_j - z_U)$, and the zoning rule $\kappa\bar{\beta}_j = \bar{\rho}_j/z_j$ turns this into the second term of (C.1). Both terms are nonnegative, and their second-order expansions are $\frac{1}{2}\Omega_j \sum_k (\omega_{jk}-\omega_{Uk})^2/\omega_{jk}$ and $\frac{1}{2}\bar{\rho}_j(\log z_j - \log z_U)^2$. These steps use only j's own rule, so the decomposition and the sign of $\mathcal{L}_j$ hold whatever policy the county chooses. Part (i) uses the county's rule. Each policy is then a smooth function of composition: $\boldsymbol{\omega}_m$ is the normalized average of the types' vectors $(a\beta_s, \gamma_{s1}, \gamma_{s2}, \gamma_{s3})$ with weights μ_{ms}, and $\log z_m = \log\bar{\rho}_m - \log\bar{\beta}_m - \log\kappa$. The policy gaps are therefore linear in $\boldsymbol{\mu}_j - \boldsymbol{\mu}_U$ to first order, which gives (C.3) with a sum of positive semidefinite matrices. Additivity makes every average $\bar{x}_m$ a linear function of the White and college shares.[53] Part (ii) follows from $e_U = (L_A e_A + L_R e_R)/L_U$.

C.5 Decomposition and small policy-matching gains

Let $p_{mk} = \bar{\gamma}_{mk}/\bar{\Gamma}_m$ and $b_m = \bar{\Gamma}_m/(\bar{\Gamma}_m + a\bar{\beta}_m)$. Then $Q_{mk} = p_{mk} b_m E_m$. For common category costs, the service term separates as

$$\sum_k \gamma_{sk} \log \frac{g_{jk}}{g_{Uk}} = \sum_k \gamma_{sk} \log \frac{p_{jk}}{p_{Uk}} + \Gamma_s \log \frac{b_j}{b_U} + \Gamma_s \log \frac{E_j/HH_j}{E_U/HH_U} + \sum_k \gamma_{sk}(1-\phi_k) \log \frac{HH_j}{HH_U}. \tag{C.4}$$

If endpoint costs differed, the right side would additionally contain $\sum_k \gamma_{sk} \log(a_{Uk}/a_{jk})$. The benchmark sets that term to zero explicitly. With $\phi_k = 1$, the final size term also vanishes. Income-resource differences, however, do not vanish when the service cost has no scale economy.

With common Γ, the constituency's average pure mix gain is

$$\Gamma \sum_k p_{jk} \log(p_{jk}/p_{Uk}) \geq 0.$$

[53] The estimates are close to additive but not exactly. The total valuation Γ_s and the ideal mix λ_{sk} are each additive, so $\gamma_{sk} = \Gamma_s \lambda_{sk}$ is not; its interaction is below 5 percent of γ_{sk} for protection and infrastructure. The housing shares have an interaction of 0.025, about a tenth of β_s. The policies therefore also depend, slightly, on the share of White college households.

It is a divergence between two service mixes and is locally second order near equality. The average zoning gain is similarly

$$\bar{\rho}_j \left[x - 1 - \log x\right] \geq 0, \qquad x = z_U / z_j.$$

These statements concern each constituency's weighted average gain from moving to its own preferred policy. They do not imply that every type benefits. They also do not imply that the total separation gain is nonnegative: fiscal-resource incidence and formation costs remain. Small average matching gains are consistent with heterogeneous policy tastes if the optima of the place and of the county are close.

C.6 Percentage gains, aggregation, and missing heterogeneity

The income-equivalent gain of type s is $IE_{js} = 100[\exp(\Delta v_{js}) - 1]$. A place's mean of individual percentage gains is $\sum_s \mu_{js} IE_{js}$. This differs from $100[\exp(\sum_s \mu_{js} \Delta v_{js}) - 1]$ because the exponential is nonlinear. Both can be computed, but one should not substitute the latter for an average of residents' gains without changing the estimand.

Within a given jurisdiction, all members of a type have the same proportional gain under the maintained homothetic model and common policy exposure. The within-jurisdiction distribution therefore has up to four mass points. Different household incomes translate the same proportional gain into different dollar equivalents, but the historical data do not supply a full type-specific income distribution for that calculation. Ownership, tenure, heterogeneous tax incidence within type, and individual service access are outside the present four-type benchmark. The reported distribution should not be read as measuring those omitted margins.

D A density microfoundation of the zoning amenity

This appendix shows that the zoning term of the utility function (4.1), $z_m^{\rho_s}$, is the reduced form of a congestion amenity under two restrictions. Let type s value the density of its location through the amenity $D_i^{-\varrho_s}$, with $\varrho_s \geq 0$, where D_i is the number of households per unit of residential land in location i once the location is built out under its zoning. This is the amenity of Parkhomenko (2023), which falls with the number of a city's residents at a constant elasticity, with the city's land fixed, so that it falls with density.

Restriction 1 (the minimum lot binds at build-out). Each household occupies one lot of the minimum size, so that density at build-out is the inverse of the minimum lot: $D_i = 1/\mathrm{MLS}_{m(i)}$.

Restriction 2 (the conversion of stringency). Stringency is the power transformation of the minimum lot in equation (5.2): $\log \mathrm{MLS}_m = \overline{\log \mathrm{MLS}} + d \log z_m$.

Under the two restrictions,

$$D_i^{-\varrho_s} = \mathrm{MLS}_m^{\varrho_s} = e^{\varrho_s \overline{\log \mathrm{MLS}}} z_m^{\varrho_s d},$$

so the density amenity equals the zoning term of (4.1) with $\rho_s = \varrho_s d$, and the constant $e^{\varrho_s \overline{\log \mathrm{MLS}}}$ is absorbed by the location amenity B_{is}. With $d = 0.628$, an estimate of ρ_s implies an elasticity of the amenity with respect to density of $\rho_s / 0.628$.

Three remarks qualify the result. First, Restriction 1 is stronger than what the result needs. It requires lots at the minimum, while Fact 3 shows only that most new lots respect it: about seven in ten new lots in an incorporator are at least 98 percent of its detected minimum lot. The result needs only that density at build-out fall with the minimum lot at a constant elasticity, in which case ρ_s is $\varrho_s d$ times that elasticity. The elasticity is one when the minimum shifts the whole distribution of lot sizes proportionally.

Second, D_i is the density that the regulation implies, not the density of the current residents. With residents and land fixed, the current density does not change when zoning changes, so an amenity from

current density would give zoning no value to voters who take the residents as given. Density at build-out is a property of the regulation, and these voters can value it, which is the sense in which the footnote of Section 4.1 lets the regulation enter utility. If voters instead anticipated how zoning changes the number of households and rents, as the owners in Parkhomenko (2023) do, density would be an equilibrium object and the policy rules would have no closed form.

Third, the cost of zoning is unchanged, and the interior zoning choice is a property of the conversion. Zoning lowers the productivity of developers as $e^{-\kappa z_m}$, as regulation lowers construction productivity in Parkhomenko (2023). Under Restriction 2, the housing cost $\kappa \beta_s z_m$ is convex in the log minimum lot and the amenity $\rho_s \log z_m$ is linear in it, which gives the interior choice (4.10). If stringency were instead linear in the log minimum lot, the logged amenity would be linear in z_m, as the housing cost is, and the zoning choice would be at a corner. So would it with an amenity from the current number of residents, which voters who take the residents as given do not expect zoning to change.