Fragmentation and firm choice: The effects of municipal decentralization on firm-level agglomeration economies*

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Abstract

Placeholder

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1 Introduction

Metropolitan regions in the United States are characterized by a distinct lack of centralized authority, being instead composed of a patchwork of fragmented municipal governments. Indeed, the US Census of Governments records 35,673 different general purpose governments categorized as either municipalities or townships, a number that contrasts dramatically with the only 935 Census-recognized core-based statistical areas (CBSAs) that denote distinct city-regions. At the same time, not all regions are created equally fragmented: within the Miami metropolitan statistical area there exist 104 separate municipal entities, whereas the upstate region of Jacksonville counts only 16. Naturally, with such a high degree of variance in urban political frameworks, scholarship has devoted a significant amount of energy to identifying how the degree of municipal fragmentation affects outcomes.

Aside from the proliferation of "general-purpose" governments, American metros also see fragmentation through special-purpose governments such as school districts that overlap municipal borders. This type of fragmentation is often termed as "vertical" fragmentation, in which multiple tiers of government operate in the same space. Conversely, the splintering of a metropolitan area along the boundaries of different municipal governments within the *same* tier is referred to as "horizontal" fragmentation. While the complex webs of responsibility that vertical fragmentation creates have been widely critiqued in both the theoretical and empirical literature, more controversy has arisen on the subject of horizontal fragmentation, with the economics literature offering competing perspectives on fragmentation's welfare outcomes. Analysis of these outcomes generally concentrates itself upon the implications of mobile households and the public goods provided to attract them. Complementing this, I choose to look at how municipalities interact with firms in metropolitan systems of interlocal competition. American municipalities generally have a robust set of tools available to incentivize firms to relocate, a fact brought into the national attention by the intense campaigns (or bidding wars) waged by local governments in 2017 to attract Amazon's HQ2. While less attention-grabbing, a similar process plays out within metropolitan borders (Schragger

2019), with competition for firms more often than not acquiring a local, rather than national, flavor.

Research on municipal fragmentation has tested a variety of outcomes, from urbanization (Capelli et al., 2020) to local spending (Hendrick et al., 2011) to long-run economic growth (Grassmueck and Shields, 2010). I choose to focus on the spatial agglomeration of firms: does the jurisdictional "tapestry" change how firms cluster? I connect this to a growing literature suggesting strong agglomeration economies in which firms receive significant benefits from locating close to other firms, through mechanisms such as knowledge spillovers and labor pooling. Specifically, I direct my analysis in light of recent work on the *attenuation* of these benefits that suggest that the effects of these agglomeration economies may disappear at scales as small as thousands of meters. As such, even slight spatial rearrangements of firm location in response to municipal incentives may have dramatic effects on economic growth.

In this paper, I investigate the role of spatial agglomeration as a specific mechanism by which fragmentation affects economic growth, introducing techniques from the literature on spatial agglomeration to discussions of municipal fragmentation. I first introduce a basic model of firm location and demonstrate that intralocal competition has the potential to upset the "natural" equilibrium of firm choice. I then move towards the empirical argument, in which I use an instrumental variables strategy similar to the "small-streams" approach developed by Hoxby (2003) and later used as an instrument for municipal boundaries by Hatfield et al. (2024) , using small waterways as an exogenous determinant of jurisdictional borders. I build on this previous literature by expanding the strategy to encompass a more nuanced reading of fragmentation: in contrast to Hatfield et al.'s use of *county* borders, I construct municipal counts, as well as municipal Herfindahl-Hirschman Indices (HHI) with respect to population and land area. To assess spatial agglomeration, I match firms from County Business Patterns (CBP) data to census block level employment data, creating a probability-weighted series of discrete firm locations. I generate a global measure of agglomeration at the CBSA using Ripley's K function to identify the degree to which the clustering of firms departs from random location choice.

I find... [results go here]

2 Literature Review

The contemporary economics literature offers competing interpretations of the welfare implications of municipal fragmentation, being divided into two large camps. The first are those supporting a Tiebout-style hypothesis that intralocal competition produces the most efficient outcomes. Tiebout (1956) argued that household relocation - "voting with their feet" - drove a market for local governments that ensured their efficiency and responsiveness. Moreover, Brennan and Buchanan (1978) stressed the importance of an array of local governments in tempering the potential for fiscal exploitation by a central authority. On the other hand, Oates (1972) noted the potential for inefficient policy outcomes to arise from externalities between jurisdictions, complemented by Zodrow and Mieszkowski (1986), who viewed competition as a race to the bottom that dampens the ability of local governments to provide public goods.

Recent empirical studies measuring orthodox economic outcomes tend to support the virtues of intralocal competition, with Grassmueck and Shields (2010) using panel data to identify greater economic growth in more fragmented metropolitan areas; Hatfield et al. (2024) finds similar positive effects for housing values. At the same time, Goodman (2019) and Freemark et al. (2020) both tie fragmentation to inequality, complicating the macro-level economic picture. A major barrier to studying the influence of fragmentation on outcomes at the metropolitan level is the rigidity of municipal boundaries over the last 50 years. While fragmentation at the horizontal level has undergone drastic shifts, with the mass consolidation of school districts in an attempt to stave off rural depopulation being particularly pronounced in the 1950s-1970s. Movements to create wide ranging "special districts," such as water, housing, or fire authorities have gained traction and steadily grown in the past 60 years, illustrating the increasingly complex web of jurisdictional networks utilized by local governments.

Following the theoretical basis laid out by Tiebout, much of the literature has centered on the implications of *household* mobility, investigating the degree to which household mobility creates disparate outcomes through the mechanism of intergovernmental competition. However, relatively little attention has been devoted to the role that firms play in this set-up. The 20th century equilibrium characterized by central business district (CBD) firm location and suburban households is rapidly changing in the contemporary American metropolis, with a growing share of suburban municipalities entering the marketplace for firms. Major firms are increasingly headquartered outside of the CBD, in part due to the growing power of suburban municipalities to offer competitive tax bundles as seen in Schragger (2019).

Municipalities have a range of levers to pull in attempting to lure firms within their boundaries. Among these, tax breaks (both business and property) and service provision are the most common, and can be targeted to favor both particular firms or industries, or "economic development" in general (Bartik 2017). The theory behind municipal competition for firms is well overviewed by Glaeser (2001), who articulates separate conditions under which fragmentation may both increase and decrease allocative efficiency. An important mechanism is the relative information and incentives of government and private actors: if municipalities are able to attract firms where their marginal effect is best felt and are incentivized purely by community benefit, then one would expect fragmentation to improve welfare. On the other hand, if benefits are not properly internalized, then intrametropolitan competition could adversely impact welfare. This approach is complemented by Ferrari and Ossa (2023), who locate the "subsidy" framework within a quantitative economic geography model at the state level. Interstate subsidy effects are also investigated by Slattery and Zidar (2020) and Slattery (2025), both finding that subsidies may not generate sufficient welfare benefits to justify their existence as "place-based policy." Mast (2020) complements this in a local context, finding that while municipal incentives do have some power to influence nearby firm location, the effects are highly local, and insufficient variance in policy choices by municipalities diminishes the strength of competition.

While growing competition between jurisdictions within metropolitan areas may be *prima facie* beneficial to the individual firm as it navigates towards lower tax burdens, this state of affairs is worrying in light of the large externalities or "spillover effects" generated by firms that they do not themselves internalize. Scholars as far back as Marshall (1920) have emphasized the role that industrial agglomeration plays in economic growth, with firm "clustering" often providing a conduit for growth. While there are numerous explanations for the mechanisms behind these externalities, the most intriguing is the role of knowledge spillovers: the theory that flows of ideas between similarly situated firms are a catalyst for innovation and productivity. Glaeser et al. (1992) famously investigated the role of firm agglomeration in a nationwide analysis that affirmed its productive power, a result confirmed by a host of subsequent studies (Glaeser and Gotlieb 2009; Ellison et al. 2010).

More recently, research has shed light on the explicit spatial range of agglomeration: at what point do the spillover effects accessed by proximity begin to attenuate? Rosenthal and Strange (2003) demonstrate strong local effects in which the benefits of firm entry diminish drastically past a five mile radius, whereas a host of more recent papers argue that this radius may be even smaller and limited to the range of 250-500 meters (Arzaghi and Henderson 2008; Ahlfeldt et al. 2014; Coll-Martinez 2019). Thus, while metro-level perspectives on agglomeration have little to say about jurisdictional fracturing within its borders, a more fine-grained analysis of firm spatial choice presents significant implications for the welfare effects of municipal fragmentation. Municipal subsidies could offer incentives for firms to relocate when they otherwise would have selected a location in greater proximity to similar firms in hopes of accessing spillovers. On the other hand, such incentives could create a coordinating strategy for similar firms to locate in municipalities that offer targeted subsidies, resulting in a degree of agglomeration that would not have been achieved due to a litany of other location choice factors.

3 Theoretical Model[1]

This is a work in progress. It will likely look similar to the framework section of Mast (2020), itself referencing the more lengthy model developed in Greenstone et al. (2010) to capture a working picture of firm location choice. A sample argument is offered below, and is adopted from Ahlfeldt et al. (2015). Consider a firm with a spatial production function, where j indexes the potential blocks available to locate:

$$y_j = A_j H_j^{\alpha} L_j^{\alpha - 1} \tag{1}$$

Where A is the final goods productivity, H is employment, and L is the measure of floor space used, with the former two taking Cobb-Douglas form. We further expand the A productivity term to introduce agglomeration effects, where

$$A_j = a_j Y_j^{\lambda} \qquad Y_j = \sum_{s=1}^{S} e^{-\delta \tau_j s} \left(\frac{H_s}{K_s} \right) \tag{2}$$

With Y reflecting the agglomeration benefits for location j given employment in surrounding blocks s, where externalities decline with travel time τ and the H/K term reflects workplace employment density. In this set-up, it is possible for firms facing different needs for labor and capital to locate in denser (closer to CBD) and less dense (suburban) environments. The effect of municipal competition enters into this set up in two distinct ways. First, different municipalities can attempt to lure firms to locate within their jurisdictional boundaries, a collection of blocks J, in which producers face an altogether higher production

[1] This section is still under development (and deliberation over whether it will be included in the final paper). I intend to develop a simple model, likely 1-2 pages max, that outlines the theoretical basis for the predictions I develop in the introduction and gives more intuition for how fragmentation affects firm locational choice. I believe this may help clarify some of the mechanisms for potential clustering or dispersion under fragmentation.

y given some collection of tax breaks and incentives. Moreover, if we assume agglomeration externalities are not sensitive to industry and monotonically decreasing with distance from the urban core (central city), then Y is decreasing in distance, providing a disincentive to locate far out. Importantly, while the effects of a tax break on some individual firm's y do not affect surrounding firms, they directly enter into all surrounding firms through decreasing each surrounding firm's Y, generating a potential loss in welfare as firms do not individually internalize the effect of their move on the surrounding agglomeration conditions.

I additionally consider a set-up in which firms are drawn weakly towards agglomeration in a metropolitan area that features jurisdictions with more knowledge of local conditions than firms. In this scenario, competition could be welfare-increasing as municipalities are better able to bid for firms that match their local needs.

4 Data

4.1 Measures of fragmentation

I define fragmentation as the dispersion of political "power" among different municipalities in a metropolitan area. Interpretations of what this practically means are contested, and I will use a set of different measures to ensure I am capturing multiple facets of patterns of municipal authority. The most basic measure is simply the number of municipal governments per capita within a metropolitan area, which I calculate using the *Census of Governments* data, which catalogues each municipal government in the US. *Census of Governments* data also captures municipal populations and tax accounts, which are used to create more sophisticated measures of the distribution of people and finance across a given metropolitan area. I use a Herfindahl-Hirschmann Index (HHI), given in its most basic form by the equation:

$$HHI = \sum_{i=1}^{n} (x_i)^2$$

Table 1: Summary Statistics for Municipal Fragmentation

Variable	(1) N	(2) Mean	(3) SD	(4) Min	(5) Max
# of Municipalities	908	69.02	95.31	1	377
# of Counties	908	5.198	5.508	1	29
Population HHI	908	0.330	0.220	0.0316	1
Share in Central City	908	0.500	0.219	0.0843	1
CBSA Population	908	1.455e+06	2.932e+06	61	1.361e+07
MSA or μSA	908	0.712	0.453	0	1

Where i is one of n municipalities in a CBSA, and x is the relative share of the variable of interest. For instance, if a metropolitan area has a single municipality with all of the population (such as Honolulu, HI), the HHI will be 1. Conversely, if the population is divided among 10 municipalities of equal size, the HHI will be 0.1.

CBSAs exhibit a high degree of heterogeneity, ranging from completely consolidated to extremely fragmented. The average CBSA is moderately fragmented with an average value of 0.330 and a 0.500 share of residents living within the central city. Recognizing that these statistics are not population weighted, it cannot be inferred that these are the conditions faced within a typical city, but they do convey the fact that metropolitan areas face distinct environments within which competition for firms operates.

4.2 Firm location

The most common dataset used to assess firm location in the US is the Census's County Business Patterns (CBP). However, while CBP provides detailed information of firm industry and employment, it aggregates at the ZIP code level, which raises concerns in light of a range of studies [2] suggesting an "attenuation" threshold of roughly 1,000-2,000 feet, beyond which spatial spillovers no longer operate. Given an average zip code radius of roughly two miles, this fact poses a significant challenge to analyzing the potential welfare effects of distribution

[2]See Arzaghi and Henderson (2008), Ahlfeldt et al. (2015)

across space, as the patterns of firm location *within* ZIP codes may be even more relevant than those *across* ZIP codes.

To address this, I use the "matching" approach developed in Buzard et al. (2017) to generate probabilistic firm locations based upon census block-level employment characteristics. This data is found in the Longitudinal Employer-Household Dynamics (LEHD) Workplace Area Characteristics dataset from the US Census. This data has the advantage of providing information at the finest possible spatial scale, noted in Census documentation as the "smallest level of geography" at which one can procure basic demographic data. Using unique geographic identifiers present in the data, I then match LEHD rows to TIGER Shapefiles to create enriched polygons with geospatial coordinates that contain each block's respective Workplace Area Characteristics.

Following this, I use HUD ZIP-Block crosswalk files to procedurally match each census block to a ZIP code. To determine the locations of firms, each block is given a weight as determined by their share of employment within the ZIP code. This matching procedure can be refined to locate firms given the first two characters of their NAICS code, which is given in WAC employment data. The final output is a distinct geographic point for every firm in a given metropolitan area enriched with predicted firm size and industry.

4.3 Ripley's K

To transform an array of points into a global measure of dispersion/concentration, I use Ripley's K function. This is given in plain form as

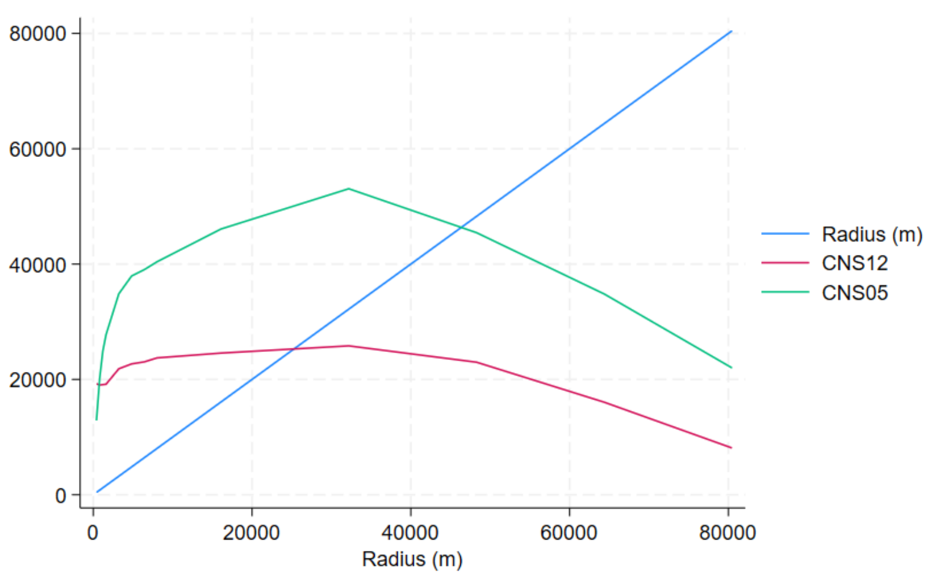
$$K(d) = \frac{1}{n} \sum_{i=1}^{n} \frac{N_i(d)}{\lambda}$$

Where d is a given radius, N is the number of points within radius d of point i, and λ is the overall point density. This is then normalized to

$$L(d) = \sqrt{\frac{\sum_{i=1}^{n} \sum_{j=1, j \neq i}^{n} k_{i,j}}{\pi n(n-1)}}$$

I run a sample calculation of this measure given points in Seattle, WA, with the results shown graphically. If firms are more concentrated than pure randomness, Ripley L values should be above a 45 degree line segment for each radius, as distributions in randomness are simply equal to the radius itself. Additionally, the distances between the Ripley L values and the randomness benchmark should be highest for radii at which we expect agglomeration to be most important: around 1000 meters. A final test of whether Ripley's L can capture accurate information about agglomeration is its power to differentiate industry level differences. To this end, the L function is calculated for firms categorized as NAICS 54 (Professional, Scientific, and Technical Services) and NAICS 31-33 (Manufacturing). The literature would expect to find higher L values for the former than the latter, as the potential benefits from innovation spillovers and person-to-person contact are higher in research-heavy industries compared to manufacturing.

Figure 1: Example Ripley L Calculation by Industry



The above values are calculated for all Workplace Area Characteristics employment data at the Census Block level. CNS05 corresponds to NAICS Codes 31-33, CNS12 to NAICS Code 54. At each radius under 40000 m, the concentration of manufacturing and research-intensive employment clusters. Moreover, the research-intensive industry exhibits a greater level of cluster across all radii than manufacturing, confirming the expectations of the literature on agglomeration patterns across industries.

5 Results

5.1 Small Streams

An ideal OLS estimate of municipal fragmentation's effect upon agglomeration would be written as

$$Agg_{jt} = \alpha + \beta Frag + \gamma X_j + \delta_j + \lambda_t + \epsilon_{jt}$$

Where *Agg* is a global measure of spatial agglomeration for CBSA j in year t, X is a vector of time-variant metropolitan area-level controls, and δ and λ are CBSA and year fixed effects, respectively. The parameter of interest is β, which captures the "fragmentation" of a given CBSA as measured through the indices described above. However, this approach presents a number of concerns. First of which is the considerable risk of omitted variable bias: the degree of municipal fragmentation may be determined by a range of factors that directly affect how firms choose to locate across space. For instance, rough terrain may have influenced initial settlement patterns, but also continues to affect where and how firms cluster. Moreover, there is a large reverse causality issue. Firms may locate in response to municipal incentives, but the creation of new municipalities may also follow patterns of economic activity. Thus, separating out the independent effect of municipal fragmentation on spatial agglomeration is crucial.

To do this, I instrument fragmentation with the length of small streams within a metropolitan area. Adopted from Hoxby (2000) and later used to directly measure municipal fragmentation in Hatfield et al. (2022), this approach identifies small, easily traversable waterways as natural borders at which to establish political boundaries that do not have a significant effect on the location of economic activity. Indeed, I argue that given the irrelevance of such waterways in any meaningful way for a firm's production activities, they would not act as a dispersing or concentrating force at the metropolitan area aside from their effect on municipal boundaries. In this specification, the first stage equation can be written as such:

$$Frag = \delta_0 + \delta_1 Streams + \Theta X_j + \delta_s + v_{jt}$$

Where s are state fixed effects and δ_1 is the parameter of interest. X is a set of topographic controls at the CBSA level, as it may be the case that while small streams do not directly affect firm location decisions, they can be correlated with other geographical characteristics (larger bodies of water, hilly terrain, etc.) that do exert a larger influence on agglomeration.

Stream lengths were calculated using the Environmental Systems Research Institute's (ESRI) North American Waterways GIS shapefiles as matched to the boundaries of CBSAs. Dummies were generated by location on either the Great Lakes or the Atlantic and Pacific Oceans, as these large water bodies may both influence the presence of small waterways within a given CBSA as well as the distribution of jurisdictional boundaries. Terrain ruggedness was introduced as a means of controlling for the potential presence of hilly or mountainous terrain, which both potentially correlates with the existence of waterways in a region while also introducing a spatial barrier to jurisdictional consolidation. This variable is calculated from terrain ruggedness estimates at the census tract level from the USDA Economic Research Service, then aggregated as standard deviation at the CBSA level.

Results are shown in Table 2. The number of municipalities is included as an outcome to serve as a robustness check on the possibility that streams are simply serving to redistribute populations across boundaries rather than affecting the boundaries themselves. The coefficients from estimates (2) and (4) are both highly significant at the 1% level, demonstrating

Table 2: First Stage Results for Small Streams IV

	Number of Municipalities	Population HHI		
	(1)	(2)	(3)	(4)
Stream Length (meters)	0.0000138***	0.0000104***	-5.08e-08***	-5.41e-08***
	(0.00000117)	(0.00000118)	(1.08e-08)	(1.56e-08)
On Great Lakes		4.503		-0.0305
		(2.943)		(0.0390)
On Ocean		-3.492		-0.107***
		(2.003)		(0.0261)
Terrain Ruggedness		-0.0459		0.000501
		(0.0693)		(0.000915)
Land Area (meters)		1.61e-11		-7.49e-12***
		(1.56e-10)		(1.98e-12)
Total Population		0.0000246***		
		(0.000000718)		
Constant	7.914***	4.787***	0.528***	0.577***
	(1.054)	(1.065)	(0.00966)	(0.0141)
State FE	No	Yes	No	Yes
R-squared	0.131	0.712	0.0238	0.322
Observations	916	913	916	913

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

high confidence in the relevance of stream length as an instrument. The magnitudes of the estimates are somewhat difficult to interpret given the differences in orders of magnitude between the outcomes and independent variables, though they indicate that an increase in the length of smalls streams within a CBSA is associated with a greater number of municipalities and a lower HHI (greater fragmentation).

5.2 Year of Municipal Incorporation

To enhance the validity of the identification strategy, an additional instrument is proposed: municipal year of incorporation. CBSAs that incorporated earlier in time may have a more fragmented municipal "tapestry" as transportation technology imposes limits on the practical feasibility of incorporation. Because municipal borders tend to not vary significantly over time, they are in effect "frozen" by the technology available at the time when first incorporated, generating exogenous variation in fragmentation outcomes.

To measure municipal years of incorporation, I use Goodman (2024)'s municipal incorporation database, which lists the year of incorporation for the vast majority of municipalities in the United States. I match these dates to each CBSA, gathering the year of incorporation for the "main" city (as listed in the Census CBSA title) as well as CBSA wide means and medians. The results shown in Table 3 suggest a strong correlation between the main year of incorporation in a CBSA and the HHI of population. All estimates are negative in sign and significant at the 1% level, and continue to be so when controlling for population and the decade of maximum CBSA growth, as well as estimating the same equation for the average year of incorporation across the entire CBSA (3 and 4), and including only CBSAs with populations greater than 100,000 (5 and 6).

6 Discussions

The results may include time-variant analysis, as well as tests of other IVs to more thoroughly establish instrument relevance. I also plan to conduct the same analysis in different industries, as there is a robust literature documenting the heterogeneous impacts of spatial agglomeration upon different types of firms. I will also provide discussion of the different measures of fragmentation: I plan on using an HHI of tax revenue as the best proxy for political fragmentation, as many of the channels discussed make heavy use of tax incentives as a means of attracting firms. However, here I may also incorporate checks with HHIs of

Table 3: First Stage Results for Municipal Incorporation IV

	Main City Incorp. Year	Average Incorp. Year			
	(1)	(2)	(3)	(4)	
(mean) yr_incorp_main	-0.000156	-0.00108***	-0.000450	-0.00134***	
	(0.000216)	(0.000195)	(0.000277)	(0.000258)	
(mean) log_pop		-0.0969***		-0.0985***	
		(0.00572)		(0.00959)	
(mean) max_decade		-0.0000751		0.0000266	
		(0.000230)		(0.000368)	
(mean) yr_incorp_av_all					-0.0
					(0.
Constant	0.798*	3.792***	1.236*	4.096***	7.
	(0.402)	(0.613)	(0.515)	(0.943)	(
R-squared	0.256	0.443	0.308	0.476	
Observations	908	908	386	386	

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

population and even area to see whether these less direct indicators of a “split” metropolitan area generate similar results.

7 Conclusion

References

[1] Gabriel M. Ahlfeldt, Stephen J. Redding, Daniel M. Sturm, and Nikolaus Wolf. The economics of density: Evidence from the berlin wall. 83(6):2127–2189.

[2] Mohammad Arzaghi and J. Vernon Henderson. Networking off madison avenue. 75(4):1011–1038.

[3] Timothy J Bartik. A new panel database on business incentives for economic development offered by state and local governments in the united states.

[4] Geoffrey Brennan and James M. Buchanan. Tax instruments as constraints on the disposition of public revenues. 9(3):301–318.

[5] Kristy Buzard, Gerald A. Carlino, Robert M. Hunt, Jake K. Carr, and Tony E. Smith. The agglomeration of american r&d labs. 101:14–26.
[6] Federica Cappelli, Gianni Guastella, and Stefano Pareglio. Institutional fragmentation and urbanization in european union cities. 55(2):269–281.
[7] Eva Coll-Martínez. Creativity and the city: testing the attenuation of agglomeration economies in barcelona. 43(3):365–395. Publisher: Springer.
[8] Glenn Ellison, Edward L Glaeser, and William R Kerr. What causes industry agglomeration? evidence from coagglomeration patterns. 100(3):1195–1213.
[9] Alessandro Ferrari and Ralph Ossa. A quantitative analysis of subsidy competition in the u.s. 224:104919.
[10] Yonah Freemark, Justin Steil, and Kathleen Thelen. Varieties of urbanism: A comparative view of inequality and the dual dimensions of metropolitan fragmentation. 48(2):235–274.
[11] Edward L. Glaeser and Joshua D. Gottlieb. The wealth of cities: Agglomeration economies and spatial equilibrium in the united states. 47(4):983–1028.
[12] Edward L. Glaeser, Hedi D. Kallal, José A. Scheinkman, and Andrei Shleifer. Growth in cities. 100(6):1126–1152. Publisher: University of Chicago Press.
[13] Christopher B. Goodman. Local government fragmentation: What do we know? 51(2):134–144.
[14] Georg Grassmueck and Martin Shields. Does government fragmentation enhance or hinder metropolitan economic growth? 89(3):641–658.
[15] John William Hatfield, Katrina Kosec, and Luke P. Rodgers. Housing values and jurisdictional fragmentation. 201(1):83–122.
[16] Rebecca Hendrick and Yu Shi. Macro-level determinants of local government interaction: How metropolitan regions in the united states compare. 51(3):414–438.
[17] Rebecca M. Hendrick, Benedict S. Jimenez, and Kamna Lal. Does local government fragmentation reduce local spending? 47(4):467–510. Publisher: SAGE Publications Inc.
[18] Caroline M. Hosxby. Does competition among public schools benefit students and taxpayers? 90(5):1209–1238.
[19] Evan Mast. Race to the bottom? local tax break competition and business location. 12(1):288–317.
[20] Stuart S. Rosenthal and William C. Strange. Geography, industrial organization, and agglomeration. 85(2):377–393. Publisher: The MIT Press.
[21] Cailin Slattery. Bidding for firms: Subsidy competition in the united states. 133(8):2563–2614.
[22] Cailin Slattery and Owen Zidar. Evaluating state and local business incentives. 34(2):90–118.
[23] Charles M Tiebout. A pure theory of local expenditures. 64(5):416–424.
[24] Georger Zodrow and Peter Mieszkowski. Pigou, tiebout, property taxation, and the underprovision of local public goods. 19:356–370.

Tables

Figures

Appendix A. Placeholder