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E PLURIBUS URBES: INTEREST GROUP ORGANIZATION'S EFFECT ON THE FRAGMENTATION AND GOVERNANCE OF AMERICAN URBAN AREAS

Matthew L. Howell

University of Kentucky, MatthewLHowell@gmail.com

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Matthew L. Howell, Student

Dr. Edward T. Jennings, Major Professor

Dr. Edward T. Jennings, Director of Graduate Studies

ABSTRACT OF DISSERTATION

Matthew L Howell

Martin School of Public Policy & Administration

University of Kentucky

2012

E PLURIBUS URBES: INTEREST GROUP ORGANIZATION'S EFFECT ON THE
FRAGMENTATION AND GOVERNANCE OF AMERICAN URBAN AREAS

ABSTRACT OF DISSERTATION

A dissertation submitted in partial fulfillment of the
Requirements for the degree of Doctor of Philosophy in the
Martin School of Public Policy & Administration
at the University of Kentucky

By
Matthew L Howell

Lexington, KY

Director: Dr. Edward T. Jennings, Professor of Public Administration and Political
Science

Lexington, KY

2012

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ABSTRACT OF DISSERTATION

E PLURIBUS URBES: INTEREST GROUP ORGANIZATION'S EFFECT THE FRAGMENTATION AND GOVERNANCE OF AMERICAN URBAN AREAS

American cities have proliferated in the post-War era. More than 2,000 new cities were founded between 1950 and 2000. While the history of the local government boom has been documented, research into urban fragmentation has explored why there is no consolidation of metropolitan areas rather than exploring why Americans chose fragmentation initially.

This dissertation proposes that individuals create new jurisdictions because individuals prefer to have governments which give them the services individuals desire, even if they could have similar (but not perfect) services cheaper in a larger jurisdiction. Individuals, however, must balance the benefit they get from better fitting cities with the price they must pay to live within the small cities.

In the first part of the dissertation, I synthesize the literatures on urban governance and fragmentation with the literature on interest groups. This synthesis builds the argument for conceiving cities as interest groups and contributes a theory of urban

behavior as the behavior of organized interest groups. I argue that urban fragmentation should exist anywhere there are urban areas –not only metropolises –and that fragmentation is produced by diversity in the population and constrained by the resources available for the formation of cities.

In the second part of the dissertation, I analyze the fragmentation of both metropolitan and non-metropolitan areas to determine what drives fragmentation. I use Poisson regression on 2-period panel data from 1992 and 2002 collected from various public sources. I find that there are differences in the forms of fragmentation in the metropolis and the non-metropolis. In both types of urban settlement, fragmentation is driven by political and population diversity and available resources for forming cities. Legal authority and intergovernmental revenue are particularly important.

Finally, I turn my attention to cities' interactions with each other. I use a survey of Kentucky mayors, fielded with the Kentucky League of Cities, to determine why mayors of different cities to communicate with each other. Using specialized network methods I find that mayor-to-mayor contact is not based on goal and interest similarities as expected, but rather depends on sharing an organization which encourages communication –an Area Development District.

KEYWORDS: City, Metropolitan Consolidation, Fragmentation, Intergovernmental Cooperation, Social Networks

Matthew L Howell

12 January 2012

E PLURIBUS URBES: INTEREST GROUP ORGANIZATION'S EFFECT THE
FRAGMENTATION AND GOVERNANCE OF AMERICAN URBAN AREAS

By

Matthew L Howell

Edward Jennings, PhD

Director of Dissertation

Edward Jennings, PhD

Director of Graduate Studies

12 January 2012

Date

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DISSERTATION

Matthew L Howell

The Martin School of Public Policy & Administration

University of Kentucky

2012

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Dedicated to Nathan Dunne

1985-2011

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Chapter 1

Introduction

1.1 Background

It is traditional to begin discussions of urban organization with the observation that there are more American cities today than ever before, and that the American people are moving into suburbs where once they would have lived in cities. This is treated as a great mystery –why the proliferation of local general governments? Alas, the great mystery is rarely addressed. As the population has grown in the post-War era, the number of local governments has increased by 2,000. Special districts have exploded. The population is divided across tens of thousands of local governments and continues to create more every year. And in this environment, the typical research question has been “why do these cities not consolidate?”

Consolidation has so many benefits. It enlarges the civil society of a metropolis and allows residents to get cheaper, more efficient services. It rationalizes public administration and creates larger, greater, more productive cities. If only citizens and their short-sighted officials would agree to consolidation, voters would approve annexation and merger, or states encouraged consolidation, life would be better in our urban areas.

Even among the supporters of the non-centralizing citizens, arguments are largely written as being against consolidation. Consolidation is inefficient because it reduces competition for voters. Consolidation is unequal because it forces residents with different preferences to share services which –unable to serve both perfectly –must serve all badly.

But the history of urban expansion is not one of failing consolidation. Residents are not resisting consolidation and holding onto their current jurisdictional arrangements. Americans are creating new jurisdictions. These jurisdictions do not appear because consolidation is bad, and they do not appear from the ether. Someone, somewhere, thinks that a new city is a good idea, and that increasing jurisdictional fragmentation is a net benefit. While scholars argue over why the organization of urban areas does not become more consolidated, and what the ideal number of jurisdictions should be, urban residents have gone on organizing their governments. Why do they do it?

How do urban residents organize new cities? Why is there urban fragmentation? Not, why does it persist, but why has the growing population not simply increased the sizes of existing jurisdictions? Why have there been more jurisdictions? These are the questions theories of metropolitan organization should ask because it is the phenomenon actually happening in the United States. The answer to these questions should influence how urban policy is made and how scholars think of the metropolis.

1.2 Research Question

This dissertation proposes that individuals create new jurisdictions because individuals prefer to have governments which give them exactly the services individuals desire, even if they could have similar (but not perfect) services cheaper in a larger jurisdiction. Individuals, however, must balance the benefit they get from better fitting cities with the price they must pay to live within the small cities.

In this way, residents of cities behave in the same way that individuals joining an interest group do. Both seek better fitting organizations which will reward cooperation

from the individual worker with exactly the services they want. In fact, there are more similarities between the two types of organizations. Both must motivate members to join, even when there is a cost. Both must provide benefits to members to maintain membership. Both have proliferated across American history.

Where city and interest groups theories differ is that interest group organization has an explanation in the form of the exchange theory of interest groups. A combination of entrepreneurial interest group formation, need to control resources, and competition between interest groups constrain them such that interest groups remain small and narrowly focused, leading in turn to fragmentation. But these factors are themselves driven by the need to convince members to join, pay dues (or taxes for cities), and for the organization to provide benefits in return. If the exchange theory of interest groups explains interest group proliferation because of these factors, then the same factors should explain local general government fragmentation. Furthermore, interest group theory predicts more than just fragmentation. It also explains aspects of interest group behavior when groups interact. If the constraints are the same, then local governments should behave the same way.

While this dissertation is in large part about fragmentation, its purpose is not a theory of metropolitan fragmentation. This has been studied in great depth by others. This dissertation is about how interest groups can explain the organization of urban areas –whether in the metropolis or out of the metropolis –and also how cities organize their super-organizations and cooperate (or not) amongst themselves.

In the first part of the dissertation, I synthesize the literatures on urban governance and fragmentation with the literature on interest groups. This synthesis builds the

argument for conceiving cities as interest groups and contributes a theory of urban behavior as the behavior of organized interest groups. As a first test of the theory, I argue that urban fragmentation should exist anywhere there are urban areas –not just in the metropolis –and that fragmentation is produced by diversity in the population and constrained by the resources available for the formation of new cities.

In the second part of the dissertation, I analyze the fragmentation of both metropolitan and non-metropolitan areas to determine what drives fragmentation. I use Poisson regression on a 2-period panel of data from 1992 and 2002 collected from various public sources. I find that there are differences in the forms of fragmentation in the metropolis and the non-metropolis. However, in both types of urban settlement, fragmentation is driven by political and population diversity and the resources available for forming new cities. Legal authority and intergovernmental revenue are particularly important resources.

Finally, as a second test of this theory, I turn my attention to how cities interact with each other. I use a survey of Kentucky mayors, fielded with the help of the Kentucky League of Cities, to determine what leads mayors of different cities to communicate with each other. Using specialized network methods, I find that mayor-to-mayor contact is not based on goal and interest similarities as expected, but rather depends on sharing an organization which encourages communication –an Area Development District.

1.3 Organization of the Study

The remainder of this dissertation is divided into 6 parts. In chapter 2, I introduce the previous research on local government growth and fragmentation and synthesize it with the interest group literature to provide insight into how local government is organized. I argue that cities behave like interest groups, and that they do so for the same reasons as interest groups. In important ways, cities are interest groups, and this explains why cities do not consolidate, why new cities form, what prevents new cities from forming, and why cities grow the way they do.

Chapter 3 builds on this synthesis with a theory of local government as interest group. As an interest group, cities are concerned with maintaining their autonomy and controlling resources, which drive cities to avoid conflict by forming small, homogeneous, niche organizations. This behavior is affected by the amenity value of living in a metropolitan area. The many nice things about living in certain places –like New York City –compensate residents for their choice of jurisdiction regardless of what the jurisdiction does. This leads to hypotheses to be tested in the subsequent chapters.

Chapter 4 explores jurisdictional fragmentation in Metropolitan Statistical Areas (MSAs). I describe how the theory is applied to the MSA, the selection of variables and creation of the dataset, and how the evidence should look if the hypotheses are correct. I then analyze the data by Poisson regression and supplement the analysis with analysis of other measures of fragmentation. I conclude with a discussion of the findings.

Chapter 5 explores jurisdictional fragmentation outside the MSA. It follows the rubric of chapter 4, describing the application of the theory, statement of hypotheses,

supplemental analysis on other forms of fragmentation, and concludes with a discussion of the findings.

Chapter 6 turns to the behavior of cities with each other. It summarizes the literature on how networks form and how interest groups form networks and applies it to the network of city mayors. The survey method and the social network analysis methods are described, and then the results discussed.

The final chapter summarizes the theory and findings before discussing what the findings mean and their implications for future research and for policy makers.

Chapter 2

Political Interest Groups and the City

2.1 Introduction

Political interest groups are a common component of American government. James Madison wrote in “Federalist 10” that faction was endemic to a free republic and that factious people would organize to gain the advantage each faction desired. In the new Constitution, he argued, the many local, state, and federal governments served to prevent faction running tyrannically across the entire republic while also allowing factions the liberty to live as they liked within their own jurisdictions. Interest group influence on public policy has been an intentional part of our government ever since. This has, naturally, attracted the attention of political scientists.

Scholars have investigated how factions organized, whether individual factions could dominate a single policy or polity, how did available resources constrain faction, and how –when factions, due to scarce resources, could not single-handedly control politics –factions worked together. This literature greatly expanded the understanding of how politics worked and how policy was made. As Madison suggested, the lessons applied to all types and levels of American government. In both the federal government and the state governments factions (henceforth interest groups) competed amongst each other for control of political power. The same happened in local governments, but with a twist. Compared to states and the federal government it is relatively easy to form a new local government. Where, in the state and federal government, interest groups must compete in a near zero-sum game for influence, at the local level it is quite possible for

an interest group to form the very government it intends to lobby. Much of the research on interest groups argued that organization was the most important component in the success of an interest group. If interest groups are experts at organization, then they could also organize local governments.

Interest group organization of local governments –particularly regarding resources necessary to control policy –is consistent with history of urban growth in the United States. At the founding, local governments were few and far between. As the country became richer and government became cheaper there was an explosion of local general and special governments. Simultaneously there was an explosion in the number of organized interest groups.

There are other similarities. Cities form when a developer or a prominent resident organizes residents for an incorporation vote and then to provide community services – both political goals. Interest groups form when an entrepreneur organizes members to accomplish some other political goal. Cities maintain their economic growth and development to maintain their residents and fund their programs. Interest groups maintain the members and money to lobby for the programs they desire.

There are already good histories of American urban growth, though. The importance of interest group formation of local governments is that it explains the specific behaviors of local government cooperation, merger, annexation, and incorporation. If local governments are more akin to interest groups than to other government types then it is not surprising that these governments are as uncooperative, independent, factious, and resource conscious as other politically active interest groups. These local government behaviors in turn influence how local governments interact with

each other, with states and federal governments, and with the other organizations in a metropolitan or other urban area.

The rest of the chapter is in four sections. In part 2, I briefly trace the history of urban growth in the post-World War II era and discuss some of the theories explaining the development of this growth and how they relate to interest group theories. In part 3, I explain interest group theory in more detail and specifically the entrepreneurial theory of interest groups. Part 4 returns to the local government literature on local and metropolitan governance, and part 5 concludes with the ways in which interest group theory improves the study of local government and urban governance.

2.2 The Growth of Cities

From the founding until the end of the 19th century, Americans spread across the continent founding cities as they went. A large rural population, long stretches of railway, and practical limits on how densely populated cities could be in the days before sanitation and steel guaranteed a lot of local governments. As the country became wealthier and more industrial, workers moved from rural areas into the industrial cities. Cities grew in size at the expense of towns and smaller communities and a period of consolidation began. Those who could afford it continued to live outside central cities (Teaford, 1997, 9), but even the wealthy –if they worked –lived inside the cities because they had to walk to work (Fischel, 2004).

The development of transportation technology and the growing wealth of workers changed that. First electric trains and then automobiles allowed the wealthy workers to commute from suburbs into the central city. While urban consolidation continued –it was

a political goal of Progressives at the time –it was joined by the growth of new suburbs. By 1952 (the first year of the Census of Government’s historic tables) there were 34 thousand sub-county general governments (municipal or township governments). In 2002, that number had grown to just under 36 thousand. More than 2,000 cities were offset by the loss of around 500 townships.¹ Urban consolidation has been swamped by this growth. At the end of the 20th century and into the 21st century, there were more cities (Pelissero, 2003, 10), those cities were smaller (Oliver, 2003, 312), and those cities were becoming more specialized both in their industry and their residents (316).

The growth of cities coincided with improvements in transportation. First roads, then heavy steam railroads, then light rail trolley cars, and finally modern highways and interstates allowed more of the population to spread far away from the sources of income and the markets for goods (Fischel, 2004). Easy and cheap transportation meant it was possible to go to work without living near work. The limit was the individual’s tolerance for traveling. Telecommunications was once thought to make even the commute obsolete. The residents of the United States did not, however, spread evenly across the continent. While smaller cities grew in size and number, most of the population continued to live in one of 366 metropolitan areas –slightly more than 75% in the 2010 Census.² The population moved not into uniform spread across the nation, but to the suburbs and the Sunbelt. Each will be addressed in turn.

¹ The real growth in governments is special districts, which increase from 12 thousand to 35 thousand over the period. However, there is massive consolidation in school districts which drop from 67 thousand to 13 thousand.

² According to the 2010 Census, 233,069,827 of 308,745,538 people lived in one of the Census Bureau designated Metropolitan statistical areas.

2.2.2 The Suburb and the Sunbelt

The suburb is a somewhat nebulous concept, defined mainly by its presence in a metropolitan area but not being the central city (Oliver, 2003, 312). They are not required to be small and some in fact may rival central cities in population (Lewis, 2004, 115). They may be diverse in population or homogenous. They may be densely settled or sprawling. There is not even agreement that suburbs have a defining political characteristic. But while the suburb is hard to define, it not being the central city may be an interesting starting point.

Residents flee central cities for many reasons –job opportunities, desire to live with people of the same race or politics or religion (Oliver, 2004, 316), cheap land, and space for development (Garreau, 1991) –but perhaps most important is to get away from the central city’s rules. Getting beyond the borders of the central city is the first step, but the important follow up is incorporation (Teaford, 1997, 44). Without forming a city, the urban exiles risk being annexed back into the jurisdiction they escaped (Bolton and Roland, 1997). A Nassau County, New York lawyer –arguing for incorporation of a new suburb in the 1940s –made no secret of his reasoning. Having just left New York City, he had no desire to be returned (Teaford, 1997, 17).

The suburban founders wanted to have their own governments which would be responsive to their own particular preferences. They wanted to control their own zoning (Fischel, 2001, 2004), their own budgets (Bolton and Roland, 1997), and create a new political culture and climate. They wanted the politics and lifestyle of the village, rather than the urban canyons. They wanted their governments to be less centralized –partly as a hedge against the corruption of the central city’s city hall and partly because they were

trying to get away from meddling government (Teaford, 1997). And it seems to have worked. Suburban residents are more active and engaged in local politics and retain their willingness to pay for their small governments and their privileges (Oliver, 2001; though the empirical results are mixed – Clingermayer and Feiock, 2001, 41, showed no result; Kelleher and Lowery, 2008 showed the opposite results, and Oliver and Shang, 2007 indicate the democratization may be the result of an active elite). They will even put up with corruption so long as the corruption is small and broadly works for the residents of the cities (Adrian, 1961).

During the initial growth of the suburbs, the central city was still important. Suburbs lacked the economic activity and population of the central cities, so their residents still had to go downtown to work and shop. Eventually, however, entrepreneurs recognized the opportunity of all those residents out in the suburbs (Garreau, 1991). Those entrepreneurs brought commerce and industry to the suburbs. Residents of the suburbs could then travel from suburb to suburb for whatever they need. A resident may work in one suburb, shop in another, and sleep in a third (Oliver, 2004). They no longer need to travel to the central city and may even begin to think of themselves as competitors with their old anchor (Lewis, 2004).

The flight to the Sunbelt is a similar story. The Sunbelt –sometimes restricted just to the South –is notable for its growth, and also for its climate. The summers are hot and the winters are warm. The latter is the important factor because heating was expensive but available –but while air conditioning lacked wide-spread application until after World War II. With post-war economic growth and air conditioning –followed by Civil Rights and political reforms, the South in particular and the Sunbelt (the South plus the South

West) generally became viable places to develop (Glaeser and Tobio, 2008). At the same time, transportation became much cheaper such that goods could be moved to the Sunbelt despite its lack of rivers and rails. The value of these new amenities is displayed in stories of South West residents who have no tan because they stay in the air conditioning, the introduction of international brands and industry to the backwards (and backwoods) South, and the influx of residents from all parts of the country.

The simple story of expanding opportunity is not complete, though. The Sunbelt was also home to a more developer friendly entrepreneurial local government system (Elkin, 1987). The growth in the Sunbelt came about because the Sunbelt made it easier to develop land and had a less onerous permitting process (Glaeser and Tobio, 2008). Like the flight to the suburbs, the rise of the Sunbelt is partly a story of getting away from unwanted government controls facilitated by easy transportation.

While this story explains the decline of large cities and the rise of the small-to-midsize city, it does not explain why the population continued to move from farm to city. If cities are exercises in meddling, why would anyone move there? The answer is amenity, agglomeration, and economies of scale.

2.2.3 Amenity, Agglomeration, and Economies of Scale

Amenities are simply desirable features of a location. Access to a coast might be an amenity in California or Maine while climate is the main attraction for North Carolina and Texas. Amenity need not be a natural feature, though. Housing availability is an amenity (Glaeser and Tobio, 2008) and so are various public services (Glaeser and Gottlieb, 2006) –such as public health. Prior to modern sanitation, public health in cities

was so poor that it was an active disincentive for industry and residents. Similarly, pollution from industry can make cities less attractive (Fischel, 2001, 162). On the other hand, police protection and safety are attractive, and so are the market goods available in a central marketplace. To the extent that cities are located in desirable places, cities will attract more of the population. In fact, being a city itself can be an amenity: agglomeration.

People like to interact with each other, they like to shop where their consumption can be satisfied, and they like to live in a community (Glaeser and Gottlieb, 2006, also Aristotle 4th Century BC, *Politics* Book I, 1253; 2005, 3). This requires a minimum number of people to support the cultural, political, and economic life (Dahl, 1967) that attracts new residents. Like the amenities of the suburbs or the Sunbelt, agglomeration attracts entrepreneurs (Glaeser, Rosenthal, and Strange, 2009) who produce wealth and in turn attract more residents. In short, the presence of many people close together can improve the economy and social life. If they choose to submit to a single jurisdiction, they can also save money by using economies of scale.

For public goods the addition of new users does not increase the cost of production, but it does reduce the price of service. Police protection costs the same whether it protects 100 residents or 1,000 residents,³ but in the latter case each resident pays only a tenth what the former does. In a single city; residents not only get the amenities of city life and the agglomeration of industry and culture, but also get the bulk discount (Zimmerman, 1972). Here, however, is where the wonders of single cities begins to falter. Not everything scales.

³ Hypothetically, at least. In the real world more residents may require more officers, making the analysis more like a club good –but the basic logic is the same.

2.2.4 Self Determination, Diversity, and Diseconomies of Scale

The benefits of city life do, in many ways, counteract the costs –but city life is not costless. None of the suburbanites in Nassau County complained about the amenities of New York City, or the benefits of agglomeration, or even the economies of scale. As suburbanites they could commute and get most of those benefits anyway. They objected to being governed without their input.

In the largest cities it was difficult for individuals to influence their governments. Even through civic organizations it was difficult (Dahl, 1958) to self-govern. Dahl thought that the sheer number of interests which had to be accommodated would make self-government impossible once the population exceeded 200,000 residents (1967). Eventually, someone had to be disappointed. Unable to get what they wanted from their current jurisdictions, those disappointed residents went to form their own governments. While it might have been true that these new jurisdictions were more factious, homogenous, and self-centered (Wood, 1958); and that the many small governments were expensive and inefficient (Zimmerman, 1972); and that only a single jurisdiction could address externalities (Harrigan, 1993, Sparrow and Brown, 1986); the new suburbanites did not care. They “cynically, expect[ed] government to be relatively inefficient...come professional or reformer...and...want[ed] a voice in local government” (Adrian, 1961). Having gained self determination, they were loath to surrender it –through annexation, consolidation, or immigration –back to the central city.

The new cities also had little in common with each other. They were highly specialized by race, class (Oliver, 2004, 316), religion, language (Auffhammer and

Carson, 2009)⁴, industry (Duranton and Puga, 2000), or several reasons at once (Epple and Platt, 1989). They even specialized in economic activity with bedroom communities bordering commercial cities bordering industrial cities and so on (Garreau, 1993). With all the different resident populations there were many different preferences for government type and government services. No one government could provide –at the same price –the match of services each smaller city could give to its own residents. Whatever the progressive civic reformers promised, the economies of scale never materialized (Lewis, 2004, 100; Toma, 1978).

Diverse populations were the key obstacle to cheap government. Economies of scale could be found so long as every resident had the same preferences. Police protection for 100 was the same as protection for 1000 so long as everyone wanted the same type of police protection. With a diverse population this was no longer true. If the protection was the same, some residents would be unsatisfied with it. Perhaps one set of residents wanted more drug suppression while another wanted more investigation. Whatever the reason, when forced to share a government neither group could get everything it wanted. Either the service had to be inferior or it had to become more expensive to provide both services. The economies of scale gave way to congestion and diseconomies of scale (Alesina, Baqir, and Hoxby, 2004, Alesina and Spalaore, 1997).

2.2.5 Organization

Recognizing the competing desires of residents –for amenities and agglomeration, but also for self-determination –the reformers and progressives looked for ways to make

⁴ This is a European study, but it does not seem unreasonable to think religion and language might matter in the United States as well.

central cities a better deal for urban residents. Amenity and agglomeration already moved people from the farms to the cities; all that was needed was to get people to agree to consolidation with other diverse people. The task was made more difficult by easy transportation, which let urbanites enjoy the benefits of all neighboring jurisdictions without having to live in all of them.

The main difficulty, however, was the organization of cities. Once incorporated elected officials and residents alike resisted (Lyons, 1977) interference in their new organization. Mayors and leading officials could mobilize their residents to oppose mergers; they could raise money to campaign against changes in the law which would disadvantage the smaller cities. The cities could make use of voting rules to stay independent (Toma, 1978). Furthermore, so long as there were adequate resources to pay for the more expensive smaller cities, residents were willing to pay the price.

What does this say about the growth and persistence of cities, then? First, cities exist to offer benefits to their residents through amenity and agglomeration. Second, that organizing and maintaining a city requires resources. Third, organization matters – without incorporation the new cities would be swallowed up again. Fourth, leadership and entrepreneurship matters – cities require voting campaigns and developers to form. This is enough to make the non-controversial statement that cities are a type of organization. However, the desire for self-determination means that cities also exist to provide effective political activism for their residents – and this moves them into the category of interest group organization. This is the subject of the next section.

2.3 Interest Group Organizations and the City

As Madison wrote, faction –which is here associated with interest group organization –is the common and unavoidable result of allowing individuals to influence their own government. One person can write a letter or make a meeting with a government official –or even run for office –to move his or her government to different policies. Many people can work together to accomplish the same goal more effectively. Organization can make any task easier –many hands make short work, after all. The distinguishing factor of political interest groups is that they try to produce a public good or persuade a government to provide a public good which benefits all group members. Ideally, they do so without expending so many resources the group members come out worse than when they started (Becker, 1983). This provides three important components to understanding interest group behavior: a body of members, a public good, and efficient organization.

2.3.2 Group Identification

In the formation of the city many different personal characteristics were identified under which new cities organized. The Protestants want one their own city and the Catholics want their own city. But it is not all Protestants everywhere demanding a Protestant city. In another place the entire population could be Protestant but the working class people want their own city and the white collar families want their own city. The common definition of “group” as a collection of individuals with a common characteristic (Huddy, 2003; Leighley and Vedlitz, 1999) is not quite adequate to describe the growth of cities in anything except the trivial meaning that all groups are collections of elements.

For cities, the common characteristic varies such that, while every group shares a common feature, not every collection of individuals with a common feature is a group.

Among those individuals with common features who form a group, there is a sense of identity not held by those with the same features –but not part of the group (Gibson and Gauws, 2000). The New Yorker who says “you mess with one of us; you mess with all of us,”⁵ has a very different conception of the characteristic “lives in New York City” than the student from Ohio who merely “lives in New York City” for four years of college before leaving. For the group member, the characteristic is an important facet of his or her being and maintaining that facet motivates behavior (Vedlitz, Alston, and Pinkele 1980). So important is it to be a good New Yorker, the members will alter their behavior to conform to the norms and expectations of the other New Yorkers.⁶ Those who lack the identity –who do not desire to be like the group, nor gain the approval of the group members –do not join and do not conform.

However, while social identification does provide a better theory, it still summarizes to “groups are collections of individuals who share a common feature, and who consider that feature and the connection to it important.” Nothing explains what makes the given feature important. For that, individuals need a sense of awareness (Conover, 1988). Members must be made aware that they have something in common with others and that they should think of that feature as important. The importance might come from an outside actor –another group has already formed and plans to do something which will harm all people with a specific feature (Giles and Buckner, 1993, Becker, 1983). Importance might also be more proactive –that all who desire a specific good

⁵ From the movie *Spiderman* when the Green Goblin threatens fellow New Yorker Peter Parker.

⁶ Including pelting super-villains with rocks from the Brooklyn Bridge.

should work together to gain it. In either case, what makes the common feature important is that it is a signifier for a common interest (Olson, 1965).

2.3.3 Free-rides and the Logic of Collective Action

If the common interest is in a private good, then organization is like the process of building a firm. Individuals work and in return they get a private good. If the common interest is a public good, however, there is a different problem. The nature of a public good means it cannot be limited only to those who work for it (Olson, 1965, 7).

Work is hard and has a cost. Coldly rational people recognize that if they avoid work they also avoid the cost, but they still reap the reward, and therefore they shirk. The collective action problem arises when everyone behaves rationally and everyone shirks. No one pays any cost, but no one gains any benefit either. The purpose of organization in this framework is to make contributing time or money rational. Legal obligations are one approach (Samuelson, 1954). Those who do not contribute (through taxes or mandatory service) are threatened with punishment. This option is not generally available to non-governmental organizations, but it does indicate a solution: make contributing pay more than not contributing even if the public good is still provided, and this is what organization provides.

The type of organization needed varies, though. For small groups (“privileged groups”), working for the good already pays more than shirking (Olson, 49). Each individual member’s contribution is indispensable in producing the common good. One person’s failure to contribute dooms all. The organization requires coordination, but it can act like a market. Each person acting in his or her self-interest cooperates. In an

extreme case, one member may benefit so much from the public good that he or she is willing to provide it alone.

As the number of people involved grows or the size of the project expands the cost of cooperating rises against the benefits. Members of the intermediate group can shirk without paying a steep price. The benefit may not be as great if one member shirks, but there is still a benefit which the shirker gains without paying (Olson, 1965, 50). Organization at this level is about monitoring cooperation and creating systems where each member's contribution is important and obvious (Ostrom, 1990, 189; Hojnacki, 2008).

Most group organizations are too large even for the intermediate group. In the privileged and intermediate groups individuals cooperate because it is in their immediate interest to do so –because they benefit directly from their work or because they do not wish to fail their colleagues. As the size grows beyond the point where monitoring is possible, potential group members can shirk, never join or work with the group ever, and not be found out (Olson, 50). Getting members of this latent group to cooperate requires providing a selective benefit –a benefit in addition to the public good which is provided only to those who contribute and can be identified as having contributed. The benefit might be pecuniary –wages for working in an office or a coffee mug for sending a contribution –but they can also be social or psychic (Vedlitz et al, 1980; Olson, 1965). Getting to work on an important project with similar and like-minded people may be reward enough to mobilize members of the latent group. Raising awareness (Conover, 1988) educates individuals about their possible interests and then recruits the newly recognized latent group members into active behavior.

Organization, though, is not *sui generis*. Someone has to do the organizing in such a way that the costs in effort, monitoring, and selective benefits do not outweigh the public benefit the organization exists to produce. That organizer is the entrepreneur (Salisbury, 1969).

2.3.4 The Entrepreneur and the Organization

Without an organizer, the latent group never contemplates a selective benefit and never shifts to active cooperation. Providing a selective benefit has costs, though. Eventually the payout from activism may cover those costs, but the activism has to come first and so the selective benefit has to come first. The organizer has to first accumulate the capital necessary to provide a selective benefit and then risk it to organize a work-force to action in the hopes that activism will eventually have a return greater than the initial cost. Organizers are entrepreneurs.

Being an organizational entrepreneur is not just about risking the money. Public entrepreneurs need to have the skills to attract members and guide the activism that eventually pays off just as a private sector entrepreneur must have skills in hiring and production. To be successful the entrepreneur has to assemble the necessary capital and then apply it to produce a profit. And, like the private sector entrepreneur, if the organizer cannot produce a profit, they will go do something else.

Capital is the key. Without capital there is no selective benefit. Without capital there is no activism. Without capital there is no public good. Without capital there is no organized group. Whether the group is latent or privileged, whether it is activism heavy or just a social gathering, capital is required to organize the group. Understandably,

given the dependence, entrepreneurs are preoccupied with their resources –money and members. The entrepreneur needs a stream of resources to replenish the spent capital, fund the continuing operations of the group, and pay the entrepreneur.

Each entrepreneur has to sell the organization as providing the best bargain. Each member has to provide a certain amount of work and gets a benefit in return. Other entrepreneurs are watching this take place, and if there are great profits to be made, those entrepreneurs will want to organize too. To do so they have to organize new members by offering a lower price or a different benefit. How they offer the better bargain is similar to the private sector: offer a product more like what the consumer wants and reduce the transaction costs to produce it (Moe, 1984; Coase, 1937).

Better organization reduces the cost of advocacy (Becker, 1983) and provides a better bargain. Entrepreneurs organize those threatened by the existing groups (Giles and Evans, 1986, Giles and Buckner, 1993 and 1996, Voss 1996a and b, Lowery et al, 2005) or just opposed to changes from the *status quo* (Miller and Krosnic, 2004) thus organizing the previously unorganized. The only limit is the available capital (Lowery, Gray, and Monogan, 2008, Gray and Lowery, 1996).

Entrepreneurs can also lure away the already organized with the offer of a better benefit. Within an organization, members will have slightly different views. In a resource poor field, individuals will work together even though they have differing views because it is the only way to make activism work. Small groups are too expensive to break up into smaller groups. When the members have resources or diverse views, though, entrepreneurs can offer a new group which better meets the desires of some members, and pull them out of the existing groups.

Every entrepreneur can see this dynamic at work. Diverse populations have preferences for public goods. For the right bargain, individuals will join an organization to provide those goods. So long as there are resources (and therefore profits) to be made, entrepreneurs will compete to organize those individuals. If there is competition, there is the risk that one entrepreneur can lose customers to another. Heading off that risk is high in the entrepreneur's mind. To that end, group organizers focus on controlling resources (sometimes to the exclusion of everything else, O'Toole and Meier, 2004, Selznik, 1943, Selznick, 1948) and protecting themselves from take-over (Gray and Lowery, 1996; Walker, 1983). These facets explain the behavior of groups.

2.3.5 Group Behavior and Cooperation

The easiest way to avoid being driven out of business is to avoid competition, and interest groups are good at that (Holyoke, 2009). This usually means staying small or homogenous (Browne, 1990, Gray and Lowery, 1996). The other method is to control a very valuable resource (Moe, 1984, Lynn, et al, 2000, O'Toole and Meier, 2004). In the first case, small and homogenous groups do not offer the ability for a division. Smaller groups would not provide a better service and would be more expensive when duplicating what the existing group does. Niche groups also have an easier time monopolizing resources as there are fewer resources to hold. Monopolizing a valuable resource can support a large group because it denies the resource to all other groups. For example, the City of Denver's monopoly on the water supply allowed it to force other city governments to join the Denver government because without water, the other city organizations could not survive (Ellison, 1998). It was not possible for Denver to be

divided because one city would still control all the water and immediately force everyone back into the single jurisdiction (Holden, 1964).

Much like the city and the many types of common interest, niche groups have many characteristics. A niche group can specialize on a specific type of material benefit or resource (Hildreth, 1994, Lowery and Gray, 2004, Salisbury, 1969), or it may specialize in a closer ideological match for members (Jenkins-Smith, St. Clair and Woods, 1991; Browne, 1990; Gray and Lowery, 1996). Other groups specialize in providing activism skills to their members (Leighley, 1996). The unifying factor is that all these specializations avoid competition. Groups will even give up growth opportunities because traveling beyond the niche invites division and competition which might destroy the group (Holyoke, 2009).

Groups do not scoop up every resource available –that risks competition. Instead, they look for the resources necessary to support the organization's existence. The entrepreneur's first interest is a return on the investment, not affecting policy. Where resources are plentiful or organization cheap there are many organizations because early organizers are hesitant to expand outside their original niches. When one entrepreneur's organization fails, the resources are freed for another entrepreneur. And, while generally trying to avoid competition, entrepreneurs will compete with and eliminate their competitors if doing so will have a higher return on their investments in the organization.

Part of what makes an organization cheap or expensive is the product, too (Salisbury, 1969). Expressive groups are easy to form because their capital requirements are small. Not much is required to allow a collection of individuals to express themselves. Expressive organizations are easy to build, and as a result easy to dissolve.

All that holds members to an expressive group is their desire to express themselves. If that desire wanes, members leave. If the different members have different expressive desires, it is not costly for another entrepreneur to steal members. On the other side, purely material organizations are expensive. Producing a good that all members enjoy requires work, influence, connections, and more. Passing a new program into law is difficult. Material organizations are, consequently, much harder to form. They require more resources. If successful, however, they are equally hard to dissolve. The members are the recipients of a stream of tangible benefits. Competing with that benefit requires capital –capital not already being used to provide the benefit –and stealing over members is a large risk for all involved. It could hobble both organizations, leaving everyone worse off than before.

Eventually, the entrepreneur has to make good on the promise to produce the public good the group formed around. If that good was group expression, then members have to be able to express themselves. If it was a government program, that program needs to develop. If the entrepreneur cannot do this, another entrepreneur can steal members away with the promise of providing everything members already have and success (Gray and Lowery, 1996, Hojnacki, 1997). Some organizations are able to do this alone. Expressive organizations do not require support to express themselves and large organizations have the necessary valuable resources. For the rest of the organizations, though, affecting policy requires cooperation.

Cooperation is risky. The entrepreneur could lose the organization to the alliance. Group members could have their preferences sacrificed to maintain an alliance which no longer advances the group's goals. Group members value their independence –it is why

they created the smaller groups in the first place (Salisbury, 1969; Holyoke, 2009).

Ultimately, affecting policy means wrangling the necessary resources, and if those resources are spread across multiple groups then cooperation is necessary. Entrepreneurs analyze the situation and seek advice from other alliance members (Lowery and Gray, 2004; Hojnacki, 2007) and then make a decision.

Group members and entrepreneurs want some minimum amount of goal overlap – ideological or practical. Group members would prefer nothing happen than join an alliance which ultimately makes them worse off (Sabatier and Weible, 2007).⁷ Once the common interest is established, though, it is just a matter of organization (Ostrom, 1990). Different groups have different resources: formal legal authority, public opinion, information, mobilized membership, money, or skillful leadership (203). A new organization of the constituent organizations is formed. Appropriate selective benefits are offered and contributions are made as visible as possible (Hojnacki, 1998). Because the alliance requires all the resources to function, the alliance can act like an intermediate or privileged group.

The larger group combines the necessary resources to influence policy and, if successful, gains the public benefits the constituent groups organized for. This is not a foregone conclusion. Nothing requires that the resource combination which influences policy all lie with groups who share goals. Nothing requires that groups who share goals get along with each other. And while an alliance may have the necessary resources to affect one policy, nothing requires that the constituent groups agree on future policies.

⁷ This section is reliant on the Advocacy Coalition Framework (ACF) for much of its content. The ACF relies on a psychological framework about individual beliefs which is somewhat beyond the scope of this discussion. For the discussion of cooperation and alliances it is enough that group members and organizers recognize the benefit of cooperation in advancing all their goals –whether they agree on deep core beliefs or not.

The alliance can fragment later just as large groups are pulled apart by entrepreneurs. Even if the resources line up with a single alliance and the alliance stays together, nothing prevents a shock to the policy field shifting resources to other groups and alliances.

Shocks can break up alliances and even dissolve the groups which make them up. The members, however, remain. They still have their preferences and they have their knowledge from previous organization. Organizations come and go, but the members remain; ready to be organized by the next entrepreneur (Zafonte, and Sabatier, 2004). Alliances come and go, but there is always the possibility of new cooperative ventures.

2.3.6 The City and the Group

While the literature on city formation and growth is distinct from the literature on interest group organization, the two literatures share common features. The city is, after all, an organization which provides public goods to residents in return for cooperation – taxes. Anyone living within the jurisdiction benefits from the services regardless of the taxes they pay. It is unsurprising that many of the characteristics of the interest group would also appear in the city.

The population moved to cities because the city offered benefits only available to residents that made the higher taxes worth paying (Glaeser and Tobio, 2008). When the benefits declined or the taxes rose, new entrepreneurs offered organizations with a better deal (Teaford, 1997). Developers expect a profit from their organization –they are businessmen and women (Duaney, Plater-Zybeck, and Speck, 2000). Resources and cost affect the size of jurisdictions (Alesina and Spaloare, 1997) and diverse preferences are associated with multiple jurisdictions (Alesina, et al, 2004). Cities even form around

common identities (Oliver, 2004, 316, Auffhammer and Carson, 2009, and Duranton and Puga, 2000).

There are differences, too. Cities do not have to elicit cooperation because they can tax. Cities can also self-produce the public goods their residents desire. The mere act of being a city can attract resources –from legal authority to grant access (Stein, 1981). Cities are also much harder to dissolve.⁸ These differences can be incorporated into existing group theories, though. There is no analytic difference between an interest group which self-produces and one which lobbies another government to produce goods. The practical difference is not much either. Cities lobby through direct contact with state officials and municipal leagues, and non-government interest groups often produce benefits –like the selective ones –for their members. The legal powers of cities are just another type of resource to contemplate, including the legal staying power to avoid being dissolved when the other resources fail.

It is not surprising, then, that other scholars of local government and metropolitan organization have thought about how interest groups influence government. The next section addresses how interest groups have been applied to urban government. The final section will elaborate on how urban government and interest group literature can complement each other.

⁸ Hard, but not impossible. Part of the inspiration of this dissertation was the disincorporation of Lone Oak, KY. It was a small city in McCracken County and when the economy turned bad, there was not enough tax money to operate the city –so it dissolved. The residents of Lone Oak still maintain their identity, though, and resist being roped in with either “McCracken County” or the City of Paducah. Their lack of organization is because of the cost, not the lack of interest.

2.4 Interest Groups and Theories of Urban and Metropolitan Government

Interest groups are usually thought of as influencing their governments. The argument of the preceding two sections is that local governments, rather than being influenced by interest groups, frequently are interest groups. This view is not common when combining interest group and urban governance. Rather, local governments are often thought of as similar to other governments and which interest groups try to influence. This is still the case even when discussing metropolitan governance. This is effective for analysis, but is not the complete story.

2.4.2 Governing the City

Interest group research has some of its roots in the study of local government. Early pluralist theory came out of studies of New Haven, Connecticut by Robert Dahl. Previously, the organization of cities was modeled as a collection of residents governed by a ruling elite⁹, but the identities of the ruling elite were ephemeral (Dahl, 1958). For each policy issue, there were some people who were interested and others who were not. The interested parties dominated discussions of their particular policy, but they could not rule the entire city.

Instead, there were many coalitions of interests which pushed against each other to govern the city. No one group could expand across the others because, in the process of doing so, it would lose the cohesion necessary to run any policy (Dahl, 1978).

Governing the city required multiple interest groups to work together to coordinate all their policy interests. As the city increased in size, the heterogeneity of preferences also increased, and there was more conflict among groups. Dahl estimated that above 200,000

⁹ Dahl names Floyd Hunter as his foil on this point.

residents there were simply too many groups and preferences to define a coherent platform, and city government would become sclerotic and ineffective. Below 50,000 it would be too expensive (1967). These observations sparked interest group theories, group alliances, and the advocacy coalition discussed above.

What Dahl wanted was a democratic city where every voice mattered. Too large and too diverse cities where each voice mattered could not find compromise solutions which satisfied everyone, so such cities would necessarily have to break up. But there was also an alternative: privilege some voices. Like interest groups, cities need capital to function and this capital comes from banks. Bankers like economic development because it makes their financial transactions more valuable. For cities to get capital, they have to support economic development (Elkin, 1978). Any group which does not support economic development will find it difficult to influence city hall simply because city hall knows that without economic development, the banks and other businessmen will not support city hall and the city would go under.

City governments also rely on voters to stay in power, and the most involved voters are landowners (Fischel, 2004; Molotch, 1975). Landowners have sunk much of their money into illiquid assets and wish to see their assets increase in value, and so again cities pursue economic development. Anti-growth interests have a hard time influencing policy because the pro-growth interests have a louder voice and a stronger financial interest in setting policy. Along with growth, the landowners want to prevent waste and depreciation –leading to support for strict zoning (Peterson, 1981).

Both of these theories rely on the institutions of the city forcing a specific outcome. The need for resources (money or votes) forces cities to support one interest or

another. When the population reaches a point where the city can no longer find consensus policies, it must obey specific interest groups to survive. What the minority parties do is not discussed, but given city realities, it is unlikely that founding a new city would solve their problems. The new city would still rely on bankers and landowners to function. Does every city really act like this, though? These studies are not comprehensive, and there is anecdotal evidence of cities forgoing economic development and ignoring land owners.¹⁰

A more generalized theory is that, like advocacy coalitions, there are coalitions of interests which control the necessary resources to govern a city (Stone, 1989). If a city needs money and votes to operate, then any coalition of groups that provides both can run the city and lock out other potential governing coalitions. In the case of Atlanta, downtown businessmen provided the capital and African Americans provided the votes. It is notable, though, that the mayor was secondary to the policy setting. When an African American was elected mayor and tried to go against the businessmen, those businessmen stopped cooperating and the city government ground to a halt. At the same time, the threat of African Americans voting against bond issues and downtown business proposals was enough to get businessmen to pay attention to the leaders of the African American communities. If policy veers too far to one constituent group, it risks provoking a secession (Hogan-Esch, 2001)

¹⁰ One such story was told to me by a retired Vice Mayor of Kansas City, Missouri –Bill Skaggs in July of 2011. In the old days, the Northland suburbs, Liberty and North Kansas City, had the opportunity to annex the territory where growth was happening. Neither did. Eventually, Kansas City enveloped both cities. The suburbs’ lack of action was mystifying to Mr. Skaggs. A while later he mentioned that some landowners wanted to annex even further north to the City of Kearney –about 11 miles. Kansas City was reluctant to do so because of the cost of the expansion and the risk that the investment would not pay off.

The generalized Advocacy Coalition Framework has been applied to cities, too. Small groups can form alliances to control policy in a city, or control a city entirely. Control of a city can then be a resource in affecting national policy (Davies, 2005, Greenway and Grantham, 2000). Control of important resources can lead to control over a metropolitan area (Ellison, 1998). National groups may decide to dominate local government because it is easier to monopolize resources at the local level than nationally (Greenway, 1998).

The coalitional theories are more interest-group-like. Individuals with similar preferences form interest groups to influence city policy. The groups have to control a valuable resource to have a chance at influencing the city, even if the resource is only votes. Unable to influence policy alone, the groups have to seek out allies. Once these alliances form, they are durable in governing the city until the resource allocation is shifted. The other parts of organization are present as well. Stone in particular mentions the importance of selective benefits in keeping the regime together and how much of local government is run on psychic and social benefits. The governing regime likes to work together.

Whether coalitional, institutional, or pluralist, all these interest group theories of the city conceive of the city government as something affected by interest groups. This helps explain local government behavior, but the story is incomplete. Unlike state and national policy, new local governments are easy to create. The losers in a city can always create a new city which better serves their interests. Why do they not? In the pluralist model, every organized interest wins some and loses some and so it makes sense that the losers on a certain policy would stay in the city. However, for this to work cities must

remain fairly small or become dysfunctional. In the institutional models, cities must follow their growth imperatives, so any new city would act just like the original cities. In this case, however, there should not be the growth in the number of cities because new cities cannot act differently than old ones.¹¹ Coalitional theories simply do not consider what happens if the losers decide to leave. Returning to the interest group literature can connect the story of local government behavior to local government growth. However, connecting the two first requires discussing how cities interact with each other.

2.4.3 Metropolitan Governance

Interest group theories may have roots in and continue to influence the study of local government, but it is almost entirely absent from the discourse on how multiple cities interact with each other. Perhaps this is because few if any think of local governments as representing groups.

The first question regarding multiple cities is whether there should be multiple cities. The economics were against it (Toma, 1978). Public goods can be provided more cheaply when there are more residents. However, the single monopolistic government has little reason to perform (Ostrom, Tiebout, and Warren, 1961). The economic benefit of consolidation is lost in the waste. When there are multiple cities, they must compete for residents (Tiebout, 1956) and therefore cities have an incentive to better match services and tax levels to the preferences of potential residents. If problems cross jurisdictional boundaries, there is plenty of incentive for local governments to cooperate

¹¹ This objection is not quite appropriate for the homevoter hypothesis of William Fischel. Many small cities make sense in his framework because each one can specialize in a different type mechanism of improving home values. Partly for this reason, I think the homevoter hypothesis is closer to correct.

in solving them without invoking consolidation. This is the closest the discourse usually gets to discussing organization.

Instead, scholars investigated whether the economic evidence supported the competition hypothesis. Residents were ignorant about tax prices and service bundles (Lowery and Lyons, 1989, and similarly as Lyons and Lowery, 1989), but that may not matter so long as movers are informed (Teske, Schneider, Mintrom, and Best, 1993). Even if movers are ignorant, businesses are informed, and mobile capital will seek out the best allocation across a metropolitan area. That alone could signal, either through wages or through property values, which cities offered the best deal for services and taxes (Ogawa and Wildasin, 2009; Fischel 2001; and this would be consistent with Glaeser and Gottlieb, 2006).

If competing cities could match individuals to better mixes of services and taxes, there were still other potential problems. The metropolitan area was a community, and governmental fragmentation broke that community apart (Wood, 1958). While the smaller local governments might be better fits on material measures, they were civically impoverished (Lowery, DeHoog, and Lyons, 1992). The communities were insular, isolated, and divided –often on racial, social, economic, or multiple lines (Nechyba and Walsh, 2004; Epple and Platt, 1998). Such cities were unlikely to work for the common good across jurisdictional boundaries.

Insularity is possible, and even happens in some cities, but not all (Agranoff and McGuire, 2003, 43). The relationships of different cities vary widely. Some cities are insular and self-sufficient. Other cities are protective and independent, but willing to cooperate if the reason was compelling enough. Still others are so resource constrained

that their very survival depends on cooperating with other governments. Cities make their decisions to cooperate based on factors about the city, the other government (federal, state, or local) and the nature of the agreement.

Intergovernmental cooperation in general is common. Cities rely on intergovernmental funds and grants from other governments (Stein, 1981), and even organize themselves specifically to attract grants (Lowry and Potosky, 2004). Cooperation across local governments can be used to lobby for grants (Bickers and Stein, 2004) or to consolidate voters behind certain elected officials (Bickers and Stein, 1994). When not attracting money, local officials keep in touch through personal and staff contacts (Thurmaier and Wood, 2002), coordinate their common policies (Post, 2004), and keep an eye on potential cross-border problems (Sharpe, 2004). Given time, repeated interactions, trust, and social capital local officials may even formalize their relationships into intergovernmental organizations (Feiock, Tao, and Johnson, 2004; Feiock, 2004, 2009) or contemplate consolidations.

Actual consolidation, however, is rare for general governments (Toma, 1978). Partly this is because the usual voting rules make consolidation difficult. Two jurisdictions both have to pass referenda agreeing to the consolidation. Even annexations can be difficult if the state gives unincorporated areas rights, or makes incorporation easy (Clingermayer and Feiock, 2001, 93). In either situation, voters have reasons to vote against consolidation. First, any consolidation means that the voters are losing some of their influence over their jurisdictions (Lyons, 1977) by adding new voters with different preferences. Second, the smaller jurisdiction is risking being perpetually outvoted by the larger jurisdiction (Dur and Staal, 2008). Far better to maintain independent governments

and retain the right to say no (Fischel, 2001). Third, current local officials –political entrepreneurs –risk losing their positions in the new jurisdiction (Lyons, 1977).¹²

When cities make decisions about how to interact with each other –to stand apart, cooperate, or consolidate –cities appear to consider the costs and benefits, but this is still not the entire story. Fragmentation may provide greater benefits but it is not clear that residents are actually calculating net benefits when choosing a new jurisdiction. Coordination between cities is largely an elite function, not a popular one, and when voters are asked to permanently join two jurisdictions they oppose it. Even the elite, while willing to cooperate, are hesitant about consolidation. Certain costs are too high for the expected benefits.

There is also a gap between how cities are governed internally and their relationships with other cities. How do the interest groups that influence city behavior affect inter-city cooperation? They disappear when discussing inter-city contact and the new unit of analysis is just the city. These gaps can be filled –and tie the individual to the group, the group to the city, and the city to the metropolitan area –by reintroducing interest group theory to local government.

2.5 Synthesizing Local Government and Interest Groups

Metropolitan governments are supposed to benefit all their residents, yet residents are reluctant to join metro-wide agreements. They are more likely to cooperate, but many cities, in fact, avoid each other. Cities do not always attempt to grow in size, and yet

¹² There are ways around these problems. Lyons –covering a successful merger –addresses several. Single member districts, special governments, and grandfathering of existing arrangements allowed the constituent communities to accept merger. It helped that the state threatened them with annexation otherwise. More generally, changing the voting rules to a higher standard assures minorities of any type that they will not be exploited as described by Buchanan and Tullock (1964).

general governments have grown in number. What can explain this? It is entrepreneurial interest group behavior. The following subsections combine the literatures on interest groups and urban governance to better explain both behaviors.

2.5.2 Merger and Cooperation

When interest group organizers contemplate mergers, they assess the costs and benefits on their members, but also for the entrepreneur. Organizing the group costs entrepreneurs resources and they want to make sure they earn a profit. Joining another group means losing control over resources, and could ultimately cause the entrepreneur to lose. Members too desire assurances that the new group is not going to take their resources and use them on different projects. The interests of entrepreneur and members align to generally resist mergers. However, interest groups are willing to cooperate. Does this not also risk resources?

Cities are likewise unwilling to merge. Officials are reluctant to give up their offices and residents are unlikely to give up their autonomy. They prefer to maintain their independence and instead cooperate at arm's length –but the nature of their cooperation is erratic. Some cities are insular, others require cooperation to exist.

The unifying factor is that both groups and cities are concerned about losing control of their resources. Local official's reluctance to give up power might be a different concern, but as the economic benefits of consolidation rarely materialize, it seems unlikely staff would be fired. Elected officials may be holding onto office, but they are political organizers by nature. Elected officials would have plenty of opportunities to keep, and even enlarge, their offices in a merged government. Doing so

requires them to take a risk –and if they lose then their investment in running for their current office is lost. It is the same concern of the entrepreneur that any merged group would cut the entrepreneur out of the ultimate payoff. Residents and members are both worried that the merged group would no longer serve them as well.

Cooperation does not have this problem. Explicitly in the local government literature, the great benefit of cooperation is that cities can refuse to cooperate. Everyone has to agree on the resources devoted to cooperation. No one risks losing control of resources. Either city can also cut its losses if the agreement turns sour. This should be imported into the interest group literature explicitly, rather than implicitly.

But why is local government cooperation so varied? For the same reason it is varied among interest groups. Interest groups are goal oriented in their cooperation. Groups seek out partners with similar interests and different resources so that they can, together, accomplish a common goal. Cities, however, have many of the same resources, particularly as regards their formal powers. Cities are also intended to be self-sufficient. There is less reason for cities to cooperate than there are for interest groups. The problem has to affect multiple cities, the cities have to be unable to address it themselves, and the cities must have some resources to trade.

2.5.3 Conflict Avoidance and Fragmentation

Interest groups avoid conflict because it is expensive and risky. Entrepreneurs who wish to make a profit do not want to waste money establishing dominance. Expanding the group beyond a niche invites conflict, and even if successful risks future

conflict as the new members conflict over their different preferences. It is far safer for entrepreneurs and current group members to stay in their specialty.

Cities are compelled to grow, and yet instead of larger cities there has been an increase in the number of cities. Cities limit their annexation and suburbs specialize. The reason is unknown. Growth machines, financial requirements, and property values explain some of it, but not all.

Again, resources are the key. Interest groups that burn through their resources fall apart. Cities too have to cultivate their resources. Engaging another city in an annexation fight is as expensive as competing with another interest group for residents. Even if the city wins, it can suffer the victor's curse –where the city or group pays more for winning than the victory returns in benefits. As groups expand, they risk schisms within their members. Cities are the same. As the city expands, residents become more diverse, and the city risks schisms that make providing satisfactory services more difficult and increases the risk of expensive secessions. It is cheaper and safer for residents –and the entrepreneurs who wish to make a profit –to be conservative in managing the growth of the city. Do not annex too far out; do not encourage too many different types of residents; and do not give up resources easily. Growth compulsions are moderated by fears that growing too far too fast would wreck the balance sheet of the city.

This, of course, leaves plenty of land and unclaimed resources for other entrepreneurs who will likewise be conflict averse. The newly developed cities will be smaller, grow more slowly, and be wary of attracting diverse populations. The growth of urban areas would depend on how quickly the population grows –and would manifest not in each jurisdiction getting larger, but in the creation of jurisdictions. With all that extra

land, secession becomes unnecessary. When enough people with different preferences are available, a developer need only offer a new jurisdiction in an unclaimed part of the county. They do not even have to incorporate.

There are, however, circumstances where competition is expected. First, when some organizations lack the resources to support themselves and cooperation is not possible for whatever reason; then conflict and competition are expected. When one interest group organization or one city collapses, others will consider the use of the newly freed resources. Existing entrepreneurs may decide that the expansion is still too dangerous, and the resources lay idle. Entrepreneurs who need resources, though, will scramble to get what benefit they can. Where resources are few, conflict is more likely.

2.5.4 Amenities, Agglomeration, and Size

Most groups are small, niche organizations, but there are larger ones. Likewise, most cities are small, but there are large ones. For cities, the largest cities –the ones so large that Dahl thought they could not be governed –can be explained by amenities and agglomeration. Large cities have some benefit so great that residents are willing to put up with less-than-ideal services to get it. That benefit may be the agglomeration of millions of individuals.

This same explanation would apply to large interest groups as well. There is a benefit to being part of a large group like the NRA or the Sierra Club rather than their local activist equivalents. While the smaller groups may be more like what an individual wants, their ability to influence policy is restricted. Large groups can use their size to be influential. Their size alone acts as a valuable resource, along with their name and

reputation. Part of why the NRA, Sierra Club, and New York City can be so large is because associating with those names is itself valuable to individuals.

Agglomeration is another area where conflict is to be expected. The benefits of being the largest and most prominent group do not spread across multiple large groups. Those trying to be the biggest group or the central city must compete with the other big groups and other contenders for central city (this would explain why “supersuburbs” are more growth-oriented than their smaller cousins, Lewis, 2004). Those who do not aspire to agglomeration as their amenity have less cause to compete.

2.5.5 Considering Cities as Interest Groups

Conceiving of cities as interest groups allows for the preceding synthesis to make more sense of the observed behavior of cities. It explains why some cities compete, others cooperate, and others isolate by identifying population diversity and city resources as the important components of city organization. It explains how developers and elected officials try to organize new and existing cities. It explains why the number of cities has grown and why the cities have gotten smaller. There are, however, some potential objections to address.

- 1.) Why did cities start getting smaller recently? If local governments are interest groups, then the problems with diverse populations should have been present earlier and led to small governments from the start.

What changed was drop in the price of transportation. This made agglomeration less valuable because the same benefits could be had without having to live in a small area. In the 1800s, the wealthy could afford to live in small villages and towns outside the major cities, but no one else could. With easy transportation, the relative benefits of large organizations and small organizations changed. This made the organization of smaller towns possible, and so entrepreneurs organized them.

2.) Cities are still governments, though. They are not interest groups.

Small cities act like interest groups in all but name. The residents know each other, they choose leaders and hire workers to provide public goods, and they even lobby state and federal governments. The only difference between a small city and a large interest group is that small city can provide its own public goods –and even this difference can be overstated. Interest groups can provide public goods and services too. Homeowners associations already provide some services to their members. A church provides its own public goods (association, collective worship and ritual). Both of these types of interest groups can ultimately become cities. They would remain interest groups when they did so.

3.) What about large cities?

It is true that large cities are unlikely to have a single well-defined interest group at their core –such as a church or homeowners association turned city. Stone’s study of

Atlanta argued for many interests within a single city working together, and Dahl argued for hundreds of interests which had to at least stay out of each other's way. In both of these arguments, the feuding interest groups had to organize a government. This required entrepreneurship on the part of someone –a mayor, a businessman, or a clique of prominent citizens –to make work and this coalition of interest groups is itself an interest group. Ostrom argued that this was a way to take large latent groups and make them work together. Large cities organize this way, and when they fail to, they become dysfunctional as Dahl predicted.

2.5.6 Conclusion

The city as an interest group synthesizes two literatures in a way which improves both. Interest group organization explains the unusual (for a government) behavior of cities and agglomeration and city-to-city cooperation can explain the behavior of interest groups. The theoretical implications of this are discussed in Chapter 3.

Chapter 3

An Interest Group Theory of Urban Fragmentation

3.1 Introduction

Whether fragmentation is beneficial to local government has been a perennial concern of urban scholars. Is it better to have few large cities which can use economies of scale to serve their residents cheaply (Wood, 1958), or is it better to have many small cities which better serve their specific residents at a higher cost (Ostrom, Warren, and Tiebout, 1961)? In the post-war period, local general governments proliferated and the smaller cities grew in number and size (Pellisero, 2003, 10; Oliver, 2003, 312) which would indicate a wide-spread preference for the many, small, expensive governments which better served their specific residents. But why would the population prefer small and expensive –and why, despite this preference are there still large jurisdictions such as New York City’s eight million people?

The key to understanding the preference for small and fragmented lies in understanding city formation as a type of political organization by the residents. As discussed in the previous chapter, other types of political organization are constrained by the need to 1.) pay the entrepreneur who organizes, 2.) provide benefits to members, 3.) out-compete competitors for members, 4.) and secure the resources necessary to do 1 through 3. In the case of most types of political group, this is very difficult to do for large numbers of members. This is also true of cities, but cities have important differences from other types of political organization. First, cities can produce the public good the organization desires rather than having to lobby another government. Second, cities have legal rights and authorities such as taxation and police power which are

impressive resources. Third, because cities control the land within their borders, cities can turn agglomeration effects to their advantage to grow in size.

The chapter continues in four parts. In part 2, I develop the basic theory of the city as entrepreneurial interest group. In part 3, I consider the effect of amenity, agglomeration and mobility on city proliferation. In part 4, I use the theory to produce hypotheses about the proliferation of cities. Finally I summarize and conclude in part 5.

3.2 The Entrepreneurial Interest Group City

When Elkin (1987) spoke of the entrepreneurial city, what he had in mind was a city which sponsored growth as a means to attract and sustain entrepreneurs. The city political economy relied on a coalition of businessmen who funded the city, directed the growth, and made sure that other interests did not block the thriving business community. The method, however, also deserves the label of entrepreneurial. Local business leaders and bankers created a system where local officials were compelled by economic and political necessity to do things which benefited business. Businessmen and bankers controlled capital and financial talent necessary to the operation of the city. They also had the organizational ability to support candidates for office in at-large elections. In effect, the business leaders used their acumen in organizing companies which would do what they wanted to organize the city. Bluntly, business, concerned that other types of interest group government would be bad, formed its own city.

Businesses are a type of organization –and a very effective one. Business entrepreneurs excel at getting other people to willingly work for them; for pay, mutual gain, a return on investment, or something else. These same skills could be turned to

organizing interest groups. Businessmen are not the only people who possess such skills, though. Every organization requires an entrepreneur to provide incentives, coordinate activity, and secure the desired end.

In a private endeavor, the businessman must secure capital to produce the end product. The private entrepreneur needs money to pay wages and buy equipment. The private entrepreneur then uses that capital to produce a good that is sold, providing the return for the entrepreneur. When successful, the workers are paid, the entrepreneur is paid, and the consumers of the good are happier.

The public entrepreneur is much the same, but the nature of the end product is slightly different. The public entrepreneur is producing a public good, or convincing a government agency to produce the public good. Those who work on the product are also beneficiaries of the product (analogous to workers who buy their company's product). Because of this, the workers might need to be paid less or to be paid less overtly. The reduction in wage costs does not, however, wipe out all capital requirements. The public entrepreneur still has to buy the equipment, contacts, and keep the phones working. When successful, the workers gain their private benefits, the entrepreneur is paid a private return, and everyone benefits from the public good. The difference in the end product does change the organization's structure.

Where a private entrepreneur can offer a wage individualized to each worker, the public entrepreneur is offering a low or non-existent wage and public benefit. The public benefit cannot be individualized. Where the private firm can have workers who care only

for the paycheck and nothing for the end product, the public organization needs workers who care about the end product.¹³

Whether public or private, all organizations must control their capital. Without money, there are no wages or equipment and there is no production. Without capital, workers seek out other firms that can pay better. Without capital, the organizer has no return on investment and must find another source of income. Without capital, the organizer cannot pay workers or provide other selective benefits. What capital must be controlled depends on the type of production and the type of organization. Whichever factors produce the end good are the factors the entrepreneur must dominate. (Those factors can differ between different types of organizations, too.) If those factors – resources –are not controlled, then the entrepreneur cannot produce the end good, cannot sell it to consumers or workers, gains no return, and eventually will burn through existing capital. Capital-less, the organization dissolves. Access to the necessary resources is critical to the entrepreneur's success.

In addition to controlling capital, entrepreneurs also want to reduce their costs. The less they must spend to produce the good –private or public –the higher their return. Low costs also allow entrepreneurs to sell their product at a lower price; attracting consumers, which in the case of the public good are also potential workers. Capital burned on something other than production is wasted –drives up prices, drives away consumers, and cuts into the entrepreneur's return. For this reason, entrepreneurs avoid competition for resources. The capital used to secure the resource and fend off another organization is capital which does not make the end product, but still must be paid off.

¹³ It is possible for an interest group to be staffed by people who care only for the paycheck, but they must be paid more –since the success of the group is of no benefit to them. This increases the costs of the group, and makes it susceptible to another entrepreneur offering a cheaper benefit.

This raises the price of the product without improving its quality. Fewer consumers buy (or volunteer to work) and the entrepreneur loses money.

How many resources are required depends on the type of organization.

Expressive organizations do not need much to provide the benefit –group expression –to members. Expressive organizations can be small and resource poor. Organizations intended to produce some good or service need more resources and more workers.

Expressive organizations are cheap to create and hard to sustain –it is easy to create a competitor. Material organizations –the ones that produce goods or services –are harder to undercut because they already control the necessary resources and benefit their members well (Salisbury, 1969).

For the public entrepreneur, the need to secure resources and avoid conflict drives organization towards niches. Niche interest groups are small, have limited resource needs, and are unlikely to come into conflict for their resources. The entrepreneur does not need to provide the same level of private benefit as a business because the members have similar preferences and the public good provides the bulk of the incentive to work. This same preference homogeneity also makes the organization value its autonomy. Anything that alters the public good –including cooperation and compromise with another group –reduces the benefit to the members. Giving up autonomy only happens when the result is a more valuable public or private benefit. As the niche interest grows in size, preferences necessarily become more diverse (no two people think exactly alike).

These more diverse members need a better personal incentive to work –this raises the price of the organization. The organization must secure more resources to provide that incentive. This might raise the level of needed contribution –reducing everyone’s net

benefit –or risk confrontation with another group –which also raises the price of the public good. The larger and larger the group gets, the more the price goes up.

Eventually, another entrepreneur will notice the high cost and poor benefit for some members of the existing groups and offer to form a new group which would be a better fit, lack the excessive incentives needed to get the larger group to function, and require fewer resources and risk. The large group splits, and the new organization is again a niche. How quickly this happens depends on the nature of the group, for example whether it is expressive or material.

While the necessity of resource consolidation drives interest groups towards niches, there are large groups. These groups may exist because of economies of scale. If there are general preferences which many people share, then membership in a large group is a cheap way to meet the widely shared preference. There is a balancing act in the size of interest groups. Too small and they lack the resources necessary to survive. Too large and they risk being undercut. Too large and too small, however, depend on the resource environment. If resources are few, then economies of scale matter a lot.

More commonly, interest groups stay small and form alliances to combine resources rather than outright merging. Coalitions do not require paying more incentives to the new workers, preserve autonomy for all group members, and increase the quantity of the public good. Coalition members agree to the compromises because they believe that they will, on net, get more from cooperation than they will working alone.¹⁴ Groups will also engage in competition if necessary to continue operating –such as if there is

¹⁴ As an example, two groups may lack, individually, the ability to gain the public goods they desire. Working alone they have homogenous preferences and low costs, but ultimately no benefit. If they merge, they lose some autonomy and the cost goes up (either because the benefit is no longer as perfect, or because more incentives are needed, or both). If they stay separate, but cooperate, the cost may still go up, but they gain the benefit and maintain autonomy on all other matters.

only one source of money and two groups both need it to survive. In both cooperation and competition, there is a balance between the threat to autonomy (the threat to less perfect service) and the benefit from cooperation (which may be greater than otherwise, but still not ideal).

3.2.2 The City as a Group

All of this is also true of city organization. Cities exist to produce goods and services or provide public goods acquired from state or national governments. Cities have entrepreneurs who organize the new city. In order to produce public goods, cities need resources to produce the goods and services and to motivate residents to live within their borders and pay taxes. That resource can be an expression of community or a set of goods and services. The resources have to be controlled by the city or the city risks dissolution. As these constraints push interest groups to niches, they also push cities to smaller, more homogeneous organizations.

The smaller, more homogeneous city occupies a niche. Niche does not mean, though, that the city cannot still be a full service organization. As a niche interest group serves a narrow and specific policy goal for members, a city provides a specific balance of public goods and policies. Cities in metropolitan areas have become even more specialized to the point where they do not have to provide everything a resident requires (such as culture or employment). Their residents can get them from other cities. Even where cities are full service, the combination of goods and services the city provides is a

tailored to the population, lest the residents organize a new city or move to another jurisdiction.

The public goods cities produce are legion. The most obvious are actual city services like police and fire protection. Cities also produce an environment through laws. Zoning, nuisance, public health, and economic development are all policies that cities can use to benefit their members. They can also provide private services and goods. The policy is uniform across the jurisdiction, though. The benefit to the residents depends on how much each resident values each policy or service. If preferences fit a narrow band, then the public goods alone are enough to encourage individuals to live within the city jurisdiction and pay equivalent taxes.¹⁵

When preferences diverge, the average value of living in the specific city drops. Taxes have not changed, but the value of the goods is higher for some and lower for others depending on their preferences. At this point, an entrepreneur could consider trying to organize a new city. The entrepreneur might be a land developer. The developer produces a new community and offers to sell it to new residents. The homeowner's association charter, or the new incorporation charter would spell out the benefits of moving and allow potential movers to decide if a new jurisdiction would be a better fit. An entrepreneur may be a local politician who runs for office promising to provide more efficiency, or shift current policies and services to a better fit for more residents. The entrepreneur may also be a potential future mayor or prominent citizen who organizes the secession of the new town he or she intends to lead. Whoever the organizer, the deal offered must be better overall, not simply a better fit.

¹⁵ For simplicity I am going to assume, unless stated otherwise, that cities try to be efficient.

As interest groups can benefit from economies of scale, so can jurisdictions. Smaller jurisdictions need resources to provide a better fit without costing so much that the net benefit is better in the larger jurisdiction. As with interest groups, this is easier to do when resources are plentiful or costs are low.

The new jurisdiction must provide incentives for people to move there. The incentive may be better fitting public goods at a better price, or it may be some private or club-like good. Whatever the incentive, the jurisdiction needs resources to produce it. Local government powers are one resource. If potential residents want a better fitting zoning code, the new jurisdiction must be granted zoning power, for example. Tax revenue is another resource, along with intergovernmental revenue sources. Another way to provide cheaper services is to contract them out to other governments, thus gaining the benefit of scale without giving up autonomy on other matter of more importance to residents. Residents of two cities may be happier to share garbage collectors than police or zoning codes.

Cooperation is not a costless choice. Even for something as simple as garbage collection, residents may have to give up some of their autonomy. Perhaps the cooperative agreement can only work if pick-up is done curbside even if one jurisdiction prefers back-door service. Cities would only cooperate when the loss in autonomy is offset by better results than would be gotten without cooperating. This might be through economies of scale, as in the garbage collection example, or because cooperation is necessary to achieve the goal. Two jurisdictions may each have resources necessary to lobby the state government, and so must cooperate to lobby, for example. To the extent that cities are either expressions of community borders or self-sufficient, cities will not

cooperate with other jurisdictions –just as expressive and self-sufficient interest groups do not cooperate with other groups. Rather, cooperation must come from shared goals, similar situations, but different resources.¹⁶ Wealthy cities are unlikely to cooperate at all if their resources allow them to stay completely autonomous. Even if two cities want to cooperate, are willing to give up autonomy and share resources, the costs of coordination and transportation can still wipe out the benefit of cooperation.

Finally, the city must control the necessary resources. If a city is dependent on another jurisdiction for revenue (such as through a contract) or a service and the other jurisdiction ceases to provide it, then the city will be unable to provide benefits to its residents. In the best case, the city cuts back on services enough to stay solvent, but the reduced benefit to residents causes residents to move to other jurisdictions. In the worst case, the city goes bankrupt. In the story of Denver water politics, told by Ellison (1998), the City of Denver was able to squelch the growing fragmented suburbs by refusing to sell water to other cities (Holden, 1964 also applies).

The constraints on cities are the same as on interest groups. Entrepreneurs are competitive people, but they want a return on their investment more than crushing their opposition. They want to avoid costly competition with other cities. They want preference homogeneity from their residents so that public goods can satisfy members. Their residents want to maintain their autonomy so that the public goods remain a good fit. And entrepreneurs want to avoid growing too big and too diverse because the new population will make the city more expensive and risk the current organizers being

¹⁶ Economies of scale can be thought of two ways. In the first way, a bordering jurisdiction automatically controls a different resource –another population of residents to share the costs –or in the second, it can be thought of as an exception to the general rule. Differences in resources are required for most forms of cross-boundary cooperation, but if the cooperation is about jointly-running an operation to save money, then only similar goals and similar situations are required.

undercut by another developer, politician, or future mayor. Organization size is a balance of resources and fit. If the incentives are the same from interest group to city, then the behavior should be the same as well.

3.2.3 Three Objections and their Responses

There are three objections to conceiving cities as interest groups. First, cities can tax. Second, cities are functionally immortal and interest groups turn over frequently. Third, there are very large cities which do not seem to be very niche-like.

The objection to city tax power is that an interest group cannot compel cooperation, but a government can. Interest group organizers have to focus on providing a good fit because if the organization is not advancing the member's goals, they will stop contributing and the organization fold. People in cities can be compelled to support the organization through taxation. This is true, but overlooks that residents can avoid city taxes by leaving. Cooperation in the city is not signified by paying taxes, but by living in the city. As paying dues is the cooperative action in an interest group, buying a house and paying its property tax is the cooperative action in a city. Cities can no more compel residence than an interest group can compel membership. Where the city has an advantage is that its public goods can be –to some extent –limited to tax payers because the services do not extend beyond the jurisdiction borders.¹⁷

The second objection is that once founded, cities rarely go away. One of the distinguishing characteristics of niche interest groups is that they crop up quickly and disappear quickly, as the farmer's organizations Salisbury used did (1969). This is also

¹⁷ This is not entirely true –but is fair for a generalization. Police protection, for example, may only go up to the border of the jurisdiction, but presumably the suppression effect extends somewhat further.

true. What it misses is that the longevity of an interest group depends on its resources. Interest groups which last a long time have steady streams of resources independent of its members and do not depend on the shifting preferences of their members. So long as those streams of resources continue, the organization endures (though Selznik, 1948 points out that this is not guaranteed to be beneficial to members). Members stay with the group, even if it goes its own way, because there are not adequate resources to create a competitor and the benefits of the existing organization are better than nothing.¹⁸ The interest groups which are short-lived depend on members' desire to be with similar people. It is the expressive groups, in other words, which have the short life cycle. The groups dedicated to providing material benefits are longer lasting. While cities can be expressive, most cities have to provide some material benefit (the state and county will not pave city roads without being paid, for example). Further, city resources are much stronger and their political authority more powerful than other interest groups. The city has undisputed control over its tax base. So long as the city can convince residents to join it and pay those taxes, it has no risk of losing control of a resource. Cities which lose their tax base, lose residents, or depend on intergovernmental revenue to survive are as much at risk as any other interest group.

The final objection is that there are large cities which have diverse populations. Stone's study of Atlanta (1989) highlighted the biracial, business-leaders and black-leaders coalition which governed Atlanta. New York City has eight million residents. These are not niche cities. There are also large interest groups, though. One reason for

¹⁸ Jenkins-Smith et al, 1991 argues that expressive groups are even more constrained. Material groups can maintain members who want the material benefit so long as at least some benefit flows –and will except some variation from their preferences. Purposive or expressive groups were much more restricted.

large cities might be their ability to provide economies of scale. The other reason suggested by the metropolitan fragmentation literature is that a large city can control a valuable resource: amenity or agglomeration.

3.3 Amenity, Agglomeration, and Mobility

3.3.1 Amenity

Business leaders and African American leaders in Atlanta did not cooperate in governing a single jurisdiction because they liked each other. They each valued the existence of a single, large, powerful city (though for different reasons) and so were willing to share a jurisdiction in order to get that benefit. The amenity of a large and influential city cannot be subdivided. Nor can many other types of amenities. Coasts do not split infinitely many ways; neither do financial districts, historic downtowns, rivers, or nice climates. As long as cities have undisputed control of the land within their boundaries, individuals wishing to enjoy a city's amenities are going to have to live within those borders and pay taxes.

An amenity is a type of selective benefit. As a selective benefit encourages members of an interest group to contribute more to the group, a city amenity encourages residents to pay more to live in the city. Payment can be in the form of higher property prices, lower wages, or less-than-perfect government, and frequently a combination of all three. This makes city amenities a resource which entrepreneurs can use to attract new residents and to compensate for differences between members.

The reason interest groups aim for niches is that entrepreneurs do not want to lose members to other groups. However, if an entrepreneur has a valuable selective benefit,

the risk of losing members to other groups is reduced. Without access to the great resource, other entrepreneurs will find it difficult or impossible to offer a better net bargain to potential members.

In the past, the great “amenity” of cities was jobs. People flocked to the urban centers looking for work. The other amenities –culture, ports, et cetera –were secondary. That is no longer true because transportation is cheaper. Individuals can commute and so there is no need to live in a single large jurisdiction simply because the jobs are there. Cities have had to shift to other types of amenities to attract residents –ones which cannot be gotten via commute. Gentle climate, residential parks, good schools, safe streets, and friendly communities are all ways to attract members open to many or most cities. Economies of scale can make some of these benefits easier to acquire –the need to pay for safe streets is one reason there are cities in the first place –but small cities can still have good schools and nice parks. For that matter, nice parks can be enjoyed by neighboring cities. The benefit of living in a city with nice parks rather than the cheaper city next to it is entirely in the hassle and cost of travel. In order to get a large city, the amenity has to be unusually and equally large.

One such amenity is the ability to redistribute.¹⁹ Jurisdictions which have an immobile source of capital can tax the capital (or tax the high returns through progressive taxation) and use the proceeds to subsidize other residents, either through direct payments or lower taxes. New York City has the port and the financial district that the city can tax to pay for services that would otherwise be paid by individual property taxes. This is not unique to New York. The same basic logic applies to a city which allows a locally undesirable land use –such as a landfill or a factory –into its borders. In the first case, the

¹⁹ This section is inspired by, but not drawn from, Peterson’s *City Limits* (1981).

cost of gaining access to the financial system's wealth is sharing a jurisdiction with 8 million people. In second, the cost is putting up with pollution from a factory. In both cases, the subsidy makes living in the city cheaper –allowing more members with disparate tastes to decide it is a “good deal.”

This would explain why previous theories focused on economic development as the driver of city growth. Economic development means wealth creation, which means sources of non-personal tax revenue. If a city is going to grow in population, it will have a more diverse population. That more diverse population will need a lower price to put up with the less-than-perfect ideal services, and economic development makes that possible.

Redistribution also explains why, despite having different preferences, the poor chase the rich. Both poor and rich would be better served by governments catering to their specific needs, but the poor cannot afford good government. They either need to live with other wealth creators, or with wealthy people in order to pay for the government they need. The poor will accept less-perfect government in order to have it be affordable.²⁰ The wealthy can try to price out the poor, but this requires expending resources. More expensive houses, restrictive zoning codes, or limited governments such that residents have to provide many of their own services can all make jurisdictions unwelcome to the poor. They are also costs which residents balance against the cost of redistribution and sharing a jurisdiction with the poor.

Beyond redistribution, most amenities are only partially restricted to residents. Culture, museums, beaches, coasts, and parks are all available to commuters. However,

²⁰ Either wealth creators or wealthy people will work. A factory owner probably has different interests than the poor, but the poor will put up with the factory owner's needs if the result is that the factory owner's production funds their government.

the cost of the commute does matter. Living a long distance inland means the net amenity benefit of the coast is much less, even if it is possible to visit the coast every day.

3.3.2 Agglomeration

As the last section argued, one benefit of a large population is that it can specialize. Adam Smith's pin factory story applies to general government services too. However, while agglomeration is an amenity which can attract many residents and make government cheap, it does not ensure single jurisdictions.

The benefit of agglomeration is that many people working together are more productive. Nothing stops people from working together if they live in separate jurisdictions, or just long distances from each other, though. The benefit to the single large jurisdiction is that many people can work together cheaply. The transportation costs are low, meeting and networking is easy, and everyone travels in the same environment. It is an amenity, like a financial sector, but just like the financial sector, people will be willing to spend more to commute for it if in turn they get to live in a jurisdiction that fits them better. By analogy, just because a coal mine is more productive if everyone lives on sight does not mean that coal miners would not be willing to pay to go home at the end of the day.

This could be why the polycentric metropolis still has a central city. There is a place which has a valuable amenity. That amenity attracts people and so the central city now has two great draws: the amenity and the agglomeration. The central city can be large and less-perfect for the individual because of those two valuable resources.

However, there are still individuals who would prefer a smaller, more perfect organization and then commute to the central city.

3.3.3 Mobility

As the previous two sections have argued, mobility matters. The lower cost of transportation means that the amenities of nearby cities can be enjoyed without living in them. People can also choose to locate where there are certain amenities. Finally, mobility can change the make-up of an urban area.

The combination of amenity and agglomeration accounts for a single, large, central city. Those who want easy access to an amenity crowd into the jurisdiction which controls it. Over all, this leads to consolidation –more people in fewer jurisdictions. The jurisdictions which do not control the amenity have to compete on other grounds. Lacking the amenity, those jurisdictions have to fit their niches even better to attract residents. The balancing choice for individuals is between less-perfect government with easy access to the amenity or near-perfect fit with a commute. If the alternative is poor fit or high price, residents will choose the jurisdiction with the amenity.

Fortunately, if there are many neighboring areas, the cost of government can be reduced by specializing as described by Oliver (2004). Residents expect to get their jobs in one jurisdiction, their work in a second, their shopping in a third, their amenities in a fourth, and their home in a fifth. An individual government has to provide much less service –and as such can be cheaper –to its residents.

This suggests that fragmentation over-all is greater in metropolitan areas than in non-metropolitan areas. In a non-metropolitan area, where there are few cities and few

people, jurisdictions must provide all services and cannot specialize. If resources are plentiful, multiple full-service general governments can be supported, but without the large population of the metropolis, specialized governments cannot exist. Outside the metropolis, a small government providing the same benefits is more expensive, and so fragmentation outside the metropolis is lower.

For example, 600 people in a metropolis can form their own city to provide residential services –police and street sweeping –while relying on the rest of the metropolis to provide everything else. Police and street sweeping are cheaper than a full service government, but the 600 residents still get good fitting full service government across the metropolis. Some of the 600 residents will shop in the western neighbor, some in the eastern neighbor, and everyone is happy. The effect is that each resident creates personalized government –they only share a jurisdiction when it comes to sweeping and police. If the 600 residents were part of a single, larger jurisdiction outside the metropolis and did the same thing, the benefit would be less. They would get better fit only for sweeping and police. All other fit remains unchanged because they all have to use the same larger jurisdiction. Where in the metropolis, one resident visited parks in the eastern neighbor and another in the western neighbor, outside the metropolis the parks are all provided by the same city. The benefit of creating the newer, cheaper government is less. If they want the same fit they get in the metropolis, the new city must provide more services, such as the variety of parks –and this makes it more expensive. All else equal, there will be less fragmentation outside the metropolis.²¹

²¹ A non-exclusive alternate explanation is that, in the metro area –or any area for that matter –where services can be got from another jurisdiction due to state laws such as the Lakewood System, it is cheaper to create expressive cities. The material benefits come from another jurisdiction –the new city exists merely to express its residents’ preferences.

People can also choose to locate where there are amenities. The poor chasing the rich has already been mentioned, and is a good example. Amenities can attract a diverse population, and as a result a very amenable place can have a diverse population at a given time. In a single instance, a single jurisdiction may be big and diverse because many different people moved there for the particular amenity. Over time, however, the diverse preferences of the residents can assert themselves again. The rich move to more expensive districts, for example.

Residents decide that their preferences are distinct enough from everyone else's that they are willing to pay a bit more for the amenity if they got better-fitting government in return. These residents are ripe for organization by an entrepreneur. It also results in sorting.

Sorting is implied in the creation of homogenous jurisdictions. Jurisdictional borders are typically contiguous, so in order for an entrepreneur form a new city, residents must be convinced to move within the proposed borders. If the population cannot sort, the creation of new jurisdictions becomes more difficult.

The amenity may prevent sorting or make it prohibitively expensive. If the amenity is geographically small –like Lower Manhattan –there is only limited territory in which to make new, neighboring jurisdictions. Moving further out requires more transportation, and so higher costs, that in turn make mobility more difficult and makes new jurisdictions more expensive for potential residents (they would have to carry the costs of the new jurisdiction and the commuting costs, rather than just the commuting costs alone). A costly alternative is to organize a secession vote, but due to the costs it may be a better balance just to put up with the less-perfect government even if sorting has

already happened.²² If the amenity is jurisdiction specific –redistribution from rich to poor, for example –sorting is pointless for creating new jurisdictions. Any new government would lose access to the amenity and its benefits.

Mobility and sorting by amenity also allow the possibility that the organization of an urban area could attract a certain type of resident. Fragmented metropolises might attract movers because the many jurisdictions make moving less risky. If the first jurisdiction does not work out, moving to a neighbor is relatively cheap. Consolidated metropolises might attract the poor because of their greater need for redistribution or liberals because of their connection to the Progressive movement’s consolidation programs. Fragmented jurisdictions might also attract a diverse population –making detecting causality impossible.

The latter concern is unlikely because of the implied need for sorting. If a fragmented metropolis is already homogeneous, then there is no jurisdiction within it to attract a diverse population. No jurisdiction is a good fit –so from the perspective of a new entrant the fragmented metropolis is just as attractive as a consolidated one. The fragmented jurisdictions can be worse because they do not take advantage of economies of scale. A potential resident might think that, in the future, there might be a jurisdiction which is a better fit, but this is also true of a consolidated metropolis. Entrepreneurs can create a new jurisdiction in either place. The fragmented metropolis can consolidate, and the consolidated metropolis can fragment. In all case, the diverse potential residents will have to move again to sort into the new jurisdiction –making neither more attractive than the other. The fragmented metropolis might be more attractive to a different resident

²² This seems to be the position of the residents of Staten Island, who periodically threaten secession, but never do it.

because it offers many options, but in this case the relevant point is that the resident is a mover, and it requires that the fragmented metropolis already be diverse in order to offer the many options.

The future of the metropolis will depend on what the population of the future looks like. Alesina, Baqir, and Hoxby (2004) showed, using the natural experiment of the Great Migration, that when the population of a metropolitan area becomes more diverse, consolidation slows. Population diversity is, however, unavoidable. Even if a homogenous metropolis continues to attract a homogenous population, the larger population will inevitably have slight differences of opinion and slight differences in preferences. The population may put up with these slight differences, but eventually there get to be enough people with similarly different preferences to justify a new jurisdiction. It may be less fragmented than a far more diverse metropolis, but it is still fragmented. The only thing which would prevent it would be a lack of available resources. People may have diverse preferences, but if there is no land to incorporate or state laws preventing secession, a new government cannot be formed.

3.4 Hypotheses

Treating cities as interest groups –and accounting for the oddities of city amenities and population mobility –has many implications for the organization and governance of urban areas. If cities are like interest groups, then their behavior is about controlling resources. Individual jurisdictions will try to avoid becoming more diverse because the resulting jurisdiction would provide less-ideal services at a higher price, and any economies of scale could be undercut by another jurisdiction offering a better fit.

Particularly valuable amenities attract residents who will balance less-ideal government in return for access to the amenity, leading to consolidation around the amenity.

However, outside the central jurisdiction, new cities will be smaller because –without the amenity –they have to provide better fitting government, and that is only possible if the population is homogeneous.

City behavior is also about maintaining autonomy. If the resources are available to support separate cities, people with diverse preferences would rather have a city with ideal services for them than economies of scale undercut by median-voter services.

Separate cities will cooperate, though, if it is necessary to achieve a shared goal.

In the following chapters I test two of these components. First, I test for fragmentation driven by diversity and resources. Because it is theoretically expected for there to be differences between metropolitan and non-metropolitan areas, those two types of area are analyzed separately. Second, I test for an inter-governmental network based on goal similarity and the maintenance of autonomy.

3.4.2 Fragmentation

Cities are driven to fragmentation by diverse preferences. Residents prefer better fitting government, will pay a higher price for it, and there are businessmen and politicians ready to provide it. However, fragmentation is limited by cost. More residents can be offered a lower price –but services have to become less ideal. If the price is already low, jurisdictions can be smaller and thus more fragmented. The cost limit increases with wealth as the wealthy can afford more expensive government. This leads to the following hypotheses:

- 1.) The number of jurisdictions increases with the diversity of the population.
- 2.) The number of jurisdictions increases with the wealth of the population.
- 3.) The number of jurisdictions decreases with the cost of government.

These are fairly direct economic predictions. As costs increase or income declines, consumption decreases. The niche theory of interest groups, however, also predicts that the forms of diversity affect fragmentation. New organizations are not solely about the difficulty of getting an agreement among those with diverse preferences. Individuals are willing to spend more to have ideal services. Among the preferences residents might be willing to pay more to satiate is a preference for larger jurisdictions. Progressives were a major force for consolidation and their descendants, modern Liberals, retain the preference. The poor may also prefer larger jurisdictions because of the need for economies of scale and redistribution²³ to fund the government services the poor require. Thus the following hypotheses:

- 4.) The number of jurisdictions decreases with higher levels of liberalism.
- 5.) The number of jurisdictions decreases with more poor residents.

Finally, jurisdictions must have access to resources –from money to political authority. Interest group theories point to more resources than just members and dues. While the tax base may be secure, cities which depend on contracting or intergovernmental revenue cannot exist if such money is not available. Likewise, if a city's authority and autonomy are limited, then the city is less able to provide ideal

²³ Either overt, or implicit through progressive taxation

services and is less attractive compared to larger jurisdictions with economies of scale.

Therefore:

- 6.) The number of jurisdictions increases with intergovernmental revenue (IGR).
- 7.) The number of jurisdictions decreases if IGR is limited to a few cities.
- 8.) The number of jurisdictions decreases with state restrictions on city powers.

These hypotheses are tested for metropolitan areas in chapter 4 and for non-metropolitan areas in chapter 5.

3.4.3 Cooperation

City cooperation, and even government-to-government contact is rare given the number of cities in the United States. This is expected if cities are like interest groups. City-to-city contact depends on both jurisdictions having a common goal.

- 1.) City-to-city contact is more likely if both cities share common issues.

The more policy areas that jointly affect both cities, the more likely it is that both cities will cooperate. In order for contact –information transfers, for example –to be helpful, both cities must also have similar situations. It is not helpful to hear about how another city solved its budget problems if that city's budget is entirely different.

Therefore:

- 2.) City-to-city contact is more likely if both cities share common characteristics.

One of the reasons to cooperate is that each city has different resources which, together, can achieve more than either city can along. For this reason, if cities have different resources available –one has population and another has wealthy residents, for example –then they can gain more through cooperation and are more likely to cooperate. If each city has the same resources available, then they can only cooperate by creating economies of scale. Economies of scale reduce autonomy, and so must be particularly good to overcome the costs in poorer fitting services.

3.) City-to-city contact is more likely if cities have different resources.

These hypotheses are tested in chapter 6 on a sample of Kentucky cities.

3.5 Summary and Conclusion

Scholars of metropolitan and urban government obsess over fragmentation and consolidation, which is better, and in what circumstances. However, there is a more pressing question: why has the public chosen fragmentation? The public has chosen fragmented government because smaller governments are better able to provide the exact services that residents desire. As the cost of transportation has declined, so has the cost of government in metropolitan areas. Governments are able to specialize in serving exactly what their residents want and leaving the rest to other jurisdictions. At the same time, the public has become wealthier and better able to afford smaller, more expensive, but better fitting governments. Continued fragmentation is expected.

The expected widespread intergovernmental cooperation did not materialize for the same reason governments fragmented. Residents wanted near-perfect fitting government, and cooperation would limit their ability to get it.

This is consistent with the behavior of interest groups, which is not surprising because cities are a type of interest group. Like interest groups, cities provide public and private benefits to their residents. Like interest groups, cities must control resources to provide benefits to their residents. Like interest groups, cities struggle to maintain their autonomy. Like interest groups, cities can be any combination of expressive or material. And like interest groups, cities try to serve a homogeneous niche to avoid losing residents and resources to competitors.

The next three chapters demonstrate aspects of this theory in data from the United States, and particularly from the Commonwealth of Kentucky.

Chapter 4

Causes of Fragmentation in Metropolitan Statistical Areas

4.1 Introduction

The benefit of envisioning local government organization as a type of interest group organization is providing a model which explains urban fragmentation. Local residents want to gain something from forming a city, just as local steel workers want to gain something from forming a union and local businesses want to gain something from forming a chamber of commerce, but none of these organizations grows indefinitely. For interest groups, fragmentation is explained by the desire for autonomy and the restrictions on resources. These drivers of fragmentation are common across different types of interest groups. Every interest group wants to control its own destiny and to that end it needs to secure resources. If resources are inadequate to the interest group's desires, it has to trade with another interest group to continue providing services –giving up some autonomy to maintain the agreement –or lose members to another organization which can better or more cheaply provide the same good or service. While the specifics may change from group to group or interest to interest, the rule remains. This and the next chapter apply this logic to local government in metropolitan and non-metropolitan areas to test the hypothesis that autonomy and resource restrictions drive urban fragmentation.

These two chapters are split because of a difference in the approach of those studying urban organization and those studying interest groups. The latter, while looking at specific interests or organizations, are universalist. Resource constraints apply to all organizations. The former, however, have overwhelmingly looked at metropolitan areas. Metropolitan areas might differ from non-metropolitan areas in any number of ways, but the theory proposed in Chapter 3 does not distinguish between the two types and obvious

differences –such as population, income or race –can be measured directly. The same process which produces fragmentation in metropolitan areas should produce fragmentation in non-metropolitan areas. The analysis in this chapter looks only at metropolitan areas so that it is consistent and comparable to other studies of local government organization that have done the same. The choice of metropolitan areas also allows for some new variables constructed during the aggregation. Most metropolitan areas –as measured by Census MSAs –are in a single county, but there are many which cover several counties within the same state. Much of the data for this study is county level, so these multi-county MSAs allow for variables measuring sorting across counties. This allows comparing multi-county MSAs where the population has sorted to multi-county MSAs where the population remains unsorted to single-county MSAs where the population cannot sort across county lines. Without finer data, this cannot be done on a county-level analysis.

As in chapter 3, the simplest form of the theory is that more resources and a more diverse population (which therefore has more diverse preferences) lead to more separate cities, and therefore more fragmentation. In this chapter, I analyze the effect of population sorting, available resources, and population diversity on the number of general local governments in a Census-defined Metropolitan Statistical Area for two periods - 1992 and 2002. Because the dependent variable is count data, and because after the initial analysis the data were revealed to be Poisson rather than negative-binomial, the analysis was done via cross-sectional Poisson regression. Other analyses which help illuminate the matter of local organization are also shown at the end.

The rest of this chapter is divided into 5 additional sections. Section 2 applies the broader theory of local government organization specifically to the MSA. Section 3 introduces the dataset and how it was constructed. Section 4 provides some summary statistics of MSAs and discusses what a “typical” MSA looks like within a state. In section 5, the results of the main analysis are explained along with some supplemental analyses for robustness and a variable only available in one year. The chapter ends with some MSA specific conclusions in section 6.

4.2 Applying the Theory to the MSA

Treating urban organization like interest group organization implies that individuals prefer to organize cities which are autonomous, controllable, and effective. All three of these goals require that the organizers marshal resources including people, money, and legal authority to achieve them. When a political entrepreneur begins organizing a city, he or she is selling a bundle of goods to potential residents with preferences for what a city needs to do and how well it must do it (effectiveness), the level of external control that will be laid on the organization (autonomy), and how closely the residents will be able to influence the organization’s behavior (control). If the entrepreneur is to make a profit, the bundle has to be offered at a price which both covers the cost of the organization (including return to the entrepreneur) and that new residents are willing to pay in the form of various taxes. Since cities are providing many public goods, the entrepreneur can lower the price of admission –and thus sell more –if he or she can attract more residents.

As a result, entrepreneurs are looking to optimize the proposed new city to maximize the return to the entrepreneur. The closer it hews to the preferences of individuals, the more they are willing to pay, but also the more expensive the proposal becomes because fixed costs of city organization are being borne by fewer people. However, making the proposed city too broad might not attract enough people (they are poached by smaller, more amenable cities) to make the city viable. Too targeted or too broad and residents will seek out cities which are cheaper or closer to individual preferences. In either case, the entrepreneur loses money.

The number of cities, and thus the amount of fragmentation, depends on how many entrepreneurs can produce functioning cities that are in the preference middle zone by combining a population and the local resources. This does not, however, imply that all cities need to be the same in population or money. If a city has popular amenities, residents will accept less-than-ideal preference matches to access those amenities cheaply (ie, they will share their government with people they do not necessarily agree with on all things). If a city is rich, it need not have a large population to survive even if it was organized around a very narrow set of preferences. A city with a large population can use economies of scale with poorer residents whose personal income is low enough that they prefer low cost to perfect preference match.²⁴

These factors make a metropolitan area an ideal place to test this theory of organization because in a metropolitan area there are many cities, many people, and many preferences which entrepreneurs can try to use. A metropolitan area can support a market for cities, as proposed by Tiebout (1956). The same type of market for

²⁴ This would be consistent with Epple and Zelenitz (1981) argument that competition did not result in perfect efficiency because the inelasticity of land allowed governments to capture rents. This theory substitutes entrepreneur for governments and comes to the same conclusion.

organization in political interest groups in the broader population would exist for city organizers in a metropolitan area.

The circumstances of city formation are then closest to the circumstances of interest group formation in the metropolitan area, so the theory should work best in a metropolitan area. All the raw materials of city organization are present so that the production function can be estimated without worrying that some necessary catalyst is missing (as might be the case in low-population, low wealth rural areas). The multi-county Metropolitan Statistical Areas also allow for limited testing of sorting.

4.2.2 A Model of Metropolitan Urban Fragmentation

The goal of this analysis is to model the production of local general governments formed in a metropolitan area based on the population and resources. The entrepreneur organizing the new city needs people with diverse interests to attract residents away from existing jurisdictions, and also needs resources to operate the new city.

Interests attach to the characteristics of the population. Race and ethnicity, religion, economic status, political ideology, and the different business communities all have different preferences for how a city should be run. People in general have slightly different preferences from each other and so the more people there are, the more varied their possible preferences are. Preferences might be based on beliefs about government's role, economic interests about business climate or tax rates, and selection of their neighbors. Whatever the preferences, the more diverse they are the more opportunities there are for entrepreneurs to tailor an organization the entrepreneur can sell to the residents. If the preferences are monolithic, entrepreneurs cannot offer better fitting

services to a subset of the residents. At best they can offer the same services more efficiently. As a result, entrepreneurs would produce fewer cities.

Resources come in many types. In this analysis they are money, population, and legal authority. In all cases, more should make cities easier to build, and so result in entrepreneurs founding more cities. Money and population are uncomplicated. Cities are expensive and have minimum fixed costs (which vary location to location). More money and more residents can support more cities of the same minimum size. Legal authority is not so simple. The power to do what residents want is an important component to being an effective organization, but states can place many restrictions on municipal powers. The ability to borrow money is useful, but limited if a state imposes a debt limit or balanced budget requirement. Allowing annexation is a useful power, but can be limited by various voting requirements or county government vetoes. A state grant of power, in other words, can be of limited use to some but very helpful to others.

Finally there are necessary controls and contextual characteristics. First, the population is not fixed. There are people moving in to and out of jurisdictions all the time and these choices are not random. Movers choose their new jurisdictions for reasons. People moving into a jurisdiction bring new preferences and new resources and can change the materials available for supporting existing cities and forming new ones. Movers may also consider the number of cities and the demographics of the existing population when they move.

Second, poor people might be attracted to rich or consolidated jurisdictions because both wealth and consolidation make welfare policies easier to implement. However, a large split between rich and poor is a form of diversity which could cause

fragmentation as entrepreneurs create new cities to insulate the rich from high taxes or which can more efficiently provide welfare policies to the poor without imposing those taxes on the rich. Poor people may also interact with movers. Poor movers could choose to move to consolidated cities, causing economic diversity, poverty, and movement to correlate and effect the results, even though neither poverty nor mobility are expected to directly influence the number of cities.

Third, while political diversity can lead to more fragmentation, the level of desired consolidation is also a political belief. Consolidation was a Progressive policy prescription initially and among the opponents of consolidation, both in politics and in scholarship, are modern conservatives. As a result, having a diverse population of liberals would result in fewer cities than an equally diverse population of conservatives simply because liberals prefer their cities bigger.

Fourth, the theory requires not only the diversity of the population but the presence of entrepreneurs. Two types of entrepreneurs would matter: private sector or public sector (either of whom might also run for office). More entrepreneurs lead to more people who could organize a new political organization, and so more entrepreneurs also lead to more potential cities.

Fifth, the amenities of a location can affect the number of cities if they are highly desirable. A popular but limited amenity, like access to a coast or a good nightlife, attracts residents who will accept less perfect government or higher costs to attain it. Surrounding cities have to perform even better to attract residents away from that amenity. In these cases wealth, which would otherwise support many cities, appears only in a few cities.

Sixth and finally, a diverse population may not be enough to lead to the formation of new cities if the population is not also sorted. Cities have to have contiguous borders and can be restricted to compact borders. A diverse population which is not all living in the same general area cannot have a border drawn around it to form a new city, requiring either another expensive move or that the population put up with less-than-ideal city government. Assuming that people have a preference for neighbors like themselves and that mobility is not excessively expensive, sorting can be assumed for a given diverse population, but in the case of multi-county metropolitan areas, it is unnecessary. If a population has sorted across counties, the level of sorting can be measured directly. If the various racial, ethnic, religious, and social status populations have sorted across county lines, then there should be more governments produced across all counties.

4.3 The Dataset

With the many theories proposed to explain local government, the many resources which constrain interest groups, and the special abilities of local governments, the dataset was guaranteed to have many variables. There are many types of diversity that can effect interest group formation, there are many resources interest groups might need, and within each of these broad categories there are numerous potential measures.

Ultimately, nine separate sources were merged together to create one dataset of county-level variables with some state-level variables. That dataset was then split into counties with an MSA code and those without. For this chapter, the former were aggregated via sums, means, or medians into single cases which had a common state

FIPS code and MSA code. In other words, MSAs were split at state lines so as to preserve state-level variation within the MSA.

The main part of the data, and the dependent variable, come from the Census of Governments Financial Files for the years 1992 and 2002. These data were then matched to demographic and income variables from the 1990 and 2000 census downloaded from the National Historic Geographic Information System (NHGIS) at nhgis.org. Individual county level variables came from the National Center for Charitable Statistics at the Urban Institute, the Association of Religious Data Archives, the Economic Census' County Business Patterns data and Changes in Employment data, David Leip's US Elections Atlas (uselectionsatlas.org), and Berry et al's updated Citizen and Government Ideology scores (1998). The state level variables regarding state laws governing cities came from the US Advisory Commission on Intergovernmental Relations 1993 publication of *State Laws Governing Local Government Structure and Administration*, and the 2002 *Home Rule in America: A 50 State Handbook*.

4.3.1 Variables Regarding Local Government Organization and Finance (Census of Governments Financial Files Data)

The concept which I seek to explain is urban fragmentation. For this analysis, this was defined as the total number of local general governments in an MSA, using the Census (and by extension Office of Management and Budget) definition.²⁵ This is the sum of municipal and township governments. In most states this is not remotely problematic as these are two separate government types (if townships exist in that state).

²⁵ OMB defines an MSA as at least one urban core with a population of 50,000, neighboring counties with a population of at least 10,000 or a single city with a population of 5,000, and any additional neighboring counties where the population commutes into the central city.

In five states –Illinois, Indiana, Kansas, Missouri, and New York –municipalities of some type can be included within townships. This causes some problems when dealing with population share across governments.

For example, Washington Township of Decatur County, Indiana, had a population of slightly more than 12,000 in the 2000 Census, or whom slightly less than 11,500 lived in the city of Greensburg, and the other 500 lived in four other villages or unincorporated territory which are not identified in the data. Which is the relevant measure of local organization? Is it the single jurisdiction which encompassed 12,000 people within the 25,000 of the county, or the first jurisdictions within the township? Countywide, is it the eight townships or the six incorporated cities?

For the count of general governments, it did not matter. Eight townships and six incorporated cities make 14 general governments, and that is a meaningful definition of general government fragmentation for that county. Whatever the distribution of powers between cities and townships, they both represent general government forms that local residents might choose to use to gain benefits for themselves. However, it did matter for other variables that used population.

An alternate measure of fragmentation used in studies of metropolitan areas (such as in Lewis, 2002, seeking to explain suburbanization in metropolitan areas) is a Herfindahl-Hirschman index of population. Having fourteen general governments seems like a lot of fragmentation until adding that nearly two fifths of them live in a single jurisdiction. This measure is used in a supplemental analysis at the end of the chapter. Here, the five states which allow sub-county governments to claim the same population is problematic. Indices rely on exclusive categories to work. If populations can appear in

multiple categories, then when the shares of the populations are squared and added, they can sum to more than 1. Solving that problem requires allocating the shared population to one category or another. One option was to subsume the non-incorporated township populations into the non-incorporated county population, the other is to drop the cities all together. Both measures were tried, both worked. For this analysis, in these five states, townships are ignored for population Herfindahl indices. Their population is counted as unincorporated county jurisdiction. This makes these five states act as the thirty states without townships, rather than as 5 states that have townships but no cities. It also fits better with a theory of organization built around autonomy and control as the point of forming a city to provide services already provided by a township is to gain autonomy over those service decisions.

The other population based problem involves cities which cross county borders. The city population is credited to only one county, even if a portion of the population technically lives across the county line. In most cases this is a small number and can be treated as measurement error. In the case of Amarillo, Texas, the population of Amarillo in 2000 was 173,627, which was –in the finance files –credited to Potter County, population 121,073. Where this happened, I used the finance files numbers and treated the county as being consolidated. This is then counteracted by the county which just lost population (Randall County, population 120,725) across the border being treated as more fragmented because it just lost a major population concentration. In the MSA aggregation, all these border disputes problems disappear because the county lines no

longer matter, and the 173,627 people of Amarillo, Texas are identified as being part of the 226,522 members of the Amarillo Metropolitan Statistical Area.²⁶

The final unusual case to deal with is New York City. New York City is a single jurisdiction that covers five counties: Bronx, Kings, Queens, New York, and Richmond. Rather than deal with five counties each with a fifth of a government, they were aggregated together in a single unit. If summation was not a proper aggregator, the median case of the five was used (which was usually Queens).

Without the dependent variable, a county could not be used in the analysis and ended up cluttering the dataset as the merges went on, so any county which did not appear in the Census of Governments or lacked an identifier in the Government Integrated Directory were dropped.. Most of these cases were in the 2002 finance files or Government Integrated Directory. There were a total of 6,226 cases across two periods, divided into 3,134 counties in 1992 and 3,092 counties in 2002. When aggregated to MSA level and divided at state lines, there were 359 cases in each period, for a total of 718.

As the name suggests, the Census of Governments Finance Files also provides data on government finances. Of particular interest for the question of local government organization are the numbers for intergovernmental revenue and expenditure. If local governments are like interest groups, then they need resources, and most obviously they need money. For most interest groups, money comes from the resources of their

²⁶ There is, however, undoubtedly some measurement error involved. The quoted numbers come from the Census Quickfacts (July, 2010), the equivalent numbers in the Census of Governments are 173,837 for the population of Amarillo, and 113,546 for the population of Potter County, and 278,149 for the population of the Amarillo MSA. I suspect either revisions to the Census estimates after the CoG data were published, or errors in the reports of local government units.

members –and the same for cities –but cities have two advantages over other groups. First, they can tax, and cities can adjust their tax rates. Because expenditure is an included variable –and closely related to revenues –this analysis uses tax base, which is from another dataset. Theoretically, because cities can control their revenue by controlling tax rates, but not the tax base they rely on, the latter is also a better measure of financial resources.²⁷ Second, cities get access to intergovernmental transfers from other local governments, their states, and the federal government. This revenue is a resource which can support cities which might otherwise not be financially viable, so the total amount of money, particularly federal and state money, transferred from other governments is important to the number of governments.

However, merely having money in the MSA is not enough. Individual cities have to have access to it, and it is not clear in the literature that all cities have equal access to the money directed to a given MSA. The federal government may prefer specific highly efficient cities (Volden, 2009) or cooperative cities (Bickers and Stein, 2004), or cities with a particular demand for money (Stein, 1981), or even just big cities with many potential voters in them. State governments can have similar preferences or other preferences. In either case, the resource is not freely available to all. A large pot of money going to a single city does not encourage fragmentation, but a small pot spread widely does. And this is true regardless of source. For this reason, Herfindahl indices for federal and state intergovernmental revenue were created. Likewise, at the local level, both local IG revenue and expenditure may matter to city formation. If there are many spenders or many buyers of local government services, a city can survive by being a

²⁷ The tax base is the absolute limit of the money a city has access too. It cannot tax more than 100%. Higher taxes make government more expensive and therefore less likely to survive –but that is a different concept than resource availability.

provider (getting resources through payments from other cities) or reducing costs (by outsourcing its tasks). Single buyers and sellers, however, can severely limit the resources available to other governments. Total local government IG revenue is not included because it is drawn directly from the same tax base the local governments are using and so is already covered by the tax base variables included elsewhere.

The final variable from the Finance Files is the average city expenditure in the MSA. This is a control for the cost of government in the MSA and is an easy number for an entrepreneur to look at when deciding if there are adequate resources to organize a new city. The measure includes the mix of costs associated with government and the level of services residents want. A high average can indicate expensive government services, preferences for service heavy government, or both. While the mix can vary even within an MSA, the average represents the expected cost of government, which is the number the entrepreneur will need to know when assembling enough resources.

4.3.2 Variables Regarding Demographic and Economic Characteristics of the Population (Decennial Census, by way of the National Historic GIS)

The main theorized drivers of urban fragmentation –the raw materials that entrepreneurs use to produce new cities –are demographic diversity and available monetary resources. In this study, the variables of interest are race and ethnicity, economic resources and status, and choice of living location.

These characteristics of the population are available from the Census, but data prior to 2000 are difficult to get electronically directly. Fortunately, NHGIS.org has compiled historic Census data back to 1790 in an easy-to-download county-based format

similar to IPUMS.²⁸ The only remaining difficulty is that Census questions and definitions vary from census to census. For example, in 1990 urban residents were classified as living in urban areas (city) or urban areas (non-city). In 2000 urban residents were classified as living in urban areas or urban clusters. The definitions are different, but they both rely on the classification of urban as living in a place of a set population and density (1,000 persons/mile²). This can be resolved by assuming that urban areas which are not cities are on the urban fringe where unincorporated urban areas do not risk being annexed or surrounded, which corresponds approximately to the definition of urban cluster. Urban (city) and urban area can then be treated as close in meaning. The alternate solution is just to add all the urban residents together, but this loses some variation and blurs conceptually those who live in cities and those who live near cities, and entrepreneurs may prefer different types of organization for the different types of urban residents. These kinds of problems are endemic to Census data, but most of the variables are consistent decade to decade.

In Census data, race refers to the main racial categories of white, black, Asian or Pacific Islander, Alaskan native or native American, or other. Ethnicity refers to Hispanic or non-Hispanic. For the purpose of this study, these are all grouped together as exclusive racial/ethnic groups (so Hispanic whites, blacks, Asians et cetera appear only as Hispanic). Ethnicity can also include primary language which has also appeared as important in other urban organization literature (Auffhammer and Carson, 2009). This is also included in the Census data. In the US, it is primarily English and Spanish which are of interest. All other languages are grouped in the data (ie: French, very important in

²⁸ Right down to the user agreement.

Louisiana, appears as an “other European Language,” and Chinese, Korean, and Japanese which are important to the West Coast appear as “Asian Language”).

The Census Bureau also provides data on the economic status of residents. It includes median income, persons in poverty (either total or in subgroups up to 2 times the poverty line), housing value quartiles, and aggregates of income and housing stock. Combined with race and ethnicity, these variables provide measures of socio-economic status for individuals. Race/ethnicity and language variables are aggregated into two more Herfindahl indices. If these indices are close to 1, this indicates little variation in the culture –there is a clearly dominant race/ethnicity or language, which would translate into fewer cities. The economic variables do not conform to an index easily, so instead the economic diversity of the population is measured with the inter-quartile range of housing values (while variance might be preferable, it is not available). Poverty and wealth –in the form of housing stock and aggregate income, which are also two major tax bases –are measured separately. More wealth should lead to more cities. Poverty is a control variable with an unpredicted sign.

These measures of the culture of the city are useful, but Census Bureau also produces two other variables. First, it provides the mobility measure, which is the number of people who moved into the county in which they are being counted in the last 5 years (the question specifically is whether they lived in the same county 5 years prior). Mobility is another control without a predicted sign. It also provides the median value of housing and median income. While these are related to wealth and tax base, the purpose they serve in this analysis is controlling for amenities within the MSA. If median housing is expensive, this reflects good amenity values. It is a control variable and could

be positive or negative. Median income is a measure of the community's barriers to entry (ie: how expensive it is to live there, beyond the price of housing), and is again a control variable.²⁹ Expensive barriers could reduce the number of cities, or increase the number of cities since there is nowhere else for new residents to go.

In the analysis of MSAs, the race/ethnicity and language variables are also coded to check for sorting. Due to the constraints of the model described below, this was limited to the concentrations of whites, blacks, Hispanics, English speakers and Spanish speakers. Also, since the theory discusses homogenous groups, the catch-all categories of "Asian" or "Other European" do not fit the theory. Again, these variables used Herfindahl indices, but unlike the other Herfindahl indices in the analysis, a value close to 1 indicates sorting into a single county either by choice or because there are no other counties available. Sorting by community would be more theoretically helpful, but is not possible with the historical data which are aggregated at the county level. If it is by choice, then it indicates sorting and should result in more cities. If it is because there are no other counties to move into, it indicates that everyone has to live in a comparatively compact area and therefore sorting is at least easier, leading again to more cities. Concentrations of blacks may reduce the number of cities due to black block-voting and the historical fear of being divided across so many jurisdictions they lose voting power.

Similar indices were computed for those in poverty (total number) and for those in the 8 poverty categories up to 2 times the poverty line, however the latter indices tended to be highly collinear and cause problems in non-linear models. Dropping the 8 category indices and using the total in poverty was considered, but the 8 indices had

²⁹ Household Median Income and Median Housing value correlate at .6544. The assumption that housing values capture amenity values and income captures cost of living can be relaxed to a more general "place is expensive" without changing the theory.

effects routinely on the likelihood functions at greater than 95% confidence and the variation across categories indicated that not all poverty was the same. To keep these indices as controls for poverty, the eight indices were factored, producing a single strong, positive factor, indicating that if one category of poverty was concentrated in a single county, the others were as well. This is likely driven by the number of single-county MSAs. If the poor are concentrated in a single location, however, this is incentive to have fewer cities for two reasons: first, the poor might prefer it, and second because the poor, being all in one place, are no threat to any wealthy who can move away to the handful of other cities available.

Finally, the number of people who changed counties in the prior 5 years is included to control for mobility. Mobility itself is not theorized to have any particular influence on the number of cities. Movers have no way to know where future cities might spring up prior to the entrepreneurs beginning their organization, and therefore are attracted by the existing cities and currently planned cities. Once moved, they are then able to influence the number of cities –but not based on their status as movers. However, the number of movers can subtly change the make-up of the population such that projects which were not possible prior to the new movers are now possible. Many movers correlated with race, poverty, or industry becomes an omitted variable and biases the results in unpredictable ways.

4.3.3 Variables Regarding the Level of Existing Organization by Non-Profits and Businesses (from the National Center for Charitable Statistics at the Urban Institute, the Economic Census, and the Association of Religious Data Archives)

The next set of variables come from several sources and relate to pre-existing social organization and entrepreneurial ability. These organizations can be thought of as interest groups who might want their own city, or another form of social diversity, or as a practice field for organizers. In all cases, the hypothesized effect is the same: more organization, more diversity, more differences should lead to more cities.

The first set of variables relate to the number of organizers available. These organizers have a gift for getting other people to join groups, or for getting other people to take their services, but there are two ways to do this: through non-profits or through businesses. The number of registered non-profit organizations comes from the National Center for Charitable Statistics (NCCS) and reflects the level of non-profit organizers in the MSA. Due to restrictions on the data, the 1992 Census of Governments data had to be merged with 1995 NCCS data. For similar comparison, the 2002 CoG data was merged with 2005 NCCS data. In both cases, the data are the number of registered non-profits in the third quarter of the year. For-profit organization, through businesses, is measured using the Change in Employment data from the Economic Census. Businesses which had no employees in quarter 1 and had employees in quarter 4 were recorded as business births, while businesses with employees in quarter 1 but none in quarter 4 were recorded as deaths. Both of these numbers are useful measures of private sector entrepreneurialism. High numbers of births reflects the ease of organization, while high numbers of deaths reflects risk taking. Economic effects are controlled for in the measures of wealth described above. Unfortunately, the Economic Census only started recording these data at the county level in 1999 –in the middle of the two time periods of

this panel. As a result, it is excluded from the main analysis, but does appear in the supplemental analysis for 2000.

The business organization measures which are used for both periods are the employment and payroll statistics from the County Business Patterns (CBP) data. These data report how many employees, and total payroll, for businesses in each county by industry code and sub-code. Complicating a straight-forward analysis is that in the middle of the panel (1997) the industry codes changed from Standard Industrial Classification (SIC) to North American Industrial Classification System (NAICS). The NAICS has many more codes than SIC, and so a county economy could appear more diverse simply because it is being divided more ways. To solve this problem, the 2002 CBP 2-digit NAICS codes were converted to the 1-letter SIC categories.³⁰ This was not quite a 1-to-1 match, but it offered the fewest places for error. The crosswalk is included as an appendix.

The concept of business organization is again one of diversity. If there is a diverse business community, the different businesses will have different needs from the cities, and may prefer one which is more amenable to their concerns. Heavy industry might want a proactive city which builds a lot of infrastructure, while service industries want a city which does not tax them, for example. Once again, Herfindahl indices were created for employment and payroll. If the employment index is close to 1, it indicates that the MSA has the bulk of its workers in a single industry. If the payroll index is close to 1, it indicates that –wherever the workers are –most of the payroll in the MSA comes

³⁰ The full conversion is an appendix to the dissertation, The 10 categories are: Agriculture, Mining, Construction, Manufacturing, Transportation, Wholesale Trade, Retail Trade, Finance/Insurance, Services, and Public Services. The last category does not appear in the CBP data.

from a single industry. Consolidation of industry should reduce the opportunities for, and the available entrepreneurs for, new cities.

Finally, some research in Europe (Auffhammer and Carson, 2009) has suggested that religious divisions can lead to multiple cities. The same could happen in the United States. In Wisconsin, Lutherans and Catholics live in close proximity and might each prefer their own governments. Data on religious adherents comes from surveys of congregation rolls collated by the Association of Religious Data Archives. These surveys are approximately decadal. The surveys are not, however, exhaustive. For example, black churches typically do not participate and there are no rolls of atheists/agnostics or spiritual-but-not-religious people. Also, since adherent cross borders to be in their congregations, the county populations cannot be substituted for the denominator in any index. The non-religious are therefore treated as an unorganized separate body for purposes of the religion Herfindahl index. Because the congregations in each survey vary decade to decade, and because many denominations are regional, the index was created by using the major categories of Catholic, Evangelical Protestant, Mainline Protestant, Orthodox, and Other.

These variables also allow, in the case of multiple county MSAs, for testing of sorting, and so each of the industries, and the major religious denominations including “Other” had its own index created measuring whether it was sorted into a single county or spread across multiple counties in the MSA. The indices work exactly like the ones for race and language. Values close to 1 indicate sorting into single counties and should result in more cities.

Likewise, the nine industries were formed into indices for employment and payroll to model whether the industries were concentrated in one county. Unfortunately, these measures tended to be highly collinear, not significant, and cause problems with non-linear models, and yet routinely affected the likelihood at more than 95% confidence. To include them as controls, both employment and payroll concentration across counties were factored, which each produced strong single positive factors indicating that if one industry was concentrated in a single county, the others would be too.

4.3.4 Variables Related to Political Organization and Ideology (from David Leip's Atlas of US Presidential Elections, and from Berry et al, 1998)

The final set of county characteristics (there are still state characteristics to come) are political. A perfectly good reason to desire a new city is because half the city is constantly outvoting the other half or forcing compromises that annoy everyone. If the residents of an urban area cannot agree on who they wish to represent them and govern them, it would make sense to separate and each select their own governments. Entirely separate from the organizational question (which party, or which set of representatives) is the ideology question.

The political organization variable is measured by the results of gubernatorial elections in the first year past the decennial census -1990-1993 and 2000-2003. For states that have 2 year terms for governors (New Hampshire and Vermont) the off-presidential year was used because it was easier to code. The county election returns were purchased from David Leip's Atlas of US Presidential Elections website, which is a private collation of data from State Secretaries of State and political almanacs of election

returns. The two largest vote-getters in the state were used –and if that did not include the Democratic Party, those numbers were saved separately. The ratio of majority party to second-party was calculated giving a number with a minimum of 1 (perfect parity) and getting larger. If third parties took more than 10% of the vote combined, a dummy variable was coded to mark the presence of third parties (10% was chosen because in 3-party races this was enough for a third party to take at least one county, while in 4-or-more party races it might not be). The sign of the ratio is not necessarily predicted by theory. If it is close to 1, elections are competitive meaning it might not in anyone's interest to split the jurisdiction. On the other hand, close elections are also the ones where there might be enough people to justify a new jurisdiction. The opposite problem occurs with high numbers. A dominating majority gives a reason to form a new city, but there may not be enough people to make it work. Nonetheless, the tentative prediction is that a high ratio should cause fragmentation in the MSA. Third parties are unequivocal. An organized third party should be able to produce new cities. The number of Democrats was preserved separately for 2 reasons. First, Democrats tend to be an urban party, and so may have a party interest in fewer cities. Second, if Democrats are all clustered together in one place, it implies partisan sorting, which might lead to more cities.

As important as the partisan organization is the ideological bent of residents. Urban consolidation was a Progressive policy and so more liberal populations may prefer fewer larger cities, even if they are Republicans. These data come from a dataset created by Berry, Ringquist, Fording, and Hanson in a 1998 *AJPS* article and maintained on Fording's website to the present. The ideology scores are based on the votes state residents made for US Representatives and Senator and that Representative's scores by

Americans for Democratic Action and Committee on Political Education (both liberal advocacy groups) to provide measures of state and citizen liberalism. I hypothesize that an MSA located in a more liberal state will have fewer cities, all else equal. It is this variable that knocks the District of Columbia out of the analysis, as it elects no national representatives, and so value could not be calculated.

4.3.5 Variables Regarding State Laws Governing Local Government Organization (from State Laws Governing Local Government Structure and Administration, and Home Rule in America: A 50 State Handbook.)

The last variables are the state laws governing the powers given to cities. There are 10 such variables chosen because they were appropriate and mostly consistent across the two publications that housed the data. *State Laws Governing Local Government Structure and Administration* has many charts describing the laws, but most of them are dichotomous –whether the state in question has such a law. *Home Rule in America* typically has more variation in the charts, but to merge them together, that variation was lost in favor of a 1/0 variable. Also, in the case that the latter source was missing a state's data, it was assumed that there was no change.

The first of the variables is the presence of Home Rule –a law granting authority to cities that the state cannot tamper with outside certain restrictions. If the state lacks Home Rule, it is coded a 0. If it is protected by statute, it is coded a 1. If it is protected by the state Constitution, it is a coded a 2. The second variable is whether the state courts have adopted Dillon's Rule, which is the judicial doctrine that cities are creatures of the state and the state can do whatever it wants to them. This is coded 1 if present, 0

otherwise. Oddly some states have both –and Connecticut manages to constitutionally protect Home Rule while simultaneously having a Dillon’s Rule court.

The third and fourth variables are whether there are statutory limitations on incorporation or annexation (coded 1 for yes, 0 for no). Fifth through eighth cover whether annexation may be done 5.) Voluntarily, 6.) via city ordinance, 7.) only with county government permission, and 8.) via a vote of the effected residents. Despite all relating to annexation, they are neither mutually exclusive laws, nor are they highly correlated (strongest correlation is .2746 between ordinance and voluntary annexation) and so they are kept individually rather than being factored or otherwise formed into an index. Variables 9 and 10 are whether the state requires cities have a balanced budget and whether the state caps the debt cities may take on.

Finally, there are fixed effects for all states, with Alabama being the excluded case by virtue of being first alphabetically.

4.4 The Typical MSA

Much discussion of urban areas, cities, and metropolises tends to be based off the familiar references –New York City seems popular. Edward Glaeser blogs for the *New York Times* Economix blog addressing many issues, but particularly urban issues. Table 4.4.1 looks at his choice of American examples for a month of blogging on urban issues near when his book *Triumph of the City* was published.³¹

³¹ Identified by the phrase book title appearing in his byline

Table 4.4.1: Popular City Examples (from the *New York Times* Economix blog)

Date of Entry and Title	City Examples
1 February 2011, “It’s always the urban pot that boils over.”	Boston, Los Angeles, Miami, and New York City
8 February 2011, “Assessing the Daley Legacy in Chicago.”	Chicago, New York City, New Orleans, Cleveland, Detroit, and Boston
22 February 2011, “Can Detroit find the Road Forward?”	Detroit and Flint
8 March 2011, “How Seattle Transformed Itself.”	Seattle, Detroit, St. Louis,

Even when restricted only to the Sunbelt in a later article, his examples are Atlanta, Dallas, Houston, Phoenix, and Charlotte. These are all well known cities and so they make good examples –people can be assumed to understand a comparison of Chicago’s economic wellbeing to Detroit’s. Are they typical examples, though?

The answer is that they probably are not, but this section will look explicitly at the question of “what is a typical MSA?” The goal of this section is to avoid thinking about “urban organization” as “the organization of New York.” New York is an unusual place –it is five counties and many more cities living under a single government because of a state law (albeit one approved by referendum in New York in 1898, and which the New York Assembly revisited as recently as 1989³²). Rather, when discussing deviations from average or median cities, examples should be of actual mean or median cities, or in this analysis, mean and median MSAs. Table 4.4.2 shows the mean, median, standard deviation, minimum, and maximum of MSAs on four measures of size: population, aggregate income, median home value, and number of counties across the 2 periods of the analysis.

³² The basic outline of the story was included in a report in *City Journal* at the time of the Staten Island secession vote. Archived on the Internet at <http://www.city-journal.org/article02.php?aid=1519>

Table 4.4.2 Summary Statistics of Select Size of MSA measures

Measure	Mean	Median	Standard Deviation	Minimum	Maximum
Population (100k)	6.06	2.43	11.07	0.05	129.00
Aggregate Income (1b, 2002\$)	2.26	0.35	6.02	.000	50.334
Median House Value (100k, 2002\$)	1.06	0.90	0.55	0.44	4.69
Number of Counties	2.34	1.00	2.23	1.00	20.00

The first thing to note are that the data are right skewed. Aggregate income is most skewed with a skewness of 6.055, and the median house value is least with a skewness of 2.738.³³ In this case the heuristic of mean greater than the median also works. The second thing to notice is that the average MSA has 600,000 people, with 2.25 billion dollars in income, with median housing values just above \$100,000 spread across slightly more than 2 counties within a single state.³⁴ However, given the skewness, the median is a better measure of “typical,” and these MSAs are much smaller. Median MSAs have roughly a third of the population, slightly less than a sixth the income, have only one county, but only slightly less housing value. When separated by period, it is notable that these measures increase from 1992 to 2002, except for the number of counties which shrinks slightly.

No city is exactly average or exactly median on all four measures. Table 4.4.3, however, shows 9 MSAs that are within a quarter standard deviation on all 4.

³³ They are also all leptokurtic, with high peaks and long tails.

³⁴ All dollar amounts are constant 2002 dollars.

Table 4.4.3 MSAs which are close to Average

MSA	State	Population (100k)	Income (Billions)	Median Housing (100k)	Counties	Year
Fresno	CA	7.5558	2.12394	1.804254	2	1992
Las Vegas	NV	7.5924	0.945	1.061831	2	1992
Huntsville	AL	3.42376	1.8652	0.9485	2	2002
Mobile	AL	5.40258	1.3935	1.015	2	2002
Daytona Beach	FL	4.93175	3.7077	1.0175	2	2002
Pensacola	FL	4.12153	1.3353	0.9585	2	2002
Springfield	IL	3.43513	0.855	0.924	2	2002
Akron	OH	6.9496	2.1694	1.1605	2	2002
Canton--Massillon	OH	4.06934	2.9294	0.95	2	2002

Even when separated by period, the average MSA is still small compared to the common examples. The five closest-to-average MSAs are shown in table 4.4.4 for 1992 and for 2002. Based on their appearances in both periods, perhaps Mobile, Alabama and Akron, Ohio could be dubbed the most average MSAs in the US from 1992 to 2002.

Table 4.4.4 Five MSAs Which Are Close to Average Within Their Period

MSA	State	Population (100k)	Income (billions)	Housing Value (100k)
1992				
Mobile	AL	4.76923	0.048668	0.751489
Sarasota--Bradenton	FL	4.89483	0.173412	1.063754
Gary	IN	6.04526	0.571819	0.792526
Akron	OH	6.57575	0.05782	0.83228
Columbia	SC	4.53331	0.061349	0.931667
2002				
Mobile	AL	5.40258	1.3935	1.015
Daytona Beach	FL	4.93175	3.7077	1.0175
Pensacola	FL	4.12153	1.3353	0.9585
Akron	OH	6.9496	2.1694	1.1605
Canton--Massillon	OH	4.06934	2.9294	0.95

But these are average MSA, and the data have a hard right skew. What are the median MSAs? With the high peak in the data, there are 134 MSA-state-years within a quarter standard deviation of the median. They range across Auburn, Alabama, Bloomington, Illinois, Lawrence, Kansas, and College Station, Texas.³⁵ Table 4.4.5 shows the five most median MSAs in each period.

However defined, the typical MSA is smaller than the 8-million people of New York City, let alone the tri-state area, so when contemplating the scale of organization in the next section it is important to recognize that most of the places contemplating their level of fragmentation are not huge and faceless blocks of people, but rather a few hundred thousand from whom an entrepreneur need only find enough to found a city –not enough to compete with a mega-metropolis. In these terms, the task ahead of the entrepreneur is much less daunting.

Table 4.4.5 Five MSAs Which Are Close to Median Within Their Period³⁶

MSA	State	Population (100k)	Income (billions)	Housing Value (100k)
1992				
South Bend	IN	2.4705	0.046	0.6438
Lincoln	NE	2.1364	0.031	0.7925
Galveston--Texas City	TX	2.1739	0.323	0.7605
Lubbock	TX	2.2263	0.370	0.6887
Portland--Vancouver	WA	2.3805	0.071	0.9490
2002				
Merced	CA	2.1055	1.110	1.111
Gainesville	FL	2.1795	0.550	0.973
Bloomington--Normal	IL	2.7788	1.158	1.148
Erie	PA	2.8084	1.169	0.853
Lubbock	TX	2.4262	0.632	0.691

³⁵ A colleague mentioned that most of the cities on that list are college towns, but confirming that and then theorizing why is outside the scope of this analysis.

³⁶ And that is Portland-Vancouver, Washington. It is the portion of the MSA on the other side of the state line. On that grounds it might be excluded as being part of another MSA –that problem is not present in the other examples.

4.5 Analysis of Metropolitan Fragmentation by Entrepreneurial Use of Population Diversity, Local Resources, and State Laws

To test the effects of population diversity, local resources, and state laws (theorized to be done via an entrepreneur) on MSA fragmentation, the number of general governments was regressed on many measures and controls. As the number of general governments in an MSA is a count variable, the initial analysis was done with cross-sectional negative binomial regression, which is a non-linear maximum likelihood estimation method and a special case of cross-sectional Poisson regression. However, during the initial analyses, the model could not find a solution to the regression specified. The data were then run as a cross sectional Poisson regression, which could find a solution, and had the same or nearly the same log-likelihood (the difference was literally zero in most cases, making reference to the X^2 table superfluous) indicating that the proper distributional specification for the model was Poisson. The implications of this are discussed in the next section.

The other discovery in initial tests was the collinearity problems of the poverty and industry sorting variables already mentioned. Those two categories of variables were factored into two factors, which were singular, strong, and positive, that can be interpreted as the propensity of all the categories within each factor to be forced into single counties, whether by geography or choice. Once modeled with the factors, the

likelihood functions were still worse than the failing models with all the variables included, but they converged.³⁷

Those problems dealt with, the model was ready for specification. The vector of variables, their means, and their hypothesized impacts, and reasons are presented in Table 4.5.1. The Poisson model itself is estimated by maximum likelihood, specifying a Poisson distribution of the dependent variable. It is a numeric calculation, meaning that the calculation adjusts the parameters until the likelihood function cannot go higher.

³⁷ The three indices prevent a likelihood ratio test because the model with all the variables is not a special case of the one with three indices. Without a statistical test, this is still justified, first because it allowed the model to be solved and second because there were strong factors in all three sets of indices. The only reason the variables are not jettisoned entirely for being proxies for the number of counties (already included in the model) is that some of the variation –however buried in geography –does relate to sorting, which is theoretically important.

Table 4.5.1 Summary of Model Parameters for Cross-Sectional Time Series Poisson Regression (2 periods, N=718)

Variable	Mean	St. Dev.	Prediction	Theory
General Governments	33.27577	48.6953	DV	
MSA Population (100k)	6.05533	11.06878	+	People a resource, more diverse preferences
Urban Areas population (100k)	4.83560	9.864178	+	People a resource, more diverse preferences
Urban Cluster population (100k)	0.29726	0.3798731	+	People a resource, more diverse preferences
Moved Counties in last 5 years (100k)	1.00909	1.502714	?	Control variable
Average City Expenditure (1b)	0.07453	0.3635765	-	Expensive governments are harder to organize
Total State revenue to MSA (10m)	32.24948	122.9769	-	A single recipient can control the MSA
Total Federal revenue to MSA (10m)	4.71643	18.89659	-	As can a single buyer
Herfindahl Index (HHI) of federal revenue to MSA	0.56187	0.2440408	-	Concentration indicates not all have access
HHI of state revenue to MSA	0.96216	1.4533	-	Concentration indicates not all have access
HHI of local revenue to MSA	0.50589	0.2645982	+	Vibrant market for local goods can support cities
HHI of local intergovernment expenditure to MSA	0.57321	0.3343219	+	Vibrant market for local goods can support cities
Aggregate Income for the MSA (1b)	2.25846	6.023189	+	Income Tax base a resource
HHI of income concentration across counties	0.80012	0.2486309	-	Concentration indicates not all have access
Household Median Income (10k)	3.88005	0.8187621	+	Wealthier residents can afford more cities
Persons in Poverty (100k)	0.65183	1.365133	+	Wealthy try to avoid the poor
Poverty concentration factor	3.1E-09	0.9997927	-	Unitless control of concentrated poverty
Aggregate Housing Value (10b)	1.87439	3.927196	+	Property base is a resource
Median Housing Value (100k)	1.05816	0.5475544	?	Control for local ammenities
Housing Value Interquartile Range (100k)	0.69251	0.3778097	+	Gap of rich to poor encourages new cities
Registered Not-for-Profits (1k)	2.65098	4.415923	+	NFP entrepreneurs can become city founders
Ratio of Majority to Minority Party voters	1.64611	0.7257001	+	Being outvoted an incentive to make a city

Table 4.5.1 Continued	Mean	St. Dev.	Prediction	Theory
3rd Parties (1/0)	0.09331	0.2910758	+	Being outvoted an incentive to make a city
Statutory Home Rule Protection (2/1/0)	1.74234	0.5801612	+	Protects city interests
Dillon's Rule Judiciary (1/0)	0.13649	0.3435477	-	Restricts city power
Laws limiting Incorporation (1/0)	0.91504	0.6741052	-	Restricts city power
Laws limiting Annexation (1/0)	0.97493	0.1564456	-	Restricts city power
Annexation allowed voluntarily (1/0)	0.75070	0.4329115	-	Restricts city power
Annexation allowed by City Ordinance (1/0)	0.54457	0.4983569	-	Restricts city power
Annexation allowed with County Permission (1/0)	0.22145	0.4155111	-	Restricts city power
Annexation requires referendum (1/0)	0.46100	0.4988244	-	Restricts city power
State requires Balanced Budget (1/0)	0.40370	0.4910199	-	Restricts city power
State imposed Debt Limit (1/0)	0.80641	0.3953893	-	Restricts city power
Citizen Liberalism (state)	45.45297	11.43944	-	Liberals prefer consolidation
Government Liberalism (state)	45.76505	23.53155	-	Liberals prefer consolidation
Total number of Democrats (100k)	0.83843	1.391833	-	Democrats prefer consolidation
HHI of Democrat concentration	0.76919	0.2621629	-	Can only control where they have majority
HHI of Racial Diversity across MSA	0.68435	0.1708592	-	Homogenous population has homogenous preferences
HHI of White concentration across counties	0.75015	0.2792196	+	Sorting required for more cities
HHI of Black concentration across counties	0.85433	0.2065288	+	Sorting required for more cities
HHI of Hispanic concentration across counties	0.79729	0.2428424	+	Sorting required for more cities
HHI of Language Diversity across MSA	0.71059	0.1192594	-	Homogenous population has homogenous preferences
HHI of English primary language concentration	0.75789	0.272118	+	Sorting required for more cities

Table 4.5.1 Continued	Mean	St. Dev.	Prediction	Theory
HHI of Spanish primary language concentration	0.79249	0.2448225	+	Sorting required for more cities
HHI of Religion Diversity across MSA	0.43422	0.1213245	-	Homogenous population has homogenous preferences
HHI of Mainline Protestant concentration	0.77374	0.262918	+	Sorting required for more cities
HHI of Evangelical Protestant concentration	0.77158	0.264324	+	Sorting required for more cities
HHI of Catholic concentration	0.80337	0.2455918	+	Sorting required for more cities
HHI of Orthodox concentration	0.41943	0.4698754	+	Sorting required for more cities
HHI of Other Religions concentration	0.81569	0.2446862	+	Sorting required for more cities
Number of Counties	2.33565	2.233293	+	County borders give variety to local laws, options for cities
HHI of Employment Diversity across MSA	0.23837	0.0362605	-	Homogenous population has homogenous preferences
HHI of Payroll Diversity across MSA	0.24563	0.0534503	-	Homogenous population has homogenous preferences
Employment Concentration Factor	-5.6E-09	0.9971463	+	Unitless control of concentration of employment
Payroll Concentration Factor	-2.1E-09	0.9963808	+	Unitless control of concentration of payroll
State Fixed Effects				Control for state time-invariant characteristics
State/MSA pair Random Effect				Grouping for the panel. Random effect chosen to preserve degrees of freedom and because MSA/County borders are somewhat arbitrary and not chosen by residents.

The following model is used to estimate differences from the mean from differences across cases:

$$E[Y_{it}|x_{it}] = e^{x_{it}\beta + [\alpha_i + \varepsilon_{it}]}$$

Where:

Y= the number of general governments

e= Euler's constant

x= a vector of explanatory variables including measures of diversity, resources, and sorting

β = the coefficient weights to be estimated

α = the random effect variation

ε = error (epsilon chosen rather than e because there is already an e in the model)

i is the identifier for an MSA/state, and

t is the identifier for the period.

The model uses random effects on MSAs to preserve degrees of freedom and to allow the several more fixed effects to work within the numerical calculation. This requires assuming the expected value of x_{it} is zero, or that the MSA characteristics measured do not correlate with the unmeasured characteristics of the MSAs. This is justified because the MSAs are chosen by Census based on measured characteristics, but their borders are determined separately and arbitrarily by borders of the constituent counties. The other assumption required is that Y be distributed Poisson, which is justified by the likelihood ratio tests already described. The estimation procedure is done via MLE and the reported coefficients are deviations from the mean, just as in OLS.

4.5.2 Summary of Results

Due to the size of the model, the specific parts are reported separately below, but the model over-all is supportive of several parts of the theory and the entire regression is reported at the end. Table 4.5.2 shows the model descriptive and test statistics. The 718 cases only form 358 groups of 2 because Washington, DC lacked one variable and so dropped out in both periods. The fixed effect for Massachusetts was dropped for being collinear with some other variable. The model's results are significantly different from a null model of all parameters=0 at the .1% alpha level.

Table 4.5.2 Poisson Regression Summary and Tests

Obs	718
Groups	358
Obs/Group	2
Loglikelihood	-2303.6307
Wald(101)	2389.36
χ^2	P>0.001

The data show strong support for the resource view of city organization, with the predicted signs and significance on the costs of city government and the financial resources available to entrepreneurs. State laws, with the exception of statutory home rule, have the expected signs and significances as well. Resident diversity and preferences are more mixed. Liberalism has the expected sign and significance, but while Democrats are signed as expected (positively), they are not significant. Racial, religious, and employment heterogeneity have the expected signs, but only religious diversity is significant. Payroll heterogeneity is signed positively, and not significant.

Language diversity is significant but unexpectedly positive. Measures of sorting are insignificant except for concentrations of poverty and concentrations of whites and blacks. Poverty and black concentration are associated with fewer cities, but white concentration leads to more. Of 48 state fixed effects, 31 are significant and 35 are negative relative to excluded Alabama, suggesting there are additional state level characteristics that affect fragmentation but are not measured in this analysis.

4.5.3 Results for Measures of Finance and Urban Population.

Table 4.5.3 Results for Measures of Finance and Urban Population

General Governments	Coef.	Std. Err	Z	P> z	Significant	Predict/Right
MSA Population (100k)	-0.00348	0.00379	-0.92	0.359		+ no
Urban Areas population (100k)	0.02415	0.01345	1.80	0.073	+	+ yes
Urban Cluster population (100k)	0.10701	0.05709	1.87	0.061	+	+ yes
Moved Counties in last 5 years (100k)	0.08654	0.04292	2.02	0.044	*	?
Average City Expenditure (1b)	-2.99602	0.54210	-5.53	>0.001	**	- yes
Total State revenue to MSA (10m)	0.00236	0.00166	1.42	0.157		+ yes
Total Federal revenue to MSA (10m)	0.00023	0.00037	0.63	0.531		+ yes
Herfindahl Index (HHI) of federal revenue to MSA	-0.26827	0.07059	-3.80	>0.001	**	- yes
HHI of state revenue to MSA	0.02507	0.00883	2.84	>0.001	**	- no
HHI of local intergovernmental revenue to MSA	-0.22344	0.06405	-3.49	>0.001	**	- yes
HHI of local intergovernment expenditure to MSA	-0.11100	0.04669	-2.38	0.017	*	- yes

+ significant at 90% CI

* significant at 95% CI

** significant at 99.9% CI

The surprising result of this portion of the analysis is how little urban population matters. Neither a large population, nor an urban population, nor a population living on the edges of an urban population seems to strongly affect the number of general governments. The MSA population is insignificant and the urban populations are significant only at 10%. At 10%, 5 million urban or 1 million urban cluster residents predicts one additional city. Also surprisingly unimportant are super-governments' largesse. Rather, the statistically significant measures are local factors: are federal and state funds going to a single city or township jurisdiction? Are there many buyers and sellers, and how expensive is government in the MSA? These measures tend to support the theoretical predictions. Consolidation of funds is associated with consolidation of governments, and higher average cost governments are fewer governments. If entrepreneurs cannot expect to get access to funds because all funds go to few jurisdictions then they will not be less able to organize a new government. The exception to this rule is state funds, which are significant, but are associated with fragmentation when such funds are concentrated. However, these coefficients are small. At their best, several of these measures would have to be consolidated to reduce an MSA by one general government.

It is the cost of government which deters city formation. If there are large expenditures involved (1 billion 2002 dollars in this case) per city that is enough to reduce the MSA by nearly 3 general governments. If residents have high cost preferences, or if government services are high cost, or other factors increase the average cost of government, then individual residents are unwilling to create another one.

Finally, there is mobility. Those who changed counties in the previous five years are associated with more general governments. Slightly more than a million movers indicates a new general government –but this would be more people than live in the average MSA. As a control variable, movers serve their purpose. The exact interpretation of this primary effect is difficult, though. It could be endogenous, with movers attracted to the choices of a fragmented MSA. It could be that a population with many movers is a place with many people in the market for government, and so is a profitable place for entrepreneurs.

4.5.4 Results for Measures of Economic, Not-for-Profit, and Political Organization

Once again, what does not seem to matter is almost as interesting as what does for measures of economic, not-for-profit, and political organization. Neither aggregate income, nor the wealth of residents, nor the spread of residential wealth has a significant impact on the number of general governments. Even being politically outvoted is not significant. Rather, the significant measures are the concentration of poverty and the presence of third parties. Both are also signed as predicted. This leaves poverty concentration ambiguous. It could be either that the poor prefer consolidated cities and so, if they all move to a single location they do not create new cities (recalling that mobility has been controlled for) or it could be that the wealthy are not threatened by poor people in a neighboring jurisdiction. Third parties –not a majority of the state electorate –may satisfy their preferences with local governments of their own.

Table 4.5.4 Results for Measures of Economic, Not-for-Profit and Politics

General Governments	Coef.	Std. Err	Z	P> z	Significant	Predict/Right
Aggregate Income for the MSA (1b)	0.00072	0.00184	0.39	0.698		+ yes
HHI of income concentration across counties	-0.03539	0.07568	-0.47	0.640		- yes
Household Median Income (10k)	0.01179	0.05364	0.22	0.826		+ yes
Persons in Poverty (100k)	0.00324	0.06528	0.05	0.960		+ yes
Poverty concentration factor	-0.67688	0.19309	-3.51	>0.001	**	- yes
Aggregate Housing Value (10b)	0.01464	0.01657	0.88	0.377		+ yes
Median Housing Value (100k)	-0.18481	0.10455	-1.77	0.077	+	?
Housing Value Interquartile Range (100k)	0.13235	0.13164	1.01	0.315		+ yes
Registered Not-for-Profits (1k)	0.00455	0.01581	0.29	0.773		+ yes
Ratio of Majority to Minority Party voters	0.01742	0.02159	0.81	0.420		+ yes
3rd Parties (1/0)	0.12367	0.04967	2.49	0.013	*	+ yes

+ significant at 90% CI

* significant at 95% CI

** significant at 99.9% CI

Finally, median housing value is significant at 10%, and may be a type 1 error, but its sign is interesting. Being negative it indicates that expensive housing –holding the total value of housing constant –is associated with fewer cities. A million dollar median house reduces an MSA by a single general government. This could be evidence for agglomeration effects where the benefit of living in the particular jurisdiction simultaneously bids up the value of housing and reduces the opportunities for more city organization. It could also be nothing.

4.5.5 Results for Measures of State Laws, State Liberalism, and Democrats

Despite the theory's emphasis on resources and population, the variables on state laws, liberalism, and Democrats are where much of the data point. Most of the variables are significant and pointed the right way, though many are quite small in their impact.

The unexpected results are from statutory and constitutional home rule protection, which despite protecting cities from state power, are still associated with fewer general governments. Perhaps home rule protections are not that strong, or come with strings that are not measured in this analysis. How home rule protections would, of themselves, reduce the number of general governments is not in this theory. Dillon's Rule states, however, are unsurprising. In states with an unsympathetic judiciary there are, on average, slightly more than 2 fewer cities in their MSAs. All the other restrictions on cities likewise make them less powerful, therefore less effective, and therefore less useful to entrepreneurs trying to organize new cities. Annexation by ordinance does not fit the pattern, but is also statistically insignificant. This might signify that it does not matter, or that the ability to annex without many vetoes is a power cities desire.

Citizen liberalism is significant and signed as expected, but is small enough that it would only have a noticeable effect (1 fewer general government) in the most liberal places. Government liberalism, is signed the opposite of the expectation and is also significant. What this means is unclear. The weight is small, so its practical effect is close to none. Finally, the number and distribution of Democrats are signed as expected, but not statistically significant.

Table 4.5.5 Results for Measures of State Laws, State Liberalism, and Democrats

General Governments	Coef.	Std. Err	Z	P> z	Significant	Predict/Right
Statutory Home Rule Protection (2/1/0)	-0.43868	0.06527	-6.72	>0.001	**	+ no
Dillon's Rule Judiciary (1/0)	-2.39153	0.32450	-7.37	>0.001	**	- yes
Laws limiting Incorporation (1/0)	-0.03572	0.02473	-1.44	0.149		- yes
Laws limiting Annexation (1/0)	-0.60300	0.18075	-3.34	0.001	*	- yes
Annexation allowed voluntarily (1/0)	-0.03948	0.03449	-1.14	0.252		- yes
Annexation allowed by City Ordinance (1/0)	0.05065	0.03487	1.45	0.146		- no
Annexation allowed with County Permission (1/0)	-0.14432	0.05906	-2.44	0.015	*	- yes
Annexation requires referendum (1/0)	-0.17633	0.04103	-4.30	>0.001	**	- yes
State requires Balanced Budget (1/0)	-0.15087	0.03476	-4.34	>0.001	**	- yes
State imposed Debt Limit (1/0)	0.05432	0.04941	1.10	0.272		- no
Citizen Liberalism (state)	-0.01070	0.00290	-3.68	>0.001	**	- yes
Government Liberalism (state)	0.00190	0.00065	2.92	0.004	*	- no
Total number of Democrats (100k)	-0.02060	0.02586	-0.80	0.426		- yes
HHI of Democrat concentration	-0.42957	0.60263	-0.71	0.476		- yes

+ significant at 90% CI

* significant at 95% CI

** significant at 99.9% CI

4.5.6 Results for Measures of Racial, Ethnic, Linguistic, and Religious Diversity

Cultural diversity is inconsistent across the dataset. None of it is particularly significant, and signs are both positive and negative. Religious diversity is enough to have 1 fewer general government if the entire population fits under one broad category of religion, but sorting is not significant. Language concentration, however, is positive, indicating that if the entire metropolis speaks the same language, it can support four more general governments despite the linguistic homogeneity. This is contrary to the theory,

which was that more linguistic homogeneity would allow for fewer cities. This might be because everyone speaking the same language likely implies everyone speaks English, whereas in Europe where the variable was originally used, it might imply one of several languages.. Why having all linguistically homogenous MSAs speak the same language would reverse the effect found in Europe is unknown. While insignificant, the language sorting variables are signed as expected. The more interesting results are the different signs and magnitudes of black and white concentrations.

The white population concentrating into a single MSA leads to a reduction in the number of governments which is quite large, despite sorting being a first step to creating more governments. The concentration of the black population works as expected, but is much smaller. There are several possibilities. Whites, being the majority or plurality of the population in most places, may not find their race to be particularly salient. They may choose to fragment on different grounds than race. Thus, putting many whites in one place is really akin to putting many diverse interests together in one place rather than many people with one interest in one place.

The black population, however, is a minority population and so considers race salient. Their sorting, then, does lead to race-based organization. This would also be consistent with white flight, though these data cannot answer that question directly as they do not distinguish white moving away from blacks or blacks moving away from whites, or anyone moving out of a central city.

The main finding of these variables is how little race, ethnicity, religion and language matter in the decision to create new cities. Culturally diverse populations do not require numerous cities to get along.

Table 4.5.6 Results for Measures of Race/Ethnic, Linguistic, and Religious Diversity

General Governments	Coef.	Std. Err	Z	P> z	Significant	Predict/Right
HHI of Racial Diversity across MSA	-0.10490	0.22650	-0.46	0.643		- yes
HHI of White concentration across counties	-3.83477	1.70074	-2.25	0.024	*	+ no
HHI of Black concentration across counties	0.52457	0.25249	2.08	0.038	*	+ yes
HHI of Hispanic concentration across counties	-0.50495	0.45291	-1.11	0.265		+ no
HHI of Language Diversity across MSA	4.98349	2.33275	2.14	0.033	*	- no
HHI of English primary language concentration	0.75211	0.52692	1.43	0.153		+ yes
HHI of Spanish primary language concentration	0.12547	0.27223	0.46	0.645		+ yes
HHI of Religion Diversity across MSA	-1.04330	0.43412	-2.40	0.016	*	- yes
HHI of Mainline Protestant concentration	0.04978	0.28729	0.17	0.862		+ yes
HHI of Evangelical Protestant concentration	0.27036	0.25225	1.07	0.284		+ yes
HHI of Catholic concentration	-0.01485	0.02766	-0.54	0.591		+ no
HHI of Orthodox concentration	0.05234	0.09552	0.55	0.584		+ yes
HHI of Other Religions concentration	0.04067	0.02382	1.71	0.088	+	+ yes

+ significant at 90% CI

* significant at 95% CI

** significant at 99.9% CI

4.5.7 Results for Measures of Industry Consolidation and Number of Counties

Table 4.5.7 Results for Measures of Industry Consolidation and Number of Counties

General Governments	Coef.	Std. Err	Z	P> z	Significant	Predict/Right
Number of Counties	-1.92936	0.98181	-1.97	0.049	*	+ no
HHI of Employment Diversity across MSA	-0.57788	0.61561	-0.94	0.348		- yes
HHI of Payroll Diversity across MSA	0.09015	0.42626	0.21	0.832		- no
Employment Concentration Factor	0.19214	0.38415	0.50	0.617		+ yes
Payroll Concentration Factor	-0.23087	1.04587	-0.22	0.825		+ no

+ significant at 90% CI

* significant at 95% CI

** significant at 99.9% CI

These final variables are essentially all insignificant. Only the number of counties is significant, and it is marginal. These variables are also of unusual sign and magnitude. It does not appear in these data that industry consolidation has a notable impact on MSA consolidation, and what impact it does have is contradictory.

4.5.8 Robustness and Additional Analyses

There are additional ways to measure some of these concepts. The ones attempted were consolidating urban areas and urban clusters into simply a sum of “urban” residents, testing for an interaction between population and government liberalism, and testing quadratic terms on the population diversity in case the relationship was non-linear. None of these robustness checks turned up differences from model to

model, and so the current model was reported. The final robustness check included a Herfindahl index measure of population concentration across cities and townships. This did not cause many changes (only making urban area and urban cluster population positive and significant), but was itself highly significant and highly negative, indicating that a consolidated population tends to live in a consolidated MSA. This remains excluded from the main model, though, to keep the two definitions of fragmentation distinct.³⁸

Two additional analyses were done to supplement this analysis. First, number of general governments is not the only possible measure of urban fragmentation. Many general governments may have very few people, and so an MSA is de facto quite consolidated because all residents choose to live in a single jurisdiction despite options. To test this, a panel regression was performed of the same variables on a Herfindahl index of municipal and county populations (townships were excluded where they were coterminous with municipalities) ranging from $1/n$ to 1, where 1 is all residents living in a single jurisdiction and n is the number of jurisdictions. While the regression itself is statistically distinct from a regression with all parameters=0, very few of the parameters themselves are significant.

Movers are again significant and have a preference for population fragmentation, consolidated revenue is associated with consolidated populations, and annexation via referendum and balanced budget requirements both associate with consolidation. All else is noise. Individuals' choices about where to live do not seem to be based on the same factors that determine the number of jurisdictions.

³⁸ Also, because, while many cities have zero intergovernmental revenue, or zero black population, or zero Catholics, no city has zero population, so the concentration of the population is endogenous to the number of general governments.

The second analysis was only on 2002 data, still a Poisson regression, so that private sector entrepreneurship could be tested. Again the regression is distinct from an all-zero parameters model, and the number of new business starts was positive and significant, indicating that private sector entrepreneurship does have a role to play in city formation. The model with only 2002 data is largely the same as the panel, but there are some other differences. First, many more variables are statistically significant, and several switch signs. Notable sign switchers include: aggregate income (positive to negative), third parties (positive to negative), Dillon's Rule (negative to positive), debt limits (negative to positive), and industry consolidation (which settled on negative). Second, several more states were dropped for colinearity. Unfortunately, how much of this is due to bizarre behavior in 2002 and how much of this is due to the added measure of entrepreneurship is unclear. The complete supplemental regression follows Table 4.5.8 (the cross-sectional time series Poisson regression) and is Table 4.5.9.

Table 4.5.8 Full Cross-Sectional Time Series Poisson Regression with State Fixed Effects for Impact of Resources and Population Diversity on MSA Fragmentation

Obs	718
Groups	358
Obs/Group	2
Loglikelihood	-2303.6307
Wald(101)	2389.36
<i>X-sq</i>	P>0.001

General Governments	Coef.	Std. Err	z	P> z
MSA Population (100k)	-0.00348	0.00379	-0.92	0.359
Urban Areas population (100k)	0.02415	0.01345	1.80	0.073
Urban Cluster population (100k)	0.10701	0.05709	1.87	0.061
Moved Counties in last 5 years (100k)	0.08654	0.04292	2.02	0.044
Average City Expenditure (1b)	-2.99602	0.54210	-5.53	>0.001
Total State revenue to MSA (10m)	0.00236	0.00166	1.42	0.157
Total Federal revenue to MSA (10m)	0.00023	0.00037	0.63	0.531
Herfindahl Index (HHI) of federal revenue to MSA	-0.26827	0.07059	-3.80	>0.001
HHI of state revenue to MSA	0.02507	0.00883	2.84	>0.001
HHI of local revenue to MSA	-0.22344	0.06405	-3.49	>0.001
HHI of local intergovernment expenditure to MSA	-0.11100	0.04669	-2.38	0.017
Aggregate Income for the MSA (1b)	0.00072	0.00184	0.39	0.698
HHI of income concentration across counties	-0.03539	0.07568	-0.47	0.640
Household Median Income (10k)	0.01179	0.05364	0.22	0.826
Persons in Poverty (100k)	0.00324	0.06528	0.05	0.960
Poverty concentration factor	-0.67688	0.19309	-3.51	>0.001
Aggregate Housing Value (10b)	0.01464	0.01657	0.88	0.377
Median Housing Value (100k)	-0.18481	0.10455	-1.77	0.077
Housing Value Interquartile Range (100k)	0.13235	0.13164	1.01	0.315
Registered Not-for-Profits (1k)	0.00455	0.01581	0.29	0.773
Ratio of Majority to Minority Party voters	0.01742	0.02159	0.81	0.420
3rd Parties (1/0)	0.12367	0.04967	2.49	0.013

Table 4.5.8 Continued	Coef.	Std. Err	z	P> z
Statutory Home Rule Protection (2/1/0)	-0.43868	0.06527	-6.72	>0.001
Dillon's Rule Judiciary (1/0)	-2.39153	0.32450	-7.37	>0.001
Laws limiting Incorporation (1/0)	-0.03572	0.02473	-1.44	0.149
Laws limiting Annexation (1/0)	-0.60300	0.18075	-3.34	0.001
Annexation allowed voluntarily (1/0)	-0.03948	0.03449	-1.14	0.252
Annexation allowed by City Ordinance (1/0)	0.05065	0.03487	1.45	0.146
Annexation allowed with County Permission (1/0)	-0.14432	0.05906	-2.44	0.015
Annexation requires referendum (1/0)	-0.17633	0.04103	-4.30	>0.001
State requires Balanced Budget (1/0)	-0.15087	0.03476	-4.34	>0.001
State imposed Debt Limit (1/0)	0.05432	0.04941	1.10	0.272
Citizen Liberalism (state)	-0.01070	0.00290	-3.68	>0.001
Government Liberalism (state)	0.00190	0.00065	2.92	0.004
Total number of Democrats (100k)	-0.02060	0.02586	-0.80	0.426
HHI of Democrat concentration	-0.42957	0.60263	-0.71	0.476
HHI of Racial Diversity across MSA	-0.10490	0.22650	-0.46	0.643
HHI of White concentration across counties	-3.83477	1.70074	-2.25	0.024
HHI of Black concentration across counties	0.52457	0.25249	2.08	0.038
HHI of Hispanic concentration across counties	-0.50495	0.45291	-1.11	0.265
HHI of Language Diversity across MSA	4.98349	2.33275	2.14	0.033
HHI of English primary language concentration	0.75211	0.52692	1.43	0.153
HHI of Spanish primary language concentration	0.12547	0.27223	0.46	0.645
HHI of Religion Diversity across MSA	-1.04330	0.43412	-2.40	0.016
HHI of Mainline Protestant concentration	0.04978	0.28729	0.17	0.862
HHI of Evangelical Protestant concentration	0.27036	0.25225	1.07	0.284
HHI of Catholic concentration	-0.01485	0.02766	-0.54	0.591
HHI of Orthodox concentration	0.05234	0.09552	0.55	0.584
HHI of Other Religions concentration	0.04067	0.02382	1.71	0.088
Number of Counties	-1.92936	0.98181	-1.97	0.049
HHI of Employment Diversity across MSA	-0.57788	0.61561	-0.94	0.348
HHI of Payroll Diversity across MSA	0.09015	0.42626	0.21	0.832

Table 4.5.8 Continued	Coef.	Std. Err	z	P> z
Employment Concentration Factor	0.19214	0.38415	0.50	0.617
Payroll Concentration Factor	-0.23087	1.04587	-0.22	0.825
AK	-1.51732	0.33471	-4.53	>0.001
AR	-1.51784	0.29964	-5.07	>0.001
CA	-0.97197	0.27676	-3.51	>0.001
CO	-0.86110	0.30786	-2.80	0.005
CT	1.63381	0.34999	4.67	>0.001
DE	-1.09882	0.39291	-2.80	0.005
FL	-0.84790	0.27125	-3.13	0.002
GA	-2.04608	0.31542	-6.49	>0.001
HI	0.42178	1.12486	0.37	0.708
ID	0.14123	0.37268	0.38	0.705
IL	0.36083	0.26514	1.36	0.174
IN	-0.88573	0.28686	-3.09	0.002
IA	-0.69046	0.27964	-2.47	0.014
KS	-0.29916	0.33083	-0.90	0.366
KY	-1.25360	0.31308	-4.00	>0.001
LA	-1.53047	0.31493	-4.86	>0.001
ME	-0.23042	0.33996	-0.68	0.498
MD	-0.90758	0.29726	-3.05	0.002
MI	0.14320	0.26415	0.54	0.588
MN	0.60556	0.27194	2.23	0.026
MS	-2.18464	0.35196	-6.21	>0.001
MO	-0.62177	0.29241	-2.13	0.033
MT	-2.03588	0.41604	-4.89	>0.001
NE	1.35448	0.31720	4.27	>0.001
NV	0.47273	0.43216	1.09	0.274
NH	-1.01232	0.48509	-2.09	0.037
NJ	-0.62225	0.26546	-2.34	0.019
NM	-1.72682	0.36974	-4.67	>0.001
NY	0.14625	0.24829	0.59	0.556
NC	0.32205	0.19088	1.69	0.092
ND	0.58190	0.31898	1.82	0.068
OH	-0.05127	0.26353	-0.19	0.846
OK	-1.04053	0.31350	-3.32	0.001
OR	-1.12780	0.30513	-3.70	>0.001
PA	0.49635	0.25002	1.99	0.047
RI	-1.13645	0.50046	-2.27	0.023

Table 4.5.8 Continued	Coef.	Std. Err	z	P> z
SC	-1.31052	0.28963	-4.52	0.000
SD	-0.19933	0.36906	-0.54	>0.001
TN	-1.37166	0.29886	-4.59	>0.001
TX	-1.22060	0.26330	-4.64	0.107
UT	-0.56343	0.34991	-1.61	>0.001
VT	-2.11010	0.51831	-4.07	0.109
VA	-0.43402	0.27060	-1.60	0.002
WA	-0.89762	0.28536	-3.15	0.002
WV	0.89010	0.28525	3.12	0.810
WI	-0.06289	0.26150	-0.24	>0.001
WY	-1.81269	0.43919	-4.13	>0.001
_cons	5.82240	0.95404	6.10	>0.001
Random Effect				
/lnalpha	-2.01095	0.103837		
alpha	0.133861	0.0139		

Table 4.5.9 Supplemental Poisson Regression Including Private Sector Entrepreneurship with 2002 Data Only

N=358
chi2(91)=13748
P>Chi2>0.001
Loglikelihood=-1256.3687

General Governments	Coef.	Std. Err	z	P> z
MSA Population (100k)	-0.02843	0.00472	-6.03	>0.001
Urban Areas population (100k)	-0.05625	0.02148	-2.62	0.009
Urban Cluster population (100k)	-0.00920	0.05865	-0.16	0.875
Moved Counties in last 5 years (100k)	0.05311	0.03545	1.5	0.134
Average City Expenditure (1b)	-3.02651	0.43820	-6.91	>0.001
Total State revenue to MSA (10m)	0.01161	0.00245	4.74	>0.001
Total Federal revenue to MSA (10m)	-0.00259	0.00042	-6.16	>0.001
Herfindahl Index (HHI) of federal revenue to MSA	-0.22667	0.07957	-2.85	0.004
HHI of state revenue to MSA	-0.43770	0.11158	-3.92	>0.001
HHI of local revenue to MSA	-0.42143	0.06916	-6.09	>0.001
HHI of local intergovernment expenditure to MSA	0.05593	0.04772	1.17	0.241
Aggregate Income for the MSA (1b)	0.00544	0.00176	3.09	0.002
HHI of income concentration across counties	-0.69029	0.08926	-7.73	>0.001
Household Median Income (10k)	0.03875	0.04244	0.91	0.361
Persons in Poverty (100k)	0.32665	0.06885	4.74	>0.001
Poverty concentration factor	-0.63655	0.13792	-4.62	>0.001
Aggregate Housing Value (10b)	0.08179	0.02037	4.02	>0.001
Median Housing Value (100k)	-0.28867	0.12792	-2.26	0.024
Housing Value Interquartile Range (100k)	0.34296	0.12413	2.76	0.006
Registered Not-for-Profits (1k)	0.08919	0.01408	6.34	>0.001
Business Births	0.07226	0.03378	2.14	0.032
Business Deaths	-0.05271	0.03260	-1.62	0.106
Ratio of Majority to Minority Party voters	-0.07803	0.03054	-2.55	0.011
3rd Parties (1/0)	-0.46763	0.20222	-2.31	0.021
Statutory Home Rule Protection (2/1/0)	-0.04957	0.10561	-0.47	0.639
Dillon's Rule Judiciary (1/0)	1.01425	0.19163	5.29	>0.001
Laws limiting Incorporation (1/0)	0.04340	0.42617	0.1	0.919
Laws limiting Annexation (1/0)	0.69687	0.66309	1.05	0.293
Annexation allowed voluntarily (1/0)	-0.84079	0.46161	-1.82	0.069

Table 4.5.9 Continued	Coef.	Std. Err	z	P> z
Annexation allowed by City Ordinance (1/0)	-0.62706	0.19822	-3.16	0.002
Annexation allowed with County Permission (1/0)	0.44938	0.21667	2.07	0.038
Annexation requires referendum (1/0)	-0.35843	0.19391	-1.85	0.065
State requires Balanced Budget (1/0)	-0.56391	0.11974	-4.71	>0.001
State imposed Debt Limit (1/0)	0.90701	0.45291	2	0.045
Citizen Liberalism (state)	0.03404	0.01796	1.9	0.058
Government Liberalism (state)	-0.02696	0.00692	-3.9	>0.001
Total number of Democrats (100k)	-0.03661	0.02628	-1.39	0.164
HHI of Democrat concentration	-0.68575	0.56165	-1.22	0.222
HHI of Racial Diversity across MSA	-0.30776	0.17025	-1.81	0.071
HHI of White concentration across counties	-7.69485	1.09366	-7.04	>0.001
HHI of Black concentration across counties	0.01932	0.16382	0.12	0.906
HHI of Hispanic concentration across counties	1.21648	0.52810	2.3	0.021
HHI of Language Diversity across MSA	10.91754	1.60290	6.81	>0.001
HHI of English primary language concentration	-0.81941	0.59464	-1.38	0.168
HHI of Spanish primary language concentration	0.01421	0.20993	0.07	0.946
HHI of Religion Diversity across MSA	-1.01411	0.31022	-3.27	0.001
HHI of Mainline Protestant concentration	-0.42448	0.31683	-1.34	0.18
HHI of Evangelical Protestant concentration	0.35339	0.20212	1.75	0.08
HHI of Catholic concentration	0.09474	0.03788	2.5	0.012
HHI of Orthodox concentration	0.25876	0.13186	1.96	0.05
HHI of Other Religions concentration	0.00218	0.01479	0.15	0.883
Number of Counties	-1.89182	0.84203	-2.25	0.025
HHI of Employment Diversity across MSA	-0.71068	0.59822	-1.19	0.235
HHI of Payroll Diversity across MSA	-0.11850	0.41628	-0.28	0.776
Employment Concentration Factor	0.13169	0.37198	0.35	0.723
AR	-0.39435	0.30343	-1.3	0.194
CA	0.14655	0.24222	0.61	0.545
CO	-1.03413	0.29809	-3.47	0.001
FL	0.12799	0.17322	0.74	0.46
HI	1.83554	1.18999	1.54	0.123
ID	-1.59693	0.69987	-2.28	0.023
IN	0.95759	0.15772	6.07	>0.001

Table 4.5.9 Continued	Coef.	Std. Err	z	P> z
IA	-0.01329	0.20751	-0.06	0.949
KS	0.77622	0.59697	1.3	0.194
KY	0.91464	0.67070	1.36	0.173
LA	-0.15539	0.66919	-0.23	0.816
MA	-0.33492	0.58815	-0.57	0.569
MI	0.62022	0.23213	2.67	0.008
MN	2.77393	0.49383	5.62	>0.001
MS	0.27295	0.35768	0.76	0.445
MO	0.14385	0.57232	0.25	0.802
MT	-1.98309	0.47170	-4.2	>0.001
NV	-0.53856	0.91617	-0.59	0.557
NJ	-0.74770	0.64504	-1.16	0.246
NY	2.71656	0.54706	4.97	>0.001
NC	-0.22699	0.27423	-0.83	0.408
ND	-0.34681	0.38693	-0.9	0.37
OH	0.83275	0.60368	1.38	0.168
OK	0.37837	0.34704	1.09	0.276
OR	-0.35007	0.35620	-0.98	0.326
RI	0.42262	0.35292	1.2	0.231
SC	0.54832	0.28281	1.94	0.053
SD	0.20401	0.32587	0.63	0.531
TN	0.51258	0.45287	1.13	0.258
TX	0.65015	0.34760	1.87	0.061
UT	0.29686	0.53653	0.55	0.58
VT	-2.53170	0.32265	-7.85	>0.001
WA	1.78729	0.47960	3.73	>0.001
WV	-2.56389	0.37120	-6.91	>0.001
WI	0.20730	0.35060	0.59	0.554
WY	-1.48086	0.71621	-2.07	0.039
_cons	2.32722	1.35779	1.71	0.087

4.6 Conclusions on the Fragmentation of MSAs

This analysis of MSA fragmentation across the two periods of 1992 and 2002 shows three important things. First city formation depends on the resources available to the organizers of the new city; second, political and financial issues are the main population determinants of fragmented MSAs; and, third the creation of new cities is done one city at a time without concern for other organization.

The evidence for the first conclusion is that the availability of money –not just its presence, was a requirement for city formation, and that limitations on city powers – including limitations on getting money in the form of debt limits and balanced budget requirements –and the high cost of cities were all inhibitors of MSA fragmentation. This is consistent with the theory that entrepreneurs organize cities like they organize interest groups. If the entrepreneur cannot get the necessary resources to operate the group and achieve its political ends, he or she will be unable to find customers or residents. Even if those resources are available, if the cost is too high, customers or residents will still not buy into the new organization. The supplemental analysis on 2002 data also suggests that the entrepreneur is an important component in this process, and that having more of them is a resource itself in forming new urban organizations.

The evidence for the second conclusion is that only liberalism and poverty mattered consistently of any of the population diversity measures. Race, ethnicity, language, religion, and industry were all of small or dubious effect, but liberalism mattered and poverty mattered. This suggest that the formation of cities is primarily about political power and economic interest (transfer payments would be the likely reason, but that is beyond this analysis as well). This makes sense in hindsight. Cities

specialize in making policy and are political bodies, and much of government is about who gets to spend the money on what. Everything else is secondary –though African Americans seem to have distinct preferences from white Americans.

The final conclusion comes not from the results of the model, but from the discovery that the data are Poisson. Poisson data only respond to deviations from the mean. Variance and over-dispersion –characteristics of negative-binomial distributions – do not affect Poisson. Whether there are six cities has no impact on whether there will be a seventh. The number of cities depends on the characteristics of the population and state and their differences from the mean. In other words, the population decides how many cities to have based on its preferences and resources, not how many cities it already has.

This conclusion is bolstered by the finding that preferences and resources do not impact population fragmentation, even though both definitions of fragmentation are correlated above $|.4|$.³⁹ These resources and preferences are driving the number of general governments, but not by causing the population to fragment.

Finally, there are some intriguing possibilities for further research. Most tantalizing is why the median housing value is negative. Is this the result of agglomeration and amenity as might be suggested by Glaeser, or is it a measure that the wealthy do not feel the need to build separate cities, or is it nothing but random noise? Second, what influence does private entrepreneurship have on the number of cities? Third, do all types of governments follow this pattern, or only general governments? These are projects to be pursued in improving the state of knowledge about urban organization in the United States.

³⁹ -.4343. The negative is because higher numbers of general governments are more fragmentation, but a higher HHI of population fragmentation is more consolidated.

Chapter 5

Causes of Fragmentation in the Rest of the United States

5.1 Introduction

In the previous chapter I analyzed urban fragmentation in the metropolitan area. This was in keeping with the existing literature on urban fragmentation and consolidation and also allowed consideration of multi-county MSAs to test the effect of population sorting by race, industry mix, and poverty on urban fragmentation. As other interest groups; resources, ideology, and partisanship were causes for the initial fragmentation of the population. Based on the Poisson distribution of the data, the best explanation is that the chosen number of cities and level of urban fragmentation is determined by the population taking multiple factors into account.

However, interest group theories are expected to work outside the metropolis, and so an interest group theory of urban fragmentation should also work in non-MSA counties. That analysis is the subject of this chapter. While substantially the same as the analysis of chapter 4, there are changes necessitated by the different unit of analysis. Because non-MSA counties lack groupings like MSA counties, there are no multi-county MSA counties. As the data are still most often aggregated at county level, none of the sorting variables can be carried over to this analysis. In turn, the sorting factor variables also cannot be carried over.

The data, however, remain Poisson, and the theory remains the same. Non-MSA counties should behave like their MSA counterparts, with more diverse populations choosing more fragmentation as constrained by their resources. Predicting from the

MSA analysis, the types of diversity that should matter are also predictable: economic, political, and ideological. Nonetheless, there are theoretical reasons why there may be differences across the analyses.

First, some assumptions built into the model may not apply to rural areas, and are not accounted for in the model. Entrepreneurial interest group theories rely on a market for organizations. Entrepreneurs expect to make a profit off their organization, and their efficiency is driven by trying to under-price their competitors to attract residents. Furthermore, residents have to be able to move in order for a new entrepreneur to attract new residents to his or her organization. These assumptions may not be true in non-MSA areas. The lack of people who can move, the distances that must be traveled, and the increased power of county governments (because counties provide more services in rural areas) could all thwart the organizer of a new city. These are also all very difficult to measure –and for this analysis are not measured. These problems might also be surmountable and compensated for by the lack of existing governments. A developer in a dense MSA may have to locate his or her new city some distance from the population center, but in the less developed non-MSA area, the developer can locate much closer – diminishing the need for lots of movers and reducing the distance that must be traveled. The ultimate defense of keeping the same model, however, is that non-MSA does not mean “rural,” and that many of these counties are still populous and diverse enough for entrepreneurs to work them. This is addressed in a subsequent section.

Second, the variables that most influenced MSA fragmentation may be different from the ones influencing non-MSA populations. The different levels of racial and cultural diversity, income, housing values, and urbanization turn the non-MSA counties

into a different market. Entrepreneurs will change their organization plans to match the new clientele.

The rest of this chapter is in 5 sections. The second section discusses the differences in the dataset between chapter 4 and chapter 5 and reprises the predicted results of the analysis. Section three presents some of the summary statistics for the non-MSA counties to describe what a typical non-MSA county is like, and how such counties differ from their typical MSA counterparts. Section four analyzes the data and adds supplemental analyses to check for robustness and other interpretations of the results. Finally, the chapter ends with non-MSA specific conclusions.

5.2 Differences Between the MSA and Non-MSA Datasets and Theories

While theories of urban organization distinguish between metropolitan settings and other settings, interest group theories do not. Therefore, the same theory which explains urban fragmentation in the metropolis should also explain urban fragmentation outside the metropolis. However, while the metropolitan setting provides the theoretically desired market for urban organization –the non MSA county, which is defined by its lack of population and lack of contact with other populations, does not. Non-MSA counties may lack some catalyst for organization that is attached to their low number of residents. For example, small cities are expensive cities because they cannot spread their fixed costs over many residents. Low population areas may be more consolidated simply, despite their diversity, because there are not enough people to support new cities and because new cities must provide all the services their residents desire. As a result, racial, economic, and political variables may appear to have no effect.

Where this tipping point is would be the subject of another analysis –here I use the Census definition of a Metropolitan Statistical Area as the divide between places where there are large populations in a small area which could allow residents to commute around.

This does not appear in the actual data. Non-MSA counties have fragmentation ranging from 0 jurisdictions (the county, as the unit of analysis, is not counted) to 82 jurisdictions –but the possibility justified splitting the MSA and non-MSA analyses. Further, though the theory predicts the same in both MSA and non-MSA contexts, it is not a required assumption for the models to work, and so can be tested.

While the data are drawn from the same source, there are some differences. First, because the unit of analysis for this study is the county, there are no county-sorting variables. Without more fine-grained analysis of the county and community borders, there is no way to measure sorting within the county, so all that can be measured is diversity. The assumption that diversity leads to sorting is possible, but it can be relaxed to simply interpret the results of diversity variables as the result of “living in the same county with different people” rather than the results of having multiple atomized communities.

Second, all measures which were based on the MSA are now based on the county. Average expenditure in the MSA is now average expenditure in the county; concentration of federal money in the MSA is now concentration of federal money in the county; and so on. The interpretations are the same, but the borders are different. The three factorized indices for poverty, payroll, and employment concentration are also gone.

There is a third difference, but it is special. Many of the variables in this analysis are on a much smaller scale. What were millions of dollars in the MSA are only hundreds of thousands in the far-flung counties. However, while rescaling the variables would benefit interpretation of this particular chapter, it makes comparisons between the two chapters difficult. As the magnitudes of the difference are not so large as to add an unseemly number of zeros to the means or coefficients, the same units were kept. Housing values are still reported in hundreds of thousands of 2002 dollars, even though the mean housing value median is just under \$65,000 .

5.2.2 A Model of Non-Metropolitan Urban Fragmentation

While the possibility that something could differ between metropolitan and non-metropolitan areas justifies doing separate analysis, the theory does not actually predict differences. As a result, the predicted effects of the various categories of variables are the same here as in the preceding chapter. The MSA analysis revealed several variables that behaved contrary to the theory (language diversity, for example) but the theoretical predictions are maintained –first because it is possible things are different in MSAs and non-MSAs, and second because this serves as an opportunity to test the theory on a different dataset. If the results conflict or agree, this is interesting and useful information entirely separate from whether it predicted ahead of time.⁴⁰

⁴⁰ In other words, the “benefit” of changing my prediction between chapters is that I would get more predictions “right” if there really is no difference between MSA and non-MSA datasets. Setting aside that the point of this analysis is that MSA and non-MSA may differ in unmeasured ways, this is at best a bragging rights benefit. If the coefficients agree between the analyses, this reveals a possible flaw in the theory to be addressed in further research. If the coefficients conflict, this points to a possible difference between MSA and non-MSA populations. Both of those options advance knowledge –and I can still brag in the latter case.

As before, the predicted outcomes are based on a theory of entrepreneurs, preferences, and resources. With more people come different preferences that an entrepreneur can tap to form new cities and earn a profit. When those preferences are linked to personal characteristics like race, language, and status they can be measured. The more diverse the population, the more preferences there are, and the more opportunities there are for entrepreneurs to found additional cities. As resources –again meaning primarily tax base –increase so do the number of cities that can be founded. If the state limits city powers, the city is less useful to the residents and has fewer resources.

The controls also have not changed. Movers are included because they can change the population characteristics and because if movers correlates with poverty or race, the omitted variable bias would affect the interpretation of those measured diversity types. Poor people may be attracted to rich and consolidated areas because of the potential for redistribution and cheap government –but a large number of poor can also cause fragmentation as the rich try to escape the pull on their tax dollars, and so the effect of poor people is ambiguous (but still thought to be more likely to fragment the county). Democrats and liberals are still expected to prefer consolidation, but outvoted political minorities (either third parties or consistently beaten second parties) should form additional cities. More entrepreneurs should be associated with more cities. Nice amenities –showing up in housing prices –should reduce the number of cities (because it is hard to compete with a nice amenity). Sorting, however, does not appear in this model because the data are not available. It is assumed, but not provable –and that assumption can be relaxed.

The data are from the same dataset as used in the previous chapter, and so details of the dataset can be referred to there. Again, all the sorting variables required multiple counties and so are not present in this dataset. The only other difference is that these counties are not part of any OMB or Census Bureau defined Metropolitan Standard Area.

5.3 The Typical Non-MSA County

If the traditional error when discussing MSAs is to envision the enormous metropolises of Chicago or New York, the easy error when discussing non-MSA areas would be to envision the empty-quarter of the country –places like Loving, County Texas, population 67 in 2002. Loving, like New York, is an unusual place.⁴¹

Table 5.3.1 Select Measures of Non-MSA County Size

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Population (100k)	0.231	0.162	0.221	0.001	1.86742
Aggregate Income (1b, 2002 dollars)	0.985	0.033	5.188	0	192.9
Median House Value (100k, 2002 dollars)	0.649	0.581	0.334	0.000	7.5

Again, the data are right skewed and leptokurtic, but with their peaks much further to the left than in MSAs. This is true by definition for population (population centers with 100,000 people are part of the definition of MSA), though not of aggregate income or housing value. Where the mean MSA had 600,000 residents, the average non-MSA county has only 23,000. The MSA's \$2 billion in aggregate income is only \$985

⁴¹ Loving is the smallest county in the United States, and so it makes a good example, but it is also missing from the 2002-period of the data due to missing identification data, so more extensive discussion of the county is not possible.

million in non-MSA, and average median house value drops from \$100,000 to just under \$65,000. The skewness, however, suggests using medians to measure “typical.” The median county has 16,000 residents, \$33 million in aggregate income, and median median housing values of \$58,000 –again, much lower than the MSA levels. Across the two periods, there are slight increases in population and median house value from 1992 to 2002, but there is a massive increase in aggregate income from a mean of \$6.1 million to \$1.9 billion in the same period.⁴²

Table 5.3.2 Non-MSA Counties Which Are Close to Average

County	State	Year	Population (100k)	Income (Billions)	Median Housing (100k)
Marengo	Alabama	2002	0.22539	0.5653	0.659
McNairy	Tennessee	2002	0.24653	0.7456	0.614
Union	Mississippi	2002	0.25362	0.4175	0.683
Meriwether	Georgia	2002	0.22534	1.276	0.663
Shelby	Illinois	2002	0.22893	0.5747	0.666
Clark	Arkansas	2002	0.23546	1.54	0.679

Much like the MSAs, no county is exactly average on all three measures, however unlike MSAs, there are many more counties within a quarter standard deviation, and even an unwieldy number within 15%. Nonetheless, there are six counties within 11% of a standard deviation. Notably, all but one are east of the Mississippi and range from Illinois in the north to Tennessee in the middle to Alabama, Georgia, and Mississippi in

⁴² \$800 thousand to \$390 million in the median case. This did trigger an investigation into whether there was an error in the dataset –but after recreating the variable from scratch all summary statistics were the same –so this massive increase in income, despite a much more modest increase in population and housing value is presumably real. The increase –while proportionately much larger than the 3 billion to 4 billion increase for MSAs –is still absolutely smaller than the MSA growth in the same period. This might reflect economic development in non-MSA counties, missing data in 2002, or richer people moving out of MSAs.

the south. Also unlike the MSAs, they are all from 2002, likely because of the explosion in income between 1992 and 2002.

Table 5.3.3 Five Counties Which are Close to Average Within Their Periods⁴³

County	State	Population (100k)	Income (Billions)	Median Housing (100k)
1992				
Paulding	Ohio	0.205	0.006	0.542
Uintah	Utah	0.222	0.004	0.563
Montgomery	North Carolina	0.233	0.004	0.557
Assumption	Louisiana	0.228	0.003	0.577
Panola	Texas	0.220	0.004	0.550
2002				
Gage	Nebraska	0.230	1.063	0.686
Fayette	Texas	0.218	2.898	0.716
Polk	Missouri	0.270	2.309	0.770
Clark	Arkansas	0.235	1.540	0.679
Montgomery	North Carolina	0.268	1.112	0.772

Table 5.3.4 Five Counties Which are Close to Median Within Their Periods

County	State	Population (100k)	Income (Billions)	Median Housing (100k)
1992				
Iowa	Iowa	0.146	0.0003	0.553
Arenac	Michigan	0.149	0.0011	0.539
Brooks	Georgia	0.154	0.0017	0.548
Crawford	Wisconsin	0.159	0.0001	0.549
Nottoway	Virginia	0.150	0.0002	0.553
2002				
Richland	North Dakota	0.180	0.182	0.672
Grayson	Virginia	0.179	0.250	0.658
Benton	Tennessee	0.165	0.331	0.670
Osage	Kansas	0.167	0.070	0.676
Mercer	Illinois	0.170	0.364	0.685

⁴³ Worth mentioning because it was an example in chapter 4: Decatur County, Indiana was the 6th closest county to average in 1992 –being slightly poorer than Assumption County, Louisiana.

Typical non-MSA counties, as these tables show, are much smaller than MSAs – roughly a twentieth as big in population. They are poorer, having much less aggregate income even after the 10 year growth and they have less valuable houses –though highest housing values are within \$100,000 of the MSA values. They are not, however, the middle of nowhere with no resources and no population.

Whether by means or medians, these counties are small but not deserted, and should have adequate people and resources to entice entrepreneurs to organize local governments within their borders. The level of fragmentation and the drivers of fragmentation in these smaller jurisdictions are the subjects of the next section.

5.4 Analysis of Non-Metropolitan County Fragmentation by Entrepreneurial Use of Population Diversity, Local Resources, and State Laws

The analysis of the non-MSA counties proceeded as in chapter 4, starting with cross-sectional negative binomial regression. Once again, the model did not converge, and once shifted to a cross-sectional Poisson regression model the likelihood function converged to the same likelihood which failed under negative binomial. The Poisson regression had one fewer parameter but gained the same likelihood, indicating via likelihood ratio test that that the Poisson specification was the correct one.

Lacking the sorting variables, the collinearity problems of the model in chapter 4 are absent, so once Poisson was determined to be the correct model, it was ready for specification. Table 5.4.1 shows the vector of variables, their means, standard deviations, hypothesized signs, and the theoretical reason for them. Poisson regression is an MLE estimate performed by a numerical process with the requirement that the dependent

variable be distributed Poisson. Given that assumption, the computer makes minor adjustments to the parameters until the likelihood function cannot be increased further.

The data are then used to estimate the parameters of the following model:

$$\ln[E[Y_{it}|x_{it}]] = x'_{it}\beta + [\alpha_i + \varepsilon_{it}]$$

Where:

Y = the number of general governments

e = Euler's constant

x = a vector of explanatory variables including population diversity and resources

β = the coefficient weights to be estimated

α = the random effect variation

ε = error

i is the identifier for a county, and

t is the identifier for the period.

The model uses random effects on counties to preserve degrees of freedom and to allow the several more fixed effects to work within the numerical calculation. This requires assuming the expected value of x_{it} is zero, or that the county characteristics measured do not correlate with the unmeasured characteristics of the counties. This is justified because the county borders are determined by states rather than their residents, and arbitrarily. The other assumption required is that Y be distributed Poisson, which is justified by the likelihood ratio tests already described. The estimation procedure is done via MLE and the reported coefficients are deviations from the mean, just as in OLS.

Table 5.4.1 Summary of Model Parameters for Cross-Sectional Time Series Poisson Regression (2 periods, N=4549)

Variable	Mean	Std. Dev.	Prediction	Theory
General Governments	9.08419	10.79155	DV	
County Population (100k)	0.23125	0.22130	+	People a resource, more diverse preferences
Urban Areas population (100k)	0.00718	0.06229	+	People a resource, more diverse preferences
Urban Cluster population (100k)	0.08212	0.11597	+	People a resource, more diverse preferences
Moved Counties in last 5 years (100k)	0.04139	0.05121	?	Control variable
Average City Expenditure (1b)	0.00651	0.01314	-	Expensive governments are harder to organize
Total State revenue to County (10m)	0.82436	1.52311	+	Government funds are a resource
Total federal revenue to County (10m)	0.08059	0.20846	+	Government funds are a resource
Herfindahl Index (HHI) of federal revenue to County	0.63434	0.38384	-	Concentration indicates not all have access
HHI of state revenue to County	0.65688	0.23228	-	Concentration indicates not all have access
HHI of local revenue to County	0.59736	0.33390	-	Vibrant market for local goods can support cities
HHI of local intergovernment expenditure to County	0.56942	0.43900	-	Vibrant market for local goods can support cities
Aggregate Income for the County (1b)	0.98487	5.18775	+	Income Tax base a resource
Household Median Income (10k)	3.00904	0.65411	+	Wealthier residents can afford more cities
Persons in Poverty (100k)	0.03330	0.03254	+	Wealthy try to avoid the poor
Aggregate Housing Value (10b)	0.03813	0.05794	+	Property base is a resource
Median Housing Value (100k)	0.64912	0.33396	?	Control for local amenities
Housing Value Interquartile Range (100k)	0.49810	0.24827	+	Gap of rich to poor encourages new cities
Registered Not-for-Profits (1k)	0.12182	0.12278	+	NFP entrepreneurs can become city founders
Ratio of Majority to Minority Party voters	1.69052	0.82676	+	Being outvoted an incentive to make a city
3rd Parties (1/0)	0.07298	0.26014	+	Being outvoted an incentive to make a city
Statutory Home Rule Protection (2/1/0)	1.76852	0.53490	+	Protects city interests

Table 5.4.1 continued	Mean	Std. Dev.	Prediction	Theory
Dillon's Rule Judiciary (1/0)	0.15960	0.36627	-	Restricts city power
Laws limiting Incorporation (1/0)	0.97780	0.52818	-	Restricts city power
Laws limiting Annexation (1/0)	0.98813	0.10832	-	Restricts city power
Annexation allowed voluntarily (1/0)	0.76852	0.42182	-	Restricts city power
Annexation allowed by City Ordinance (1/0)	0.60035	0.48988	-	Restricts city power
Annexation allowed with County Permission (1/0)	0.18290	0.38662	-	Restricts city power
Annexation requires referendum (1/0)	0.38074	0.48562	-	Restricts city power
State requires Balanced Budget (1/0)	0.43966	0.49640	-	Restricts city power
State imposed Debt Limit (1/0)	0.80919	0.39298	-	Restricts city power
Citizen Liberalism (state)	40.94331	10.96823	-	Liberals prefer consolidation
Government Liberalism (state)	40.95848	22.79506	-	Liberals prefer consolidation
Total number of Democrats (100k)	0.03497	0.04298	-	Democrats prefer consolidation
HHI of Racial Diversity across County	0.78424	0.19798	-	Homogenous population has homogenous preferences
HHI of Language Diversity across County	0.77464	0.10186	-	Homogenous population has homogenous preferences
HHI of Religion Diversity across County	0.51912	0.16367	-	Homogenous population has homogenous preferences
HHI of Employment Diversity across County	0.29024	0.12411	-	Homogenous population has homogenous preferences
HHI of Payroll Diversity across County	0.31380	0.14314	-	Homogenous population has homogenous preferences
State Fixed Effects				Control for state time-invariant characteristics
County Random Effect				Grouping for the Panel. Random effect chosen to preserve degrees of freedom and because county borders are arbitrary and not chosen by residents.

5.4.2 Summary of Results

Due to the size of the model, the different sections are reported separately, as they were in chapter 4. Table 5.4.2 shows the descriptive and test statistics of the model. The 4548 non-MSA counties divide across the periods with 2291 counties in 1992 and 2258 in 2002. The discrepancy comes from variation in responses to the Census of Governments and, where identifiable, tend to be counties with small populations like Loving, Texas and Kalawao, Hawaii. The fixed effect for Delaware was dropped as only one county (Sussex) in Delaware was included in the dataset, and so that county perfectly predicted its fixed effect. New Jersey has no non-MSA counties. The model's results are significantly different from a null model of all parameters=0 at the .1% alpha level.

Table 5.4.2 Poisson Regression Summary and Tests

Obs	4548
Groups	2293
Obs/Group	1 to 2
Loglikelihood	-10634.3
Wald(85)	9432.38
X-sq	<0.001

The likelihood function for the non-MSA has a lower likelihood than the MSA data. A direct comparison is not possible because the two analyses use different datasets and are not nested in each other. All that can be said is that the non-MSA data probability has a lower peak probability. The probability is not zero and the Wald test for all-zero parameters shows that the results are distinct from zero.

Despite the lower peak probability, on the measure of returning significant results for the variables of interest, the non-MSA data perform better, but again the models are not the same. The MSA data has the sorting variables which soak up additional variation. Within this model, the theory of urban fragmentation and organization is better supported than in the MSA model on all counts. Resources and population diversity both account for fragmentation as expected. There are, however, interesting anomalies which differ either from the theory or from the MSA data results. Large tax bases in income and property are associated with more consolidation –even controlling for urban population. Home rule statutes continue to have the opposite sign of what was predicted, but a Dillon’s Rule judiciary which was insignificant and signed as expected in the MSA analysis is significant and oppositely signed in the non-MSA analysis. Population, which was insignificant and negative in the MSA analysis, is a significant positive factor in non-MSA counties. Finally, there are unusual findings in the population diversity. Where racial diversity had no significant effect in MSAs –but was slightly negative as expected –in non-MSA counties racial diversity is significant and positive, meaning more socially homogenous counties are also more fragmented.

5.4.3 Results for Measures of Finance and Urban Population

Unlike in the MSA analysis, in the non-MSA county population is significant. Total county population matters so much that adding just under the 50,000 that would turn the county into an MSA in its own right (if they all went into a single jurisdiction) would add nearly an entire new general government to the prediction. Also unlike in MSAs, urban population also has a significant impact –but it is negative. Where new

urbanites were expected to desire new cities to suit their needs, in the non-MSA counties new urbanites seek out consolidated urban areas.

Table 5.4.3 Results for Measures of Finance and Urban Population

General Governments	Coef.	Std. Err.	P> z	Significant	Predict/Right
County Population (100k)	1.78078	0.22464	<0.001	**	+ yes
Urban Areas population (100k)	-0.56056	0.20100	0.005	*	+no
Urban Cluster population (100k)	-0.84864	0.18013	<0.001	**	+no
Moved Counties in last 5 years (100k)	-0.57541	0.53528	0.282		?
Average City Expenditure (1b)	-35.15892	2.09530	<0.001	**	-yes
Total State revenue to county (10m)	0.07596	0.01096	<0.001	**	+ yes
Total federal revenue to county (10m)	0.05042	0.04262	0.237		+ yes
Herfindahl Index (HHI) of federal revenue to MSA	0.00188	0.01904	0.921		-no
HHI of state revenue to county	-0.80776	0.04811	<0.001	**	-yes
HHI of local revenue to county	-0.03596	0.02386	0.132		-yes
HHI of local intergovernment expenditure to county	0.04264	0.01890	0.024	*	-no

+ significant at 90% CI

* significant at 95% CI

** significant at 99.9% CI

Vastly increasing the number of people living in dense urban areas or less dense urban clusters –suburbs, for example –rather than in rural areas reduces the fragmentation of adding to the population by between 30 and 50%. Intergovernmental resources behave much closer to theory and the MSA analysis. In general, intergovernmental transfers are associated with fragmentation as if the money was a resource necessary for government organization. Also as theorized, if the intergovernmental transfers are concentrated in few governments, the resource is not available to other governments which either never form or starve from lack of resources. Federal revenue concentration (the Herfindahl

Index) is positive and not significant, which is contrary to theory. The other interesting result is that intergovernmental spending and receiving at the local level has reversed signs. The receipt of local money is insignificant but signed negatively. If there are few governments receiving payments from their peers there will be fewer governments – much like one massive company could starve its competitors for business. There is, however, a small, significant, and positive effect of intergovernmental expenditure. If local intergovernmental expenditure were consolidated in a single jurisdiction, the average number of jurisdictions would increase by .04.

As in the MSA analysis, the dominant variable in this section is the average cost of government. As expected, it is negative, indicating that higher average cost government –driven either by preferences or cost of services –leads to fewer governments. The -.35 estimated coefficient is somewhat misleading, however, as the largest average expenditure is only .236 (236k 2002 dollars). In the most extreme case, that would be 8 fewer expected general governments.

Finally, movers –which is still a control variable –is worth noting not because it is significant (it is not), but because it has the opposite sign from the MSA analysis.

5.4.4 Results for Measures of Economic, Not-for-Profit, and Political Organization

The results for socio-economic and political variables are mixed. While there is good evidence that increases in the number of poor people and greater wealth inequality lead to fragmentation, and that non-for-profit organizers and third parties can organize for additional cities, the financial resources expected to fund this fragmentation are signed negatively. Wealthy counties are consolidated counties despite having the financial

ability to support multiple cities. Median housing values are significant and negative, giving some credence to the amenity rather than type 1 error interpretation in Chapter 4.

Table 5.4.4 Results for Measures of Economic, Not-for-Profit and Politics

General Governments	Coef.	Std. Err.	P> z	Significant	Predict/Right
Aggregate Income for the county (1b)	-0.00080	0.00156	0.608		+no
Household Median Income (10k)	-0.07519	0.03030	0.013	*	+no
Persons in Poverty (100k)	0.72008	0.87185	0.409		+yes
Aggregate Housing Value (10b)	-0.99703	0.45912	0.030	*	+no
Median Housing Value (100k)	-0.26026	0.09681	0.007	*	?
Housing Value Interquartile Range (100k)	0.18213	0.09134	0.046	*	+yes
Registered Not-for-Profits (1k)	0.56675	0.19099	0.003	*	+yes
Ratio of Majority to Minority Party voters	0.01873	0.01212	0.122		+yes
3rd Parties (1/0)	0.18008	0.03474	<0.001	**	+yes

+ significant at 90% CI

* significant at 95% CI

** significant at 99.9% CI

5.4.5 Results for Measures of State Laws, State Liberalism, and Democrats

The results for measures of state laws, liberalism, and Democrats are more consistent with the proposed theory. Limits on annexation ability and financial powers are generally negative as expected. Lacking the resources which allow a city to be useful, there is less reason to organize one. The unexpected results are also generally the same as in the MSA analysis. Statutory and constitutional home rule protection has a negative sign –indicating fewer general governments. The power to annex via city ordinance is positive again, and this time significant, bolstering the counter-case from the metropolitan analysis that city-ordinance annexation is a desirable power of local government and not a restriction on local government powers. Statutory debt limits are

positive and significant. Citizen liberalism is signed as expected (just as in the MSA analysis), but not significant.

The unusual results are in Dillon's Rule judiciaries, government liberalism, and the number of Democrats. None of these variables is significant –perhaps indicating that liberalism, Democrats, and courts are not terribly important away from the urban centers. Government liberalism and the number of Democrats are both signed counter to expectation, as is the Dillon's Rule judiciary. Dillon's rule is also signed differently from the MSA analysis which raises an interesting question: why would a state-wide law have different effects outside the MSA. This is a subject for future research.

Table 5.4.5 Results for Measures of State Laws, State Liberalism, and Democrats

General Governments	Coef.	Std. Err.	P> z	Significant	Predict/Right
Statutory Home Rule Protection (2/1/0)	-0.20691	0.04934	<0.001	**	+no
Dillon's Rule Judiciary (1/0)	0.16420	0.42984	0.702		-no
Laws limiting Incorporation (1/0)	-0.00278	0.01536	0.856		-yes
Laws limiting Annexation (1/0)	-0.39079	0.13118	0.003	*	-yes
Annexation allowed voluntarily (1/0)	-0.04257	0.02470	0.085	+	-yes
Annexation allowed by City Ordinance (1/0)	0.07543	0.02752	0.006	*	-no
Annexation allowed with County Permission (1/0)	-0.17873	0.04066	<0.001	**	-yes
Annexation requires referendum (1/0)	-0.30080	0.02874	<0.001	**	-yes
State requires Balanced Budget (1/0)	-0.18604	0.02072	<0.001	**	-yes
State imposed Debt Limit (1/0)	0.18355	0.03068	<0.001	**	-no
Citizen Liberalism (state)	-0.00132	0.00183	0.471		-yes
Government Liberalism (state)	0.00067	0.00050	0.181		-no
Total number of Democrats (100k)	0.08874	0.17215	0.606		-no

+ significant at 90% CI

* significant at 95% CI

** significant at 99.9% CI

5.4.6 Results for Measures of Population and Industry Diversity

Because this chapter's analysis lacks all the sorting measures present in the MSA analysis, the last two sets of measures are combined together into measures of population and industry diversity.

Table 5.4.6 Results for Measures of Population and Industry Diversity

General Governments	Coef.	Std. Err.	P> z	Significant	Predict/Right
HHI of Racial Diversity across County	0.36345	0.09574	<0.001	**	-no
HHI of Language Diversity across County	0.00927	0.16068	0.954		-no
HHI of Religious Diversity across County	-0.27221	0.09791	0.005	*	-yes
HHI of Employment Diversity across County	-1.03000	0.19655	<0.001	**	-yes
HHI of Payroll Diversity across County	-0.27528	0.15436	0.075	+	-yes

+ significant at 90% CI

* significant at 95% CI

** significant at 99.9% CI

Once again, the evidence is mixed. Language diversity is insignificant and signed the opposite of expected, but signed the same as in the MSA analysis. Racial diversity is significant and signed the opposite of expectation where in the MSA it was signed as expected and insignificant. Religion is consistent across both analyses and even has a similar magnitude affect. Population diversity based on community characteristics depends on race and religion, but in the non-MSA counties, racial homogeneity is associated with more general governments (it was fewer in MSAs) and religious homogeneity is associated with fewer (the same as in MSAs).

Industry consolidation is less ambiguous. Employment and payroll homogeneity both point towards fewer general governments, are both significant (though payroll only at the 10% level), and finally point the same direction.

5.4.7 Robustness and Additional Analysis

As in chapter 4, the analysis was repeated with some differences in variables to check for robustness. First, the two categories of urban were summed and included as a measure only of urban residents. Second, a possible interaction between citizen and government liberalism was tested. Third, racial heterogeneity was tested with a quadratic term. As in the MSA analysis, no change was statistically significant.⁴⁴

The next robustness check was to include a Herfindahl index of population fragmentation across the general governments. This distinguishes between counties with many general governments, but where most of the population lives in one –such as the much discussed Decatur, Indiana –and counties with more dispersed populations. This had no effect on the results other than itself being significant.⁴⁵

After the robustness checks, two additional analyses were done to supplement the main analysis, just as in chapter 4. The first is to replace the measure of governmental fragmentation with the measure of population fragmentation and switch the procedure from cross-sectional time series Poisson regression to panel regression with a continuous

⁴⁴ The interaction of government liberalism and citizen liberalism got close, though, which warrants a footnote on the measure because a better measure might get different results. Rather than multiply the two numbers together –which does not make much sense since they run from 0 to 100 with the middle at 50 –I created a dichotomous measure that the government was liberal –ie greater than 50. The interaction is then the liberalism of the population given that the government is already liberal. A measure which can tease out whether the government is more liberal than the population or vice versa may find something interesting.

⁴⁵ Again, population fragmentation is endogenous to the number of general governments, so it is not itself interpretable.

dependent variable that ranges from $1/n$ to 1 where n is the number of general governments. Unlike in the MSA analysis, this analysis did produce significant results. The results were largely the same as the main model, but did differ in some places. The model is presented in table 5.4.7. The Herfindahl measure of population fragmentation is reverse coded relative to the number of general governments –so a negative number in the main model has the same effect as a positive number in this model.

The coefficients within the model which are significant and different are:

- 1.) The concentration of federal revenue (significant and correctly signed in the Population model, opposite sign and insignificant in the Governments model)
- 2.) Concentration of local government expenditure (significant and correctly signed in the Population model, opposite sign and insignificant in the Governments model)
- 3.) Aggregate Housing Value (significant and correctly signed in the Population model, opposite sign and insignificant in the Governments model)
- 4.) Voluntary Annexation (significant and negative in both models)
- 5.) Annexation by City Ordinance (significant and positive in both models)
- 6.) Annexation by Referendum (significant and negative in both models)
- 7.) Government Liberalism (positive in both models, significant in the Population model)

The financial and economic differences are in favor of the theory –the population fragments when there are resources to allow it, even though these measures also predict fewer general governments. The annexation variables are more confusing. Voluntary

and referendum annexation were associated with fewer cities –as expected given that these restrictions make cities less powerful –and yet the population is more fragmented in both cases. Annexation by city ordinance is the reverse. It predicts more cities –possibly because it is a valued ability rather than a restriction –and yet results in more consolidated populations. Finally, government liberalism had little effect on the number of general governments, but does result in a more consolidated population.

Table 5.4.7 Supplemental Panel Regression with Population Fragmentation as Dependent Variable

Obs	4548
Groups	2293
Obs/Group	1 to 2
Wald(85)	4517.51
X-sq	<.001

Herfindahl Index (HHI) Population Fragmentation in County	Coef.	Std. Err.	P> z
County Population (100k)	-0.11921	0.06652	0.073
Urban Areas population (100k)	0.09344	0.06479	0.149
Urban Cluster population (100k)	0.10700	0.05838	0.067
Moved Counties in last 5 years (100k)	0.04026	0.08963	0.653
Average City Expenditure (1b)	3.64157	0.34337	<0.001
Total State revenue to county (10m)	-0.00567	0.00336	0.091
Total federal revenue to county (10m)	0.01618	0.01473	0.272
Herfindahl Index (HHI) of federal revenue to County	0.03432	0.00627	<0.001
HHI of state revenue to county	0.38546	0.01447	<0.001
HHI of local revenue to county	0.02579	0.00734	<0.001
HHI of local intergovernment expenditure to county	0.03550	0.00619	<0.001
Aggregate Income for the county (1b)	-0.00034	0.00045	0.445
Household Median Income (10k)	0.00145	0.00828	0.861
Persons in Poverty (100k)	-0.47038	0.24572	0.056
Aggregate Housing Value (10b)	-0.43753	0.14065	0.002
Median Housing Value (100k)	0.12370	0.02428	<0.001

Table 5.4.7 Continued	Coef.	Std. Err.	P> z
Housing Value Interquartile Range (100k)	-0.07694	0.02388	0.001
Registered Not-for-Profits (1k)	0.08697	0.06288	0.167
Ratio of Majority to Minority Party voters	0.00620	0.00335	0.064
3rd Parties (1/0)	0.00468	0.01276	0.714
Statutory Home Rule Protection (2/1/0)	0.03844	0.01335	0.004
Dillon's Rule Judiciary (1/0)	-0.49098	0.14425	0.001
Laws limiting Incorporation (1/0)	-0.00123	0.00815	0.880
Laws limiting Annexation (1/0)	0.05766	0.06793	0.396
Annexation allowed voluntarily (1/0)	-0.02031	0.00923	0.028
Annexation allowed by City Ordinance (1/0)	0.02078	0.00861	0.016
Annexation allowed with County Permission (1/0)	-0.00064	0.01232	0.959
Annexation requires referendum (1/0)	-0.02956	0.01049	0.005
State requires Balanced Budget (1/0)	0.01850	0.00727	0.011
State imposed Debt Limit (1/0)	-0.00807	0.01042	0.439
Citizen Liberalism (state)	-0.00070	0.00056	0.214
Government Liberalism (state)	0.00061	0.00016	<0.001
Total number of Democrats (100k)	0.06238	0.08166	0.445
HHI of Racial Diversity across County	0.01354	0.02474	0.584
HHI of Language Diversity across County	-0.01026	0.04427	0.817
HHI of Religion Diversity across County	0.07309	0.02516	0.004
HHI of Employment Diversity across County	0.15728	0.05163	0.002
HHI of Payroll Diversity across County	0.03992	0.04445	0.369
AK	-0.73433	0.14770	<0.001
AR	-0.50918	0.15022	0.001
CA	-0.49779	0.14282	<0.001
CO	-0.63926	0.14734	<0.001
CT	-0.65036	0.14414	<0.001
FL	0.01115	0.13628	0.935
GA	-0.45401	0.14396	0.002
HI	-0.57333	0.14393	<0.001
ID	-0.65688	0.18404	<0.001
IL	-0.06843	0.04147	0.099
IN	-0.54061	0.14349	<0.001
IA	-0.52137	0.14320	<0.001
KS	-0.67177	0.14397	<0.001
KY	-0.58046	0.14505	<0.001
LA	-0.44961	0.14381	0.002

Table 5.4.7 Continued	Coef.	Std. Err.	P> z
ME	-0.56975	0.14472	<0.001
MD	-0.60052	0.14839	<0.001
MA	-0.58694	0.14952	<0.001
MI	-0.70727	0.16665	<0.001
MN	-0.76270	0.14363	<0.001
MS	-0.78579	0.14373	<0.001
MO	-0.44270	0.14377	0.002
MT	-0.55890	0.14371	<0.001
NE	-0.53007	0.14439	<0.001
NV	-0.09571	0.04242	0.024
NH	-0.04887	0.04916	0.320
NJ	-0.64599	0.15497	<0.001
NM	-0.51931	0.14579	<0.001
NY	-0.46443	0.14507	0.001
NC	0.00807	0.03233	0.803
ND	-0.67299	0.14459	<0.001
OH	-0.73596	0.14341	<0.001
OK	-0.69023	0.14476	<0.001
OR	-0.72782	0.14615	<0.001
PA	-0.73295	0.14309	<0.001
RI	-0.80651	0.21048	<0.001
SC	-0.42315	0.14409	0.003
SD	-0.64048	0.14400	<0.001
TN	-0.56748	0.14377	<0.001
TX	-0.50698	0.14322	<0.001
UT	-0.74827	0.14689	<0.001
VT	-0.57181	0.16333	<0.001
VA	0.09355	0.03411	0.006
WA	-0.52243	0.14446	<0.001
WV	0.09464	0.04482	0.035
WI	-0.74419	0.14449	<0.001
WY	-0.54143	0.14713	<0.001
_cons	0.45783	0.16931	0.007
sigma_u	0.10035		
sigma_e	0.12534		
rho	0.39063	(fraction of variance due to u_i)	

The final analysis used the 2558 cases from 2002 and added the number of business births and deaths to measure the effect of private sector entrepreneurs on the number of general governments. The model was distinct from an all-zero parameter model. Without the time-series, several state fixed effects were dropped for their collinearities with other variables. As in the MSA analysis, one of the measures of private sector entrepreneurship is significant, but it is the other one. In the MSA analysis, it was new business starts, which was a measure of entrepreneurial capital. In the non-MSA analysis, it is business deaths, which was the measure of entrepreneurial risk taking. Other than the two new variables and the collinearities, the model remains unchanged.

Table 5.4.8 Full Cross-Sectional Time Series Poisson Regression with State Fixed Effects for Impact of Resources and Population Diversity on County Fragmentation

Obs	4548
Groups	2293
Obs/Group	1 to 2
Loglikelihood	-10634.3
Wald(85)	9432.38
<i>X-sq</i>	<0.001

General Governments	Coef.	Std. Err.	z	P> z
County Population (100k)	1.78078	0.22464	7.93	<0.001
Urban Areas population (100k)	-0.56056	0.20100	-2.79	0.005
Urban Cluster population (100k)	-0.84864	0.18013	-4.71	<0.001
Moved Counties in last 5 years (100k)	-0.57541	0.53528	-1.07	0.282
Average City Expenditure (1b)	-35.15892	2.09530	-16.78	<0.001
Total State revenue to county (10m)	0.07596	0.01096	6.93	<0.001
Total federal revenue to county (10m)	0.05042	0.04262	1.18	0.237
Herfindahl Index (HHI) of federal revenue to County	0.00188	0.01904	0.10	0.921
HHI of state revenue to county	-0.80776	0.04811	-16.79	<0.001
HHI of local revenue to county	-0.03596	0.02386	-1.51	0.132
HHI of local intergovernment expenditure to county	0.04264	0.01890	2.26	0.024
Aggregate Income for the county (1b)	-0.00080	0.00156	-0.51	0.608
Household Median Income (10k)	-0.07519	0.03030	-2.48	0.013
Persons in Poverty (100k)	0.72008	0.87185	0.83	0.409
Aggregate Housing Value (10b)	-0.99703	0.45912	-2.17	0.030
Median Housing Value (100k)	-0.26026	0.09681	-2.69	0.007
Housing Value Interquartile Range (100k)	0.18213	0.09134	1.99	0.046
Registered Not-for-Profits (1k)	0.56675	0.19099	2.97	0.003
Ratio of Majority to Minority Party voters	0.01873	0.01212	1.54	0.122
3rd Parties (1/0)	0.18008	0.03474	5.18	<0.001
Statutory Home Rule Protection (2/1/0)	-0.20691	0.04934	-4.19	<0.001
Dillon's Rule Judiciary (1/0)	0.16420	0.42984	0.38	0.702
Laws limiting Incorporation (1/0)	-0.00278	0.01536	-0.18	0.856
Laws limiting Annexation (1/0)	-0.39079	0.13118	-2.98	0.003
Annexation allowed voluntarily (1/0)	-0.04257	0.02470	-1.72	0.085
Annexation allowed by City Ordinance (1/0)	0.07543	0.02752	2.74	0.006
Annexation allowed with County Permission (1/0)	-0.17873	0.04066	-4.40	<0.001

Table 5.4.8 Continued	Coef.	Std. Err.	z	P> z
Annexation requires referendum (1/0)	-0.30080	0.02874	-10.46	<0.001
State requires Balanced Budget (1/0)	-0.18604	0.02072	-8.98	<0.001
State imposed Debt Limit (1/0)	0.18355	0.03068	5.98	<0.001
Citizen Liberalism (state)	-0.00132	0.00183	-0.72	0.471
Government Liberalism (state)	0.00067	0.00050	1.34	0.181
Total number of Democrats (100k)	0.08874	0.17215	0.52	0.606
HHI of Racial Diversity across County	0.36345	0.09574	3.80	<0.001
HHI of Language Diversity across County	0.00927	0.16068	0.06	0.954
HHI of Religion Diversity across County	-0.27221	0.09791	-2.78	0.005
HHI of Employment Diversity across County	-1.03000	0.19655	-5.24	<0.001
HHI of Payroll Diversity across County	-0.27528	0.15436	-1.78	0.075
AK	1.30033	0.44525	2.92	0.003
AZ	-0.23842	0.46306	-0.51	0.607
AR	0.51088	0.42513	1.20	0.229
CA	0.18158	0.45232	0.40	0.688
CO	0.95863	0.43436	2.21	0.027
CT	-0.95038	0.38561	-2.46	0.014
FL	0.52841	0.43488	1.22	0.224
GA	0.41287	0.42943	0.96	0.336
HI	-16.42654	7483.86000	0.00	0.998
ID	-0.27205	0.14949	-1.82	0.069
IL	1.52881	0.42616	3.59	<0.001
IN	1.19782	0.42493	2.82	0.005
IA	0.78009	0.42859	1.82	0.069
KS	1.47719	0.43222	3.42	0.001
KY	-0.04986	0.42984	-0.12	0.908
LA	0.63983	0.43447	1.47	0.141
ME	0.62186	0.43815	1.42	0.156
MD	1.00610	0.45567	2.21	0.027
MA	1.14045	0.52347	2.18	0.029
MI	1.33541	0.42651	3.13	0.002
MN	2.02615	0.42750	4.74	<0.001
MS	-0.14373	0.42896	-0.34	0.738
MO	0.97893	0.42799	2.29	0.022
MT	-0.09926	0.43468	-0.23	0.819
NE	0.82037	0.14943	5.49	<0.001
NV	-1.01646	0.29159	-3.49	<0.001
NH	0.40457	0.45132	0.90	0.370

Table 5.4.8 Continued	Coef.	Std. Err.	z	P> z
NM	0.26800	0.44089	0.61	0.543
NY	1.52007	0.43007	3.53	<0.001
NC	0.12479	0.11775	1.06	0.289
ND	2.10867	0.43018	4.90	<0.001
OH	1.52598	0.42686	3.57	<0.001
OK	0.59306	0.43199	1.37	0.170
OR	0.06313	0.44027	0.14	0.886
PA	1.42429	0.42412	3.36	0.001
RI	0.44874	0.66041	0.68	0.497
SC	0.46344	0.43164	1.07	0.283
SD	1.58403	0.42908	3.69	<0.001
TN	0.65570	0.43132	1.52	0.128
TX	0.12576	0.42726	0.29	0.769
UT	1.10877	0.44194	2.51	0.012
VT	0.07976	0.45917	0.17	0.862
VA	-0.48307	0.13197	-3.66	<0.001
WA	0.58140	0.43390	1.34	0.180
WV	0.03902	0.16217	0.24	0.810
WI	1.27994	0.42966	2.98	0.003
WY	0.07400	0.44412	0.17	0.868
_cons	2.64506	0.48247	5.48	<0.001
/lnalpha	-1.99366	0.04860		
alpha	0.13620	0.00662		

Table 5.4.9 Supplemental Poisson Regression Including Private Sector Entrepreneurship with 2002 Data Only

N=2258
chi2(75)=17221.55
P>Chi2>0.001
Loglikelihood=-5559.5618

General Governments	Coef.	Std. Err.	z	P> z
County Population (100k)	2.356452	0.223622	10.54	<0.001
Urban Areas population (100k)	-1.57358	0.176053	-8.94	<0.001
Urban Cluster population (100k)	-1.52922	0.15242	-10.03	<0.001
Moved Counties in last 5 years (100k)	0.495666	0.416599	1.19	0.234
Average City Expenditure (1b)	-37.1601	2.283265	-16.27	<0.001
Total State revenue to county (10m)	0.060731	0.010611	5.72	<0.001
Total federal revenue to county (10m)	0.126583	0.044441	2.85	0.004
Herfindahl Index (HHI) of federal revenue to County	0.056351	0.022881	2.46	0.014
HHI of state revenue to county	-0.92445	0.048335	-19.13	<0.001
HHI of local revenue to county	-0.0486	0.026171	-1.86	0.063
HHI of local intergovernment expenditure to county	0.030693	0.021872	1.4	0.161
Aggregate Income for the county (1b)	0.002085	0.001257	1.66	0.097
Household Median Income (10k)	0.104988	0.032134	3.27	0.001
Persons in Poverty (100k)	-1.15033	0.836323	-1.38	0.169
Aggregate Housing Value (10b)	-3.61388	0.497839	-7.26	<0.001
Median Housing Value (100k)	-0.63486	0.091538	-6.94	<0.001
Housing Value Interquartile Range (100k)	0.483838	0.07838	6.17	<0.001
Registered Not-for-Profits (1k)	-0.00799	0.135504	-0.06	0.953
Business Births	-0.00044	0.000268	-1.64	0.1
Business Deaths	0.001559	0.000294	5.31	<0.001
Ratio of Majority to Minority Party voters	-0.0539	0.01446	-3.73	<0.001
3rd Parties (1/0)	0.656353	0.27162	2.42	0.016
Statutory Home Rule Protection (2/1/0)	-0.00025	0.090036	0	0.998
Dillon's Rule Judiciary (1/0)	-0.48435	0.44315	-1.09	0.274
Laws limiting Incorporation (1/0)	0.4538	0.153956	2.95	0.003
Laws limiting Annexation (1/0)	-1.78919	0.727257	-2.46	0.014
Annexation allowed voluntarily (1/0)	-0.57864	0.161847	-3.58	<0.001
Annexation allowed by City Ordinance (1/0)	0.285584	0.131805	2.17	0.03

Table 5.4.9 Continued	Coef.	Std. Err.	z	P> z
Annexation allowed with County Permission (1/0)	-0.33321	0.114066	-2.92	0.003
Annexation requires referendum (1/0)	0.283525	0.229077	1.24	0.216
State requires Balanced Budget (1/0)	-0.55405	0.139378	-3.98	<0.001
State imposed Debt Limit (1/0)	0.721456	0.15361	4.7	<0.001
Citizen Liberalism (state)	-0.00611	0.008144	-0.75	0.453
Government Liberalism (state)	-0.00723	0.001557	-4.64	<0.001
Total number of Democrats (100k)	0.301031	0.595177	0.51	0.613
HHI of Racial Diversity across County	0.364762	0.095141	3.83	<0.001
HHI of Language Diversity across County	0.331479	0.14654	2.26	0.024
HHI of Religion Diversity across County	-0.52203	0.090231	-5.79	<0.001
HHI of Employment Diversity across County	-1.26359	0.214699	-5.89	<0.001
HHI of Payroll Diversity across County	-0.21599	0.165802	-1.3	0.193
AZ	-0.65817	0.212382	-3.1	0.002
AR	-0.15801	0.137849	-1.15	0.252
CA	0.16554	0.30821	0.54	0.591
CO	0.399717	0.168744	2.37	0.018
FL	-0.74643	0.321003	-2.33	0.02
GA	0.384526	0.164126	2.34	0.019
HI	-11.0421	617.0612	-0.02	0.986
ID	-0.34613	0.333514	-1.04	0.299
IL	-0.08463	0.116182	-0.73	0.466
IN	1.15569	0.146421	7.89	<0.001
IA	0.038994	0.20411	0.19	0.848
KS	0.061602	0.145642	0.42	0.672
KY	-1.53344	0.339293	-4.52	<0.001
LA	-0.49112	0.322116	-1.52	0.127
MA	1.138807	0.390073	2.92	0.004
MI	0.485392	0.139998	3.47	0.001
MN	1.902253	0.101954	18.66	<0.001
MS	-0.06134	0.137877	-0.44	0.656
MO	-0.26839	0.294845	-0.91	0.363
MT	-0.55943	0.167392	-3.34	0.001
NE	1.107422	0.572927	1.93	0.053
NV	0.235096	0.617203	0.38	0.703
NY	0.755195	0.263514	2.87	0.004
NC	1.269359	0.370512	3.43	0.001
ND	1.564841	0.220154	7.11	<0.001
OK	-0.28688	0.316511	-0.91	0.365

Table 5.4.9 Continued	Coef.	Std. Err.	z	P> z
OR	-0.01625	0.167949	-0.1	0.923
SD	0.809566	0.333028	2.43	0.015
TN	-0.45244	0.324296	-1.4	0.163
TX	-0.04392	0.153008	-0.29	0.774
UT	0.763201	0.138064	5.53	<0.001
VT	-2.23021	0.672976	-3.31	0.001
VA	-0.88659	0.475906	-1.86	0.062
WV	0.03502	0.511447	0.07	0.945
WY	-0.92901	0.165948	-5.6	<0.001
_cons	3.941049	0.885841	4.45	<0.001

5.5 Conclusions on the Fragmentation of Non-MSA Counties

Non-MSA counties provide a plethora of significant coefficients, interesting developments in the supplemental analysis, and differences from MSAs to provide many possible conclusions. The three conclusions from the MSA analysis are broadly supported: cities depend on resources to form, politics and finance matter to city formation, and cities are organized one city at a time. However, the specifics differ.

Non-MSA counties do not fragment based on the distribution of intergovernmental revenue, but rather based on the total amount granted –with federal money having a larger effect than state money. The price of government is tremendously important to entrepreneurs in organizing new governments outside MSAs where it was only one of many concerns within the metropolis. They are similar, however, in their response to restrictions on their powers. A state which imposes restrictions on local governments has fewer of them both in and out of the metropolis. Whatever the resources and population, there is evidence that an entrepreneur is still needed to organize the new city.

While both MSA and non-MSA analyses showed fragmentation based on social and economic diversity, more socio-economic measures were significant outside the MSA –including race, which was associated with consolidation. Non-MSA counties also fragment based on industry concentration both of employment and payroll. Outside the metropolis, politics and wealth still matter, but so do industry, religion, and race.⁴⁶

For all the differences, the distributional finding was the same. General governments were distributed Poisson, indicating that the creation of a general government was decided on the merits of the particular government, not by reference to the number of existing governments. Even here, however, things are not the same. In the metropolis, resources and preferences led to governmental fragmentation, but had no impact on population fragmentation. That was not true outside the metropolis. Furthermore, outside the MSA some state laws and material resources drove the creation of general governments one way, but population fragmentation the other.

This, obviously, suggests additional research possibilities. What explains how the population fragments when it has wealth, but not the governments? What explains how the city annexation leads to more cities but more consolidated populations, and how annexations which require the consent of non-city residents lead to fewer cities but a more dispersed population? What explains how population fragmentation is related to the drivers of city fragmentation outside the MSA but not inside the MSA? Finally, why do different resources matter inside and outside the MSA? Some suggestive answers will be provided in Chapter 7.

⁴⁶ Though it is worth noting that the magnitudes of the race, religion, and language indices are not very different. Race is oppositely signed, but both analyses put it around $|.3|$, and religion is a $-.5$ in this analysis and -1 in the MSA. The difference is their significance –which may point to something interesting in the difference in variation between MSAs and non-MSAs. Alternately, it could be the result of the lack of sorting measures in the non-MSA analysis.

Finally, there is one additional caveat that cannot be removed. Counties can become MSAs if they gain sufficient population density -100,000 residents in a population center. As such, some of the unexpected findings might be driven by population constraints. Urban, for example, is also defined by population density. As a result, if the population of a non-MSA county is increased to a certain point, and those new residents moved to cities which were close to each other, the county would be reclassified as an MSA. There may not be any counties with lots of cities and lots of urban residents because those places graduated into the other dataset. In other words, urban residents may be associated with consolidation because all the urban residents associated with fragmentation end up in the MSA dataset.

While this possibility cannot be ruled out, it is not necessarily worrisome. The maximum size of a county in this dataset is only 186,000 (York, Maine in 2002), and the maximum urban population is 120,000 (Imperial, California in 2002). The line between MSA and non-MSA is relatively thin, and so the edge cases seem unlikely to be influencing the estimates unduly.

As with the results of the population fragmentation analysis, this suggests more research to be done. First, are there more categories than just MSA and non-MSA? Should jurisdictions be placed on a continuum? Is there a difference for the preference in number of cities between those who live in MSAs and those who do not? What drives that difference if it exists? How does it interact with the annexation laws used in this analysis? These important questions remain to be answered.

One aspect that may be important to understanding the unexpected findings of this and the previous chapter is that not every interest group is the same. While all interest

groups are expected to organize through similar entrepreneurial methods, not every interest group has the same goals or resource needs. Economic or material interest groups have different needs than expressive or ideological interest groups, and if there are differences between MSA and non-MSA, or even between counties, on the type of interest group community this could affect the interpretation of the results. This too, would be an interesting further line of research, though it would require a different approach and more qualitatively detailed data.

Chapter 6

The Network of Local Government

6.1 Introduction

The previous two chapters have demonstrated that American cities are fragmented by diverse populations provided there are adequate resources to support additional governments. When government is cheap or resources are plentiful and individuals have diverse preferences, those same individuals are willing and able to form smaller, more ideally organized governments. The smaller jurisdictions guard their autonomy as a way to protect the continued good-fit of their governments.

However, the purpose of this dissertation is not only to explain urban fragmentation, but to develop a theory of urban organization as a type of interest group organization. Interest groups not only fragment like cities, they also have cooperative and competitive relations with each other like cities. Like small interest groups, however, the small jurisdiction has difficulty providing for its residents only from its own resources. The small organization lacks economies of scale, so services are more expensive. The limited resources of the small organization also make it difficult to accomplish complicated tasks without help. The resources necessary to keep the organization functional –the ones which organizations must control –are not necessarily the same resources necessary to control policy. Without control of those resources, the first organization must work with the organization which does control that resource or compete with that organization to get control of the resource. Competition is expensive, and so cooperation is the preferred method. Organizations also cooperate to get better results from their existing resources –through economies of scale, for example.

Cooperation among groups is strategic. Groups choose partners based on who controls resources, whether another partner can make existing resources more valuable, and how much autonomy must be surrendered to make the alliance work. Much like the formation of a new city is a balance of the benefit of autonomy and fit against low cost, cooperation is a balance of low cost and new benefit options against decreased autonomy and potentially worse fit. The same constraints which drive interest groups to this kind of cooperation also drive cities to the same.

Cooperation can be systemic or ad hoc. In either case, cooperation happens along lines of contact between organizations. Cooperative action implies communication. Communication implies a network. This chapter investigates the relationship between resources, goals, and inter-city contact. In the next section, I explain out the basics of network theory as it applies to inter-city cooperation. Section 3 applies network theory to contact and cooperation between cities. In section 4, I describe the dataset of Kentucky mayors collected and analyzed in this chapter. In part 5, I analyze a contact network of Kentucky mayors to test the antecedents of inter-city contact. Finally, I conclude the chapter in part 6 with conclusions from the analysis.

6.2 The Literature of Network Theory

Social networks describe the connection of individuals (called nodes) to one another through a variety of relational ties. A network might describe friends or family or coworkers or the lobbying of various interest groups. In most networks, the first use of social connections is to share information (Granovetter, 1985). The shape of the network affects how information is shared (Granovetter, 1973). If the network is dense, which is

to say that there are many connections between members, then information spreads quickly through the network. As each person shares the information with all their contacts, the information reaches exponentially more people.⁴⁷ As a result, everyone in the network knows more or less the same things. This is helpful for routine information, but more exotic requests would require a connection to another network –one where someone might have an answer.

A highly centralized network –one where there are a few major actors and everyone is connected to those major actors, such as a single-center metropolis –would be controlled by those major actors and the “peripheral” actors would be less powerful (Leavitt, 1951). Centralized networks are less dense, so information has to pass through choke-points to spread across the network. The person occupying the choke point is a gatekeeper and can use that power to help or harm. (Brass, 1984).

In addition to the spread of ideas (Burt, 2004, Brass, 1995), networks also allow for the spread of resources (John and Cole, 2000). Much like the connections in a production line, government policy or lobbying relies on being able to connect those who have the necessary resources. For this reason, centrality is itself a resource (O’Toole and Meier, 2004, Selznick, 1943, 1948, Smith, 2000).

The existing network can explain how cooperation starts –two cities with a connection recognize shared information or resources and negotiate an agreement, for example. Network studies also illuminate how the networks start, and so can tell something about how groups and cities form the networks which later affect cooperation. The major theory is homophily –the idea that similar people like to be together (McPherson, et al, 2001). Those with more in common have more things to talk about,

⁴⁷ One person reaches 4, those four reach 16, and so on.

and as a result tend to have established relationships. In large collections of homophilous people, the members seek out those who are still more similar (Mehra, Kilduff, and Brass, 1998). In a room full of international businessmen, the Americans will find each other. Within the collection of Americans, the African-Americans will find each other. And the groups may subdivide even further. In addition to being a similar story to the way interest groups and cities form –seeking ever more similar people to share the network and organization –this also fits with how interest groups interact with each other. They look for similar people. The similarity of the individuals also provides times and places where networking happens (Feld, 1981).

Similarities not only give network members something to talk about, it gives them a place to do it –a social focus. If several individuals shared several foci, they would have strong relationships because of the numerous opportunities to interact. If those foci were “compatible,” allowing work from one focus to be done in another, these individuals could also accomplish more by “doubling up” on their interactions. Company work might be done at a company softball game, for example. A “large” would have many members, but they would be loosely connected to each other. The broad focus would attract many people for many different reasons and reduce the homophily of the whole group. If the focus was narrow, the group would be small, but also densely connected. And like interest groups, cities, and network, each large focus would have many smaller foci within it (Mehra, Kilduff, and Brass 1998). Those smaller groups might be determined by unique characteristics of the individuals –in the specific study, people tended to search out small groups by sex, race, and age –or by some common interest, such as agriculture groups break into smaller groups by particular crop

(Salisbury, 1969). In the case of Atlanta, the large focus was city government and its ceremonies and functions, but it included smaller foci for businessmen and African-American leaders to do the business of their interests and the business of the city simultaneously. In interest groups, there are typically many more people interested in the policy than actually working on it—a smaller focus inside a larger one (Larsen, Vrangbaek, and Traulson, 2006, Howlett, 2002).⁴⁸

6.3 Networks in Interest Groups and Cities

For interest groups to cooperate, there must be a network. When interest groups cooperate, it is because of shared goals (Hojnacki, 1997), or what network scholars call homophily. Where interest groups differ in their network is that, because they value autonomy, simply having something in common is not enough. Networks are not free to maintain and resources spent maintaining the network are resources not spent on producing goods or getting a direct return or avoiding being undercut by another organizer. The benefit of maintaining a network must be greater than the cost and constraints, through additional resources, new information, or better production. Groups, and by extension cities, must have something in common and they must benefit from communicating about it.

There are two ways cities can benefit through cooperation. The first is the economy of scale. If cities face similar problems and residents desire similar solutions, then banding together to provide a single service can save both organizers money by

⁴⁸ Another way to integrate this research with interest group organization would be to think of the large social focus as the latent group—they have a common interest and can talk with each other, but they lack strong ties. Those members of the latent group who are organized to real action will have stronger ties with each other, but also a narrower social focus—their activism.

reducing redundancy and spreading the fixed costs over more people. Because the services desired are common to both cities, no residents are worse off, the loss in autonomy is made up in the lower cost, and the entrepreneur earns the profits.⁴⁹ For this to work, cities have to be close enough to each other to share the service and the transportation costs not to swamp the savings.

The second way cities can benefit through cooperation is through an alliance to use resources they control. Interest groups may trade different types of resources: group 1 brings money while group 2 brings voters, for example. For cities, this is possible, but cities also have sole control of their territory. While land may be a generic resource for an interest group, for a city, land is very specific (Molotch, 1976). A road has to connect all the right parcels, and if another city controls part of the route, cities must cooperate on the road. A city always has a resource to trade –its consent (Fischel, 2001). Where there are large differences in city resources, trade is more likely because it is easier for the larger jurisdiction to provide compensation to the smaller to get consent (Volden, 2007).

The interaction between cities in this way can also have an influence on fragmentation. The purpose of this section is to establish the nature of local government networks –making their effects on fragmentation a future project –but the potential interaction will affect the design of this study. Cooperation in an urban area can allow for additional fragmentation by allowing cities to pool resources to face large problems and contract with each other to take advantage of comparative efficiencies. This was why, for example, the distribution of local intergovernmental revenue was included in the prior chapters. However, this assumes that cities predominantly associate with their

⁴⁹ “Profits” for a city might mean votes for mayor, lower taxes on residents, or higher returns for land developers and realtors.

geographic peers, and it is not obvious that they should. Large cities may be far more interested in maintaining relationships with other large cities than with their smaller suburban neighbors. By studying a state-wide network, this type of cooperation and contact can be explicitly tested.

There is a difference between cities and social networks in that cities are organizations, not individuals. Networking between members is possible, but when speaking of the relationship between organizations, it is really the network of entrepreneurs that matters. The entrepreneur is the one who organizes the group and makes sure everyone gets the benefits necessary to gain compliance. If the entrepreneur does not want to work with another organization, the membership will have a hard time forcing him or her to so. The entrepreneur is the one distributing benefits.

Because the entrepreneurs of the cities are the people who form the group, the similarity of entrepreneurs is also important. The more things entrepreneurs have in common, the easier it is to communicate, and the less costly it is. When maintaining the network is fun, entrepreneurs are willing to give up some compensation to do it (Stone, 1989 makes this point explicitly about the coalition governing Atlanta –part of the reason it was stable for so long was because the members liked each other and did not want to break up the coalition).

Finally, there is the matter of social focus for the city. A social focus is anything which provides a time, place, and topic for sustaining a network. For cities, this could be many things, but their immediate super-jurisdictions are good candidates. Councils of Government, county government meetings, and other regional committees are places where cities would need to send representatives, where they would have something to

talk about, and time to do it. In Kentucky, Area Development Districts might fill this goal. ADDs are multi-county and multi-city organizations which plan, coordinate, and organize funding for economic development among their members. Mayors and County Judge-Executives are members of the governing body and have a monthly meeting –an ideal focus for local government cooperation. The focus reduces the cost of networking and also provides an impetus to talk about common issues if that is what the meeting was about.

If cities act like interest groups, then cities should have contact with each other when they 1.) Share goals, 2.) are close enough to gain economies of scale or have different resources, 3.) where the entrepreneurs are similar, and 4.) have a focus that reduces the cost of contact. Sharing goals for an interest group is not just about sharing a policy issue, it is also about having similar preferences. This is most likely when the same interests dominate the city and when their populations are most alike. For cities, the entrepreneur is the person who organizes the governing coalition, which I will assume is the elected mayor. This generates the following hypotheses:

- 1.) If cities share policy concerns, then the mayors are more likely to have contact
- 2.) If cities share major interest groups, then the mayors are more likely to have contact
- 3.) If the cities share demographics, then the mayors are more likely to have contact
- 4.) If the cities are close to each other, then the mayors are more likely to have contact.

- 5.) If the cities have different resource levels, then the mayors are more likely to have contact.
- 6.) If the mayors share similar social characteristics, then the mayors are more likely to have contact.
- 7.) If the cities share counties or regional governments, then the mayors are more likely to have contact.

6.4 A Network of Kentucky Mayors

To answer the hypotheses posed in the prior section requires data about the contact network of mayors. Who talks with whom? With the cooperation of the Kentucky League of Cities, I contacted 374 mayor members of the League, explained the project, and asked them to take a survey. The survey asked questions about what the mayors perceived as their most prominent city policy issues, prominent internal civic organizations, personal characteristics of the mayors, and which mayors (from a list of all 373) they had official mayor-to-mayor contact. The definition of “official” was left up to the mayor to so as not to preclude mayors who considered social contact a part of their job from describing that part of their network. The survey instrument and contact letter are included as Appendix 2. Of 374 mayors, 58 responded to the survey by time of the analysis (15.5%).⁵⁰ Five mayors did not complete the survey, for a total response rate of 14.2%.

The data collected in the survey were matched to data from two additional sources. Population, median income, median home value, and demographic data were

⁵⁰ For future use, the survey was left open for an additional week, but there was not time to analyze the additional data.

collected from city-data.com, a source of city information intended for potential movers. The city-data.com data are aggregated from other public sources, such as the Bureau of the Census. The Census data set was dated 2009. Additional data on geographic and political (as in city class and Area Development District –voting and party data were not available at the city level) characteristics were taken from ESRI ARCMMap data from 2000. Geographic and Area Development District characteristics had not changed since 2000. Several cities –including some included in the survey –were reclassified in June 2011. These cities were left with their pre-2011 classifications because cooperation prior to 2011 would be based on powers and size from 2010 and earlier..

To analyze the network, each variable (a vector) was converted to a matrix where the intersection of row and column indicated the degree of similarity between City_R and City_C. In the case of contact between the mayors of R and C, a 1 indicated that at least one of the mayors claimed to contact the other city. Both mayors identified each other in 33% of the cases. A 0 indicated no contact. For categorical data, such as which county or Area Development District the city was located in, a 1 indicates an exact match, else it is marked a zero. For level data, such as the percent of the population which was white or the number of residents, the absolute difference of the two jurisdictions was used. Summary statistics of the characteristics of the responding mayors and cities are displayed in table 6.4.1.

Table 6.4.1 Characteristics of Mayors and Cities in Sample

Variable	Obs	Mean	Std. Dev.	Min	Max
Mayor's Age	53	59.960	11.031	31	82
Population	58	4406	5,897.498	129	27952
Median Income (2009)	58	39,137.800	21,890.750	10,001	134,063
Median Housing Value (2009)	57	106,478.600	52,584.200	34,010	267,999
% White	58	87.700	10.178	53.1	99.6
County Seat (1/0)	58	0.397	0.493	0	1
Years in Office	54	5.400	5.662	1	28
Female (1/0)	54	0.185	0.392	0	1
Highest degree achieved	49	2.510	1.276	0	5

The mayors who responded average 60 years old, 82.5% men, 39% were the mayors of county seats and had served for an average of 5.4 years. They are also overwhelming white (only one minority respondent, an African American) and averaged between some college and a bachelor's degree. The average city had a median household income of \$39,000 and median house value of \$106,000 in 2009. It was 88% white and had 4,400 residents. Nine of the 58 cities were located in Jefferson County (15.5%) and were suburbs of Louisville. By comparison, the state of Kentucky had median household income in 2009 of \$40,000, median housing value of \$117,000,⁵¹ and the state was 87.8% white. Jefferson County held 17% of the population.⁵²

While the data from the survey are, where comparable, statistically close to the Kentucky averages, the response rate is still quite small and none of the responders is larger than a class 3 city. It is also possible that mayors who respond to this survey may be more prone to networking as they are both members of KLC and were interested in a

⁵¹ City-Data.com provides these comparisons.

⁵² Data taken from the Census Bureau's Quickfacts tables on October 23, 2011.

networking survey that would be shown at the Kentucky League of Cities convention and expo. Finally, compared to demographic data provided by the League, the mayors who responded are older, whiter, and more likely to be men than average in Kentucky.

The network of mayors is described in table 6.4.2 and a diagram of the network is shown in figure 6.4.1. Degree centrality is the count of how many contacts a given mayor has. The average mayor in this sample has 2.58 contacts. Betweenness is a measure of the number of unique paths which connect two separate mayors which pass through a third mayor in the graph of the network (see figure). It is measured by calculating the number of paths between cities j and k which pass through i for all cities j and k –and then summing those proportions. The average mayor has 32 paths (of 3,306 possible city-pairs). If normalized by dividing the sum of actual proportions by the total number of possible paths (ie: if every proportion was 1), the average city has 2% of the total possible paths. However, the majority of cities have no paths connecting two other cities pass through them.

Figure 6.4.1 shows a geographic diagram of the network of mayor contacts. The graph has a bias towards equal-distance between connected nodes and so physical distance is roughly proportional to social or network distance –that is, if two nodes are close to each other in the chart, then they also are close to each other along the network connections.

As the diagram shows, of those cities which have contact with other cities, most of them are part of the same network component. There is a recognizable network centered on Lyndon and Saint Matthews (suburbs of Louisville), Winchester (a neighbor

to Lexington), and Greensburg (located in central and southern Kentucky).⁵³ There is a much smaller network centered on Calhoun (a city near Owensboro). The other 13 cities did not have contacts within this network to any other city in the sample.⁵⁴

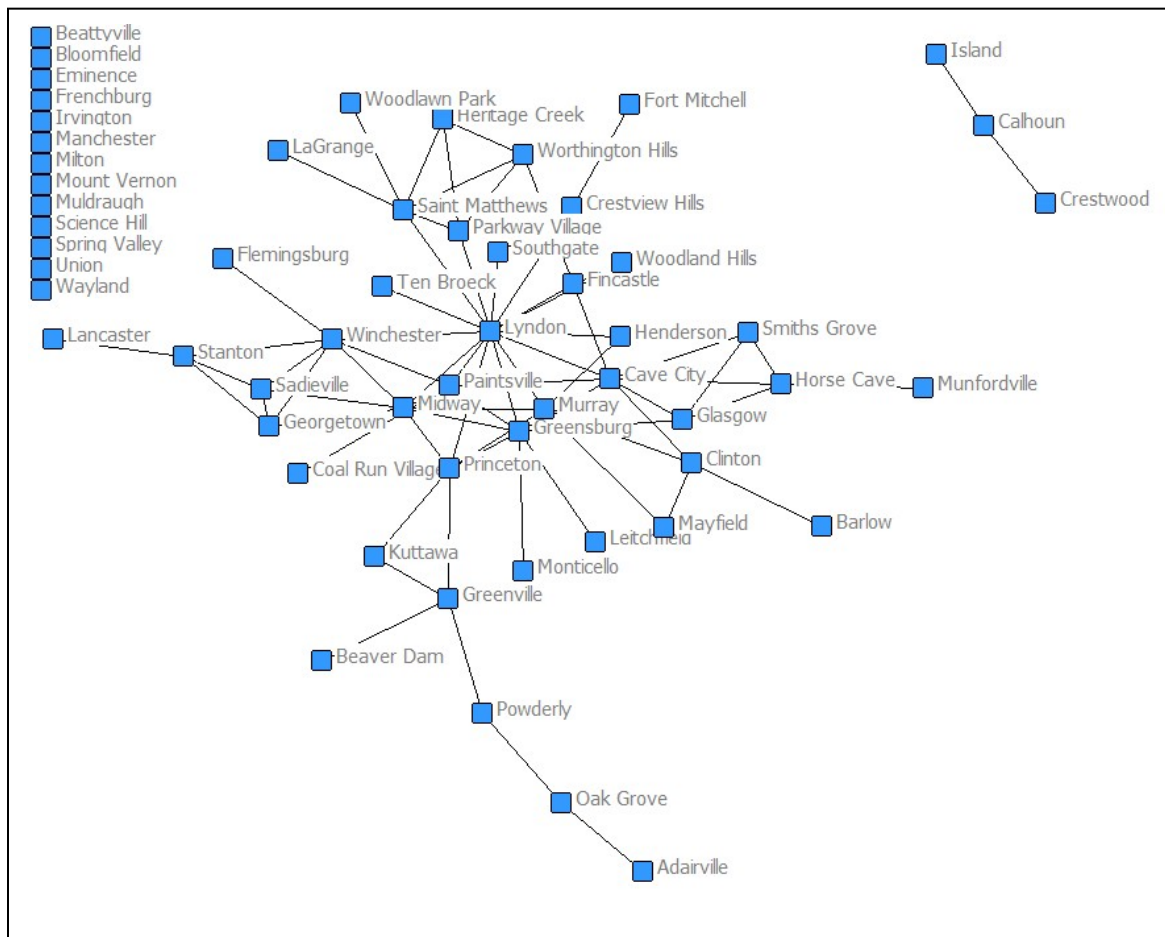
⁵³ After the analysis was completed I had a conversation with Ed Burtner, Mayor of Winchester, who pointed out that the reason he and the mayors of Lyndon, Midway, and Greensburg know each other is because they all serve on the Kentucky League of Cities Executive Board together.

⁵⁴ Some of them report contacts to cities not in this sample. The pattern is the same when expanded to all 373 cities. There is one primary component, a few smaller ones, and many cities with no contact at all.

Table 6.4.2 Measures of Network Centrality of Sample

	Mean	Std Dev	Minimum	Maximum
Degree	2.586	2.804	0	15
Betweenness	32.534	71.285	0	439.838
Standardized Betweenness	2.039	4.467	0	27.559

Figure 6.4.1 Network Diagram of the Sample of Kentucky Mayors⁵⁵



⁵⁵ For legibility, the cities of Monticello, Murray, Saint Matthews, and Southgate were moved slightly so they did not block the label for the neighboring cities.

6.4.2 Variables

The hypotheses regarding inter-mayor contact argue that homophily –similarity – of policy issues and city preferences and mayors themselves should lead to a higher probability of contact. The existence of a social focus should also lead to more probability of contact. However, interest groups which cooperate also need to have different resources to justify the loss of autonomy. Therefore, differences –not similarity –in size (population resources), legal authority, and financial resources should be associated with higher probabilities of contact between mayors.

The measures for each of these types of similarity and difference were computed as difference matrices. For categorical data each cell in the matrix represents the dyad $city_r-city_c$. If the cell has a 1 in it, that means that both $city_r$ and $city_c$ both share the trait. Otherwise, the cell is zero. For example, if $City_R$ was concerned about strategic planning, then R 's variable vector would have a 1 in it. If $City_C$ also had a 1 in that vector, then the matrix for strategic planning would have a 1 in the cell at the intersection of $City_R$ and $City_C$. For data with a level, such as distance in miles, each cell is the absolute difference between $city_r$ and $city_c$. Table 6.4.3 shows the density (mean) of each matrix variable. For continuous variables, the standard deviation is the standard deviation. For categorical variables, standard deviation is the total number of matches out of 3,306 city-pairs.⁵⁶

⁵⁶ For categorical data, measures of dispersion do not have a firm meaning. Density is not a measure of centrality but rather a measure of how many nodes touch each other.

Table 6.4.3 Summary of Variable Similarity (continuous marked by units)

Variable	Density	Std Deviation	Hypothesis Affect	Variable	Density	Std Deviation	Hypothesis Affect
Issues/Proximity				Mayor Characteristics			
Mayor Contact	0.045	150	DV	Difference in Years in Office	5.604	5.72	-
Distance (miles)	99.947	69.921	-	Same Sex	0.693	1982	+
Budgets	0.212	702	+	Same Race	0.962	2652	+
Development	0.339	1122	+	Same Profession	0.152	404	+
Grants	0.073	240	+	Difference in Education Level	1.446	1.082	-
Strategic Planning	0.033	110	+	Difference in Age (years)	12.257	9.651	-
Recession	0.006	20	+	City Characteristics			
Gov. Relations	0.004	12	+	Difference% White	10.593	9.7463	-
Safety	0.127	420	+	Difference % Religious	16.653	14.4423	-
Sanitation	0.093	306	+	Difference Population (people)	5,352.094	6396.566	-

Table 6.4.3 Continued

Variable	Density	Std Deviation	Hypothesis Affect	Variable	Density	Std Deviation	Hypothesis Affect
Issues (cont)				City Characteristics (cont)			
Streets	0.017	56	+	Same Occupation	0.229	730	+
Taxes	0.034	132	+	Same Industry	0.3	956	+
Zoning	0.004	12	+	Difference Med. Income (\$)	21,729.8	22050.52	+
Interest Groups				Difference Med. House value (\$)	56,506.41	48344.81	+
Businessmen	0.229	756	+	Same Largest Denomination	0.516	1646	+
Chamber of Commerce	0.127	420	+	Difference % Unemployed*	2.013	1.853	
Churches	0.103	342	+	Same County	0.032	104	+
Civic Groups	0.115	380	+	Commute (people)	2,000.025	2700.409	-
County Gov.	0.229	756	+	Difference % BA+	13.784	11.6963	-
Development Corp.	0.017	56	+	Difference Class	1.066	0.8484	-
Special Districts	0.001	2	+	ADD	0.098	324	+
Neighborhoods	0.017	56	+				
Utilities	0.033	110	+				

*Unemployment is County Level.

The first set of variables regarded issue similarity. Geographic distance is included as well to cover spill-over issues that affect both jurisdictions. From Agranoff and McGuire (2003), discussion with the Kentucky League of Cities, and personal experience, I drew a list of 14 policy issues as issues of interest to cities about which they might cooperate. I asked the mayors to mark three which were most prominent in their city. Economic Development was the most often cited issue, followed by budgeting, and then public safety.⁵⁷ No mayor listed purchasing or collective bargaining, and only one mayor listed civic events (such as festivals or parades) as major issues. There were six “other” responses (lost revenue, water quality, and unfunded mandates). Spillover, which is measured by distance, was calculated using the great-circle route based on the longitude and latitude of cities as listed in the ESRI Kentucky map data. This is the shortest distance traveling on the surface of the globe, rather than traveling on roads.

The second set of variables was the interest group community facing each city. Mayors were again asked to choose 3 groups from a list of 11 groups. County governments and local individual businessmen were tied for most cited, followed by the area chambers of commerce, and then local civic groups (Rotarians, for example). No mayor listed industry councils or racial community leaders. There were three “other” responses (retirees, neighboring governments, and the local college). Area Development Districts, were not included in the question because cities are constituents of ADDs and the goal of the question was to learn of the constituent groups of the city. County residents (and their elected officials) can also be residents of the city.

⁵⁷ While visiting the KLC Expo in Lexington, KY on October 4, I spoke with several mayors and city commissioners. Commissioner Robert Blythe of Richmond, KY, mentioned that there had been a recent court case regarding the pay scale for public safety workers –especially fire fighters. This was going to have a big impact on budgeting. The two are not, therefore, completely unrelated.

The third set of variables was characteristics of the mayors. Mayors presumably have an easier time interacting with mayors who are personally similar to themselves. Mayors were allowed to answer these questions freely. The responses were then coded as numbers so that differences could be calculated. The numbers for categorical values do not matter, only whether they match. For continuous values, such as “number of years served,” text answers –such as “two terms” –were converted to numbers, such as 9, two four year terms plus the one year of the current term. Mayor’s previous occupation was categorized by three-digit NAICS industry code with the following exceptions: business owners were categorized together, rather than by the business they ran; elected officials were grouped separately from other government officials, and real estate developers were separated from realtors. In all three cases this is because business owners, elected officials, and developers are all potential government entrepreneurs and so are different from the rest of their industry. Where multiple previous careers were listed, the first career listed was used. Where the previous career was ambiguous across three-digit codes, they were called a match with others within the 2-digit code.⁵⁸

For these first three groups of variables, similarity should increase the probability of cooperation. All three sets of variables represent areas of potential confluence of interests. The fourth set includes some variables which may need to be different to encourage communication.

The fourth set of variables was city characteristics. The percent of the population which was black, Hispanic, and white was collected, but the variables co-vary muddying

⁵⁸ Came up in only 2 cases: “health care” and “blue collar.” In total, Kentucky mayors came from the fields of Legal Services, Education, Company Management, General Government Support, Public Safety (police), National Security (Military), Churches, Health Services, “blue collar” (presumably mining, utilities, construction, or manufacturing), elected officials, real estate developers, and business owners.

the analysis. Whites being the majority in all cases, large differences between cities on this measure indicate that one city has a more sizable minority population than the other. That, in turn, reflects a difference in the local context between cities. Largest occupation is the modal NAICS industry of men living within the jurisdiction while largest employer is the modal NAICS industry of businesses located within the jurisdiction by employment. The same religious denomination is by major religious denominations –in this case Southern Baptist or Catholic, with two Methodist cities. In addition to these variables, being in the same county and same ADD are expected to produce contact between mayors. These represent similarly situated jurisdictions. Differences in the median income, median property value, county unemployment, population, population with higher education, and city class represent different resources which might induce contact to combine resources to accomplish a goal. Net commuters represent that a jurisdiction has jobs –controlling for unemployment, while median property value and median income indicate financial resources. Different city classes have different taxation and legal powers. An educated population is a resource of its own in addition to simply having population. These could also be treated as similarities. While differences in financial resources might give two cities cause for contact (trade additional population and jurisdiction for financial support), it could also be that rich cities only want to work with other rich cities. To determine which is correct, the next section analyzes the data.

6.5 Analysis of the Network of Kentucky Mayors

For analysis, the data matrices were loaded into UCINET 6, a dedicated social network analysis software suite. The hypotheses listed at the end of section 3 regard predicting the existence of a tie –a 1/0 variable –so a limited dependent variable formulation is the proper model. However, the distributional assumptions of probit and logit are clearly inappropriate in the case of a contact matrix, and in any case, no standard type of regression is designed to work with matrices rather than vectors.

To regress a contact matrix on similarity matrices, each matrix is broken up into a vector of dyads. Each dyad represents a city-pair where each row is a relationship with a city and each column is a variable. Therefore, for the variable “contact” the row is city_i-to-city_j and the column is a 1 if city_i and city_j have contact, and 0 otherwise. For distance, the cell is the distance in miles separating the cities, and so on. These vectors can be regressed. However, the regression is biased because network relationships are dependent on each other. If i and j are connected, and j and k are connected, then it is likely that i and k are connected as well. If the distance from i to j is known and the distance from j to k is known, then the distance from i to k is restricted by mathematics. The more nodes in the network, the more restricted the possible values are. These linear dependencies in the rows bias the standard errors and cannot be removed.

There are several possible solutions to this problem. With the data constraints on this survey, the solution used here is UCINET’s Quadratic Assignment Procedure, or QAP (pronounced “quap”). QAP computes correlations and produces standard errors through the creation of data permutations. First, the dyads are correlated and the estimated correlation saved. QAP then reforms the original dependent variable matrix

and randomly permeates the rows and columns so that a new matrix created, but filled with random noise. It then repeats the correlation, saves the estimate, and repeats the process. After thousands of permutations, it has a distribution of estimates that come from random noise and the mean of that distribution can be compared to the original estimate from the non-noise data. The distribution's standard errors can be calculated, and so 95% confidence intervals can be calculated. The procedure then counts the number of correlations between the explanatory variable and the random noise which were as strong as those correlations computed between the real dependent variable. For negative values it counts how many were as small, and for positive how many were as large. The percent equally small (large) or smaller (larger) is the p-value. The process works the same way for multiple regression (called MRQAP –“mer-quap”). Because of the small sample size, non-linear models such as probit or logit are not possible, so the MRQAP estimation will be a linear probability model. The results of this LPM are displayed in Table 6.5.1.

6.5.2 Results

The model explains approximately 19% of the observed variation and has X^2 probability of less than .001. There is a lot of noise, but the estimated coefficients are distinguishable from each other and not all zero. Unexpectedly, similarity of issues is usually negative –indicating that if two mayors share the same issues they are less likely to have contact. They are also mostly indistinguishable from zero. The two issues with significant coefficients –recession response and strategic planning –are both signed as expected. Distance is signed as expected, but insignificant. Sharing concern for both

planning and recession response would make two given mayors 18.1% more likely to have contact with each other.

Of the possible interest group community matches, only church groups are significant, and that only at 10%. If two mayors both had contact with churches in their cities, they are 3.6% more likely to have contact with each other. While not significant, half of the potential interest group similarities are negative. Both having contact with county governments, development corporations, special districts and utilities lead to less probability of contact between mayors.

Mayor characteristics are uniformly insignificant except for the difference in age. For every decade separating two mayors in age they are 1% less likely to have contact with each other. The other variables, while not significant at standard levels, are mixed. Differences in education and past profession are associated with less contact as predicted. However, being the same race and same sex are associated with less likely contact, and the greater the experience gap, the more likely mayors are to have contact with each other.

The most significant variables are among the city characteristics. Having similar demographics and being in the same county were both associated with higher probabilities of contact, as expected. Differences in income, however, do not lead to more likely contact, but less. It is significant, but small. The largest possible difference is \$124,000, which corresponds to just under 12.5% less probability of contact. The most interesting variable –due to its high significance –is sharing an Area Development District. Not only is it highly statistically significant, but just sharing an ADD increases

the probability of mayor-to-mayor contact by 20%. Cities which share both county and ADD are 35% more likely to communicate with each other.

Table 6.5.1 Results of MRQAP Linear Probability Model Predicting Inter-Mayor Contact in Kentucky Cities

Contact	Coeff.	P-value	As Large	As Small		Contact	Coeff.	P-value	As Large	As Small
Intercept	0.154									
Issues						Mayor Characteristics				
Distance (100 miles)	-0.007	0.772	0.228	0.772		Differences in length of Term (in years)	0.001	0.13	0.13	0.871
Budget	-0.003	0.694	0.664	0.694		Same Sex	-0.014	0.183	0.818	0.183
Economic Development	-0.010	0.376	0.625	0.376		Same Race	-0.064	0.103	0.898	0.103
Grants	-0.019	0.298	0.702	0.298		Same Profession	0.017	0.133	0.133	0.867
Strategic Planning	0.056	0.049*	0.049	0.951		Education (ordinal)	-0.007	0.104	0.897	0.104
Recession	0.125	0.056+	0.056	0.944		Age (difference in years)	-0.001	0.045*	0.956	0.045
Gov. Relations	-0.019	0.496	0.504	0.496		City Characteristics				
Public Safety	0.012	0.222	0.222	0.779		Difference % White	-0.001	0.037*	0.963	0.037
Sanitation	-0.019	0.186	0.814	0.186		Population (difference in 1000s)	0.001	0.249	0.249	0.751
Streets	0.003	0.386	0.386	0.614		Same Occupation	-0.014	0.168	0.833	0.168
Taxes	-0.006	0.101	0.9	0.101		Same Industry	-0.001	0.488	0.513	0.488
Zoning	-0.008	0.609	0.391	0.609		Difference in Income (1000s \$)	-0.001	0.024*	0.977	0.024
Interest Groups						Difference in Housing Value (1000s \$)	0.000	0.527	0.473	0.527
Businessmen	0.012	0.324	0.324	0.677		Same Denomination	0.000	0.411	0.411	0.59
Chambers of Commerce	0.009	0.285	0.285	0.716		Difference in Unemployment (%)	-0.002	0.324	0.677	0.324
Churches	0.036	0.062+	0.062	0.939		Both County Seats	-0.011	0.137	0.863	0.137
Civic Groups	0.018	0.205	0.205	0.795		Same County	0.150	0.002*	0.002	0.999

Table 6.5.1 Continued

Contact	Coeff.	P-value	As Large	As Small		Contact	Coeff.	P-value	As Large	As Small
Interest Groups (cont)						City Characteristics (cont)				
County Government	-0.010	0.236	0.764	0.236		Difference in Commute Change (1000 people)	0.003	0.212	0.212	0.788
Development Corporations	-0.031	0.19	0.81	0.19		Difference in City Class	-0.008	0.134	0.867	0.134
Special Districts	-0.074	0.278	0.722	0.278		Difference in BA+ (%)	0.000	0.406	0.594	0.406
Neighborhood Associations	0.025	0.223	0.223	0.778		Same ADD	0.207	<0.001**	0	1
Utilities	-0.033	0.11	0.891	0.11						

+ significant at 10% level

* significant at 5% level

** significant at .1% level

R ²	0.191
Adj R ²	0.181
Chi ² Prob	<0.001
Obs	3306
Iterations	2000

6.6 Conclusions

The results of the model are mixed. The low R^2 and the shortage of significant estimates indicates that there is a lot going on which is not explained by this model or lost in the low response rate. However, there are three general conclusions that can be drawn from it. First, there is evidence that homophily and social focus increase inter-city contact. Second, there is something about strategic planning and recession response which is different from other types of issues. Third, model and theory need to be revisited, especially if more data can be gathered.

The evidence is ambiguous or disheartening for the interest group theory of inter-jurisdictional cooperation. Similarity of the interest groups is generally insignificant, and most policy issues are insignificant, and the significant coefficients are generally small. There is only a little support for homophily or similarity of goals and situation, and virtually no evidence of the need for complementary resources. The evidence is not outright contradictory, but that is because most of the unexpectedly signed variables are not statistically significant. The evidence seems most consistent with a social focus story. ADDs and counties provide a place for mayors to communicate and this, in turn, produces bilateral contact. Perhaps the general finding that cities are autonomous grows more from the lack of opportunity to talk with other mayors than from the desire to avoid the meddling of outside forces.

The two issues upon which agreement correlated significantly with higher probabilities of contact are interesting in their own right. Strategic planning and recession response both concern keeping the city financially and economically sound into

the future. They do not directly deal with service provision or the immediate administrative needs of the city. Both also affect territory beyond the city's borders.

There are several possible interpretations of this. First, it may mean that inter-city contact is not for routine city activity. Cities worry about their own public safety, taxes, and zoning. Unusual events –like a recession –or responses to a changing future are outside of what cities do every day, and so it is for those issues they seek outside support. This would suggest outside contact is mostly about information. If an issue is unusual, then another city might have useful ideas.

Second, it may mean that city to city contact is based on cross-jurisdictional policy issues. Cities may want to communicate with other planners simply for coordinative purposes –they do not want to get in each other's way. Communication is an easy way to avoid inadvertent conflict later. Recession response falls under the same structure. One city's response can affect another by shifting employment, for example. How one city polices itself is less likely to affect another city. In this case, contact serves to encourage autonomy by allowing cities to avoid potential conflicts.

Third, this pattern may reflect the benefits from economies of scale. Strategic planning and recession response are likely to have cross-boundary effects and are also very expensive. If it is important to the city to develop plans for the future, then it would be worth cooperating with another city to defray the costs if the alternative is not having the resources to plan at all. Bolstering this interpretation is the effect of the ADDs, which exist to support planning and development among cities. Potentially, those for whom strategic planning is important are more likely to use ADDs, where they meet others who want to develop plans for their cities, and thus contact is started.

Fourth, and related to the second and third interpretations, this could be evidence that city governments look mostly to their geographic peers as assumed in the prior urban organization literature. This interpretation is hard to prove because few large cities –and neither of the two largest central cities –responded to the survey.

Unfortunately, none of these theories can be conclusively proven or disproven from this evidence. Are cities using contact to protect their autonomy, to address spillover, or to address novel problems? Do cities decide to maintain their own relationships, or are they limited by the existing social focus? Perhaps they do a little of all of these things. More data and more analysis are required to narrow these down.

Most problematic for this theory of group/city cooperation is that complementary resources did not matter. To the extent money, people, and legal power affected contact between mayors, it was similarity that brought them together. Is this because cities are inherently powerful groups? Is it that cities do not engage in contact or cooperation that requires additional resources? Or is it that cities are somehow radically different from other types of interest groups? One way to narrow this down would be to find data on an activity where different resources would be expected to matter –such as lobbying (one provides votes, another money, and another political connections) –and determine whether different resources matter in that case. Without more data the effect of resources cannot be distinguished from noise or from benefits derived from economies of scale.

It may also be useful to break up some of the continuous variables to analyze different behaviors of different sized cities. Perhaps differences in wealth and population only matter conditional on the cities being total opposites (that is, one city must be large and poor and the other small and rich). In this model, city pairs where one is rich and

large and the other is poor and small are treated the same as the opposites case –both of them have large absolute differences.

Breaking up the continuous variables would also allow for testing the effect of policy similarity and interest group similarity within certain types of cities. Economies of scale for addressing public safety, for example, may be more important to small cities than large cities, but there is no measure for “both cities are small.” Doing any of these analyses will require more data.

The analysis is also hampered by the limited data on social and personal characteristics. Survey questions were limited to improve response rate, which was the reason for supplementing with city-data.com variables. However, the available data was also limited.

In the final analysis, the full theory is unconfirmed. Mayors have contact when they have a focus to encourage that contact –county governments and Area Development Districts. Certain types of homophily encourage contact further. However, there is still a lot unknown and further exploration to be done. There is no evidence to support cities having contact when they have different resource levels. Either cities do not make a habit of buying support from their neighbors or the behavior is more limited than this analysis can detect. Whatever is happening between cities in this sample, generalizing is probably not wise because of the low response rate. Further investigation is needed.

However, the effect of homophily and focus on cooperation are interesting alone, and interact with the findings of the previous chapters. The final chapter summarizes all the findings and draws conclusions from all the results.

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Chapter 7

Conclusions

7.1 Summary

Throughout this dissertation, I have explored the implications of treating cities like interest groups. The historic research into metropolitan consolidation and fragmentation, the debate over which is the best way to organize the metropolis, and the growth of the urban landscape into suburbs can all be better understood by recognizing cities as being more than just places where people live and get services. They are places where residents identify with their neighbors, and where residents get to choose what their services are going to be. Like any other interest group organization, this has effects beyond ideal forms of efficiency.

I have developed a theory of cities as interest groups and explored the implications on urban organization and city behavior. I have tested these implications against data from US cities and a survey of Kentucky mayors and have found:

- 1.) Urban organization is slightly different in the metropolis compared to the rest of the United States
- 2.) Both in and out of the metropolis, urban fragmentation is dependent only on the resources and demographics of the geographic area. City formation is neither addictive nor tiring.
- 3.) Across all cities, fragmentation increases with more resources
- 4.) Across all cities, fragmentation increases with more population diversity
- 5.) In the MSA, fragmentation is due to political preferences and financial resources (particularly tax base resources)

- 6.) Out of the MSA, fragmentation is due to political preferences, population diversity, industry diversity, and financial resources (particularly intergovernmental revenue from states) –but racial diversity leads to more consolidation.
- 7.) The price of government is more important outside the MSA than inside the MSA.
- 8.) While government fragmentation does not prevent population concentration within few jurisdictions in the MSA, outside the MSA, government fragmentation leads to populations spread more evenly across multiple jurisdictions.
- 9.) Many Kentucky Mayors do not have contact with anyone else.
- 10.) Kentucky Mayors that to have contacts have contact with each other based on sharing a social focus (Area Development Districts and Counties)
- 11.) Kentucky Mayors do not contact each other due to issue, city or personal similarity in most cases.
- 12.) Differences in resource allocation do not lead to more contact.

These twelve findings suggest some interesting ideas. The rest of the chapter proceeds in four parts. In part 2, I discuss what the differences between MSA and Non-MSA fragmentation might mean. In part 3, I discuss what the evidence from the social network of mayors can say in light of the fragmentation chapters. In part 4, I discuss the policy implications, and I conclude in part 5.

7.2 Conclusions on MSA and Non-MSA Fragmentation

The similarity between MSA and non-MSA fragmentation is important. In both analyses, more resources and more diversity correlated with more governments all else equal. This is strong evidence that the same things which influence the proliferation of interest groups also influence the proliferation of cities. These influences do not change at the edge of the metropolis. Individuals still prefer organizations which provide a better fitting service and they are willing to pay more for it. The American people do not have a preference for fragmentation, they have diverse preferences and this manifests as the proliferation of different cities. Each city provides the best fit of services and residents it can. Where resources are scarce, cities have to make do with cheaper, but less well fitting, services. This does not change at the border of the metropolis. The environment does, though.

As suggested in Chapter 3, the effect of agglomeration and amenity within the metropolitan area makes smaller cities easier to produce. The amenity can attract residents to the metropolitan area and the city only has to provide a few better services to attract residents to a specific jurisdiction. Residents get the rest of their services and benefits from the neighboring jurisdictions. This does not work away from the metropolis. The commute to another amenity is too long.

Outside the metropolis, government is more expensive because it has to provide more. Governments cannot rely on their neighbors to provide benefits. The more expensive governments rely more on economies of scale, so they have to be larger. As

the analysis showed, cost of government was a factor outside the MSA. But why do social, racial, and economic characteristics matter more for these more expensive non-MSA cities? One possibility is that, inside the MSA where governments are small and limited, it is possible to support numerous jurisdictions that still share some characteristics. Where government is cheap, African-Americans can subdivide by economic class or preference for gardens or something else –similarly to the way individuals do in social situations (Mehra, Kilduff, and Brass, 1998). Whites can do the same thing. Increasing the diversity of the population would create some additional fragmentation, but that effect is swamped by the fragmentation coming from plentiful resources and cheap government. Outside the MSA, where governments have to be full service, subdivision is not possible. A more diverse population still needs large jurisdictions to take advantage of economies of scale. If the population is constant, but becomes more diverse and there are enough minority residents, they can create a minority-jurisdiction. However, this takes residents away from the other jurisdictions which are now too expensive to operate –leading to consolidation. The more diverse the population becomes, the larger the minority jurisdiction becomes and the more the other jurisdictions have to consolidate to maintain their economies of scale.

This also explains why additional wealth spreads the population across multiple jurisdictions outside the MSA. In the MSA, additional wealth makes new small cities possible around the central city. Outside the MSA, it allows for the creation of fewer larger full-service jurisdictions. Inside the MSA, the proliferation of small cities does not shift the balance of the population –most still live in the central city. Outside the MSA,

the new jurisdiction is closer in size to its neighbors, and so the population balance is shifted towards more fragmentation.

Another possibility offered by the literature –particularly Teaforde’s history of suburbanization –is that the different behaviors within MSAs and outside MSAs and between governments and populations is caused by the presence of unincorporated land outside the MSA. Outside the MSA, living in a rural area under county government is possible. As such, part of what determines the non-MSA county’s population fragmentation is how much those residents want cities in the first place. That portion of the population which wants to move into cities will cause fragmentation simply by not living in the unincorporated land. In an MSA, they would carve out a new city or take over an existing one among the many already established. Outside the MSA, the first people who want to live in a city double the number of jurisdictions.

This would also explain the differences in the annexation laws. Among those who live in cities, the power to annex nearby territory would be very useful. They could bring in new land and new residents. This makes forming a new city attractive, and so it appears in the analysis of general governments. However, for those who want to live outside of cities, it is horrible. Their non-incorporated homes will be eaten up by the surrounding cities until it is –hypothetically –gone. Without a way to fend off annexation, unincorporated residents either lose their jurisdiction, and thus reduce the population fragmentation, or they pro-actively incorporate. The newly incorporated cities drive up the number of governments –but it is being driven by large cities annexing new residents. It also explains why, in those states where unincorporated residents can fight off annexation either through referenda or lobbying county government, the opposite is

found. There are fewer general governments because no new cities spring up to fend off annexation. The population spread across the unincorporated county then increased the fragmentation of the population. Greater wealth would fit into the explanation because it allows residents to live further away from the cities even if it is expensive.⁵⁹ Wealthy residents in the MSA can buy a city they share with others. Wealthy residents outside the MSA can buy a ranch they share with no one. These two possibilities are not mutually exclusive. It is possible that greater wealth could result both in more people choosing to live without city services and more urban fragmentation –but fragmentation made of bigger cities when it happens.

Testing these explanations would require establishing whether there was more fragmentation in the periphery of an MSA (that is, the cities not including the central core) or in non-MSAs. It would also require showing that cities within MSAs (again, excepting the core city) are more specialized and cheaper than cities outside the MSA. The question of whether rural living is cheaper than urban living would also be an important component. Since the premise that MSA cities can be more specialized is based on the ease of commuting, some measure of distance between jurisdictions is needed to show that non-MSA cities are actually further apart than their MSA counterparts –either in distance or in time. If MSA cities are more specialized and smaller due to the value of the central city, than the larger and more valuable the central city is, then the more fragmented will be the periphery.

Finally, there is something unusual about metropolises relative to other urban areas. My suggestion is that it is the amenities of the metropolis which can be gained

⁵⁹ Though whether rural living is actually more expensive than city living is a question not addressed in this analysis.

through commuting. This indicates that the governance of a metropolitan area is more complicated than mere fragmentation alone suggests. Cities in the metropolis can be small because they rely on their neighbors to specialize. This also means that it is possible to free-ride. Residents can live in a jurisdiction which provides nothing except a haven from other jurisdictions, and then get all their services from other cities.

7.3 Conclusions on Fragmentation and Social Focus

Fragmentation stems from the desire of interest groups to maintain autonomy which is close to their preferences. This also leads to groups avoiding contact with other groups. Cooperation costs autonomy and competition costs resources. Urban areas are known to be fragmented, and Kentucky mayors are known to avoid numerous contacts. Where contact does happen is where it is easy and cheap –at a social focus. When cooperation is cheap, city leaders are more willing to communicate even when they lack common goals or resources.

However, similarity among cities or mayors did not generally lead to contact. Differences lead populations to fragment into multiple jurisdictions, but the remaining similarities are not adequate to promote communication across cities. This suggests that cities really do value their autonomy.

Cities value their autonomy enough to be organized around legal authority and financial resources. When resources are different between cities, they are less likely to communicate. Either the wealthy do not want to influence their neighbors or the poor do not want to be beholden to the wealthy. Both indicate that cities prefer to mind their own

business where possible. It would be interesting to see if this holds across metropolitan and non-metropolitan areas. Would metropolitan jurisdictions be more willing to interact with each other? Perhaps the existence of a central city would provide more of a social focus than the decentralized non-metro areas.

7.4 Policy Conclusions

The evidence presented in this dissertation is broadly supportive of the theory that cities are like interest groups. They seek niches and autonomy, they may avoid cooperation and competition when possible, they strive to control resources, and they must balance the benefits that come from economies of scale against the risk of being undercut by cheaper or better fitting services provided by another entrepreneur.

States have a good deal of control over how fragmented their local governments become. Fragmentation depends in part on the availability of resources –including money and legal authority. Therefore, if a state wishes to consolidate its local governments it should stop transferring money to them, revoke some of their legal authority, and generally make local government more expensive. Likewise, if they wish to support fragmentation, then transfer additional money, provide greater authority, and subsidize local government.

The power of these state interventions is limited, however, by the population the state wants to affect. Diverse populations with diverse preferences can only consolidate to a point before the ill-fitting services outweigh the economies of scale. A more strategic state might consider looking for relatively homogeneous areas which would

make good candidates for consolidation rather than trying to force consolidation statewide. It might also look at particularly diverse jurisdictions as places to allow more fragmentation or flexibility.

Affecting urban organization is also limited by the power of amenities. If it is true that valuable amenities in central cities allow smaller suburbs, and that agglomeration is a valuable amenity, then trying to consolidate metropolitan areas is ultimately self-defeating. The more agglomerated the central city, the more fragmented the periphery. Attempts to consolidate the center of a metropolitan area will only push the fragmentation further away from the core. This effect would be complicated by the county boundaries, annexation rules, and residents fleeing into unincorporated land. Consolidation is possible, but it is very difficult.

The governance of the metropolitan area is also more complicated than it first appears. There are many groups which must be attended to. They all have diverse preferences, but they also share the desire to maintain the amenity which anchors the metropolis. Maintaining the metropolis requires effort and resources, and gives the constituent jurisdictions reasons to prevent free-riding. Finding ways to ensure that every jurisdiction in a metropolis contributes something to the maintenance of the area would be an alternative to consolidation which allows autonomy. Research into this field would be particularly useful to metropolises.

Finally, if it is not possible to force full consolidation, and metropolises need to be governed cooperatively, then communication has to be encouraged across metropolises. The same is true of non-metropolitan urban areas. However, cities cannot be forced to communicate and they still value autonomy. The best policy solution is not to hope city

officials call one another, or just throw them all in a room. They need a focus. Communication could be improved far more with a monthly breakfast to discuss infrastructure projects (Thurmaier and Wood, 2010) than with a list of cities concerned with the same issues.

7.5 Conclusion

For decades, scholars have argued about the best ways to organize urban areas, but the source of urban organization has largely been ignored. In this dissertation, I have described a theory which can explain the pattern of urban organization in metropolitan and non-metropolitan areas. Cities are a form of interest group, concerned with maintaining a niche of homogeneous preferences and controlling the resources necessary to maintain the city. I have tested that theory against data from American counties and Metropolitan Statistical Areas and the theory is supported by the evidence. There is still much more to learn, and further implications of this theory to explore.

Appendix 1: Crosswalk for Converting 2-digit NAICS Code to SIC Divisions

SIC Division	NAICS Category	SIC Range	Anomalies Within Category
A Agriculture	11 Agriculture	01-09	Landscaping and Veterinary services
B Mining	21 Mining	10-14	Geophysical Mapping
C Construction	23 Construction	15-17	Remediation Services
D Manufacturing	31-34 Manufacturing	20-23	None noted
D Manufacturing	511 Information: Publishing	27	Prepackaged Software
E Transportation, Utilities, and Communication	48-49 Transportation and Warehousing	40-45	Tourism, Shipbuilding, FAA
E Transportation, Utilities, and Communication	513 Information: Broadcasting	48	None noted
E Transportation, Utilities, and Communication	562 Administrative and Support: Waste	42-49	Repair Services and Contractors
F Wholesale Trade	42 Wholesale Trade	50-51	Some service industry
G Retail Trade	44-45 Retail Trade	52-59	Repair Services, some wholesalers
G Retail Trade	722 Accommodations and Food Service: Food	58	Transportation
H Finance, Insurance and Real Estate	52 Finance and Insurance	60-67	None noted
H Finance, Insurance and Real Estate	531/3 Real Estate and Rental	60-67	General Warehousing
H Finance, Insurance and Real Estate	55 Managerial Services	67	None noted
I Services	512 Information: Motion Picture and Sound	78-89	Recordings and Sheet Music
I Services	514 Information: Data Processing	73-89	None noted
I Services	532 Real Estate and Rental: Rental	73-79	Boat and Railroad rental
I Services	54 Professional Services	73-89	Titling, Surveying, Landscaping, and Veterinary
I Services	561 Administrative and Support: Office	73-89	Travel Agents and Sanitation
I Services	61 Education Services	72-87	None noted
I Services	62 Health Services	80-83	Ambulances, Airlifts
I Services	71 Arts, Entertainment, Recreation	79-84	Dinner Theaters, Stadiums, Marinas
I Services	721 Accommodations and Food Service: Hotels	70	None noted
I Services	81 Other Services	75-89	Education, Religion, Cemeteries, and Real Estate
J Public Services	92 Public Services	90+	Indian Affairs

Appendix 2: Contact Letter and Survey Instrument for Survey of Kentucky Mayors

1 September 2011

Dear Mayor (mayor's name);

My name is Matthew Howell, and I am writing my dissertation on local government organization in the Martin School of Public Policy and Administration at the University of Kentucky. Many local governments serve their residents by building relationships with other local governments. Some cities coordinate their city functions like urban planning or public safety services, while other cities maintain social, business, and community ties. For residents and officials, local government is a network of governments.

However, this facet of local government is still poorly understood. In conjunction with the Kentucky League of Cities, we would like your help in better understanding how these government networks form by answering a short survey about yourself, your city, and the other mayors you interact with. This data will help improve our understanding of local government, but it will also help the Kentucky League of Cities (KLC) serve you better by showing the network of local governments –which can be used to plan trainings, events, seminars, and other services and support.

If you are willing to help build our knowledge of Kentucky local government, please answer the questions by October 7th at:

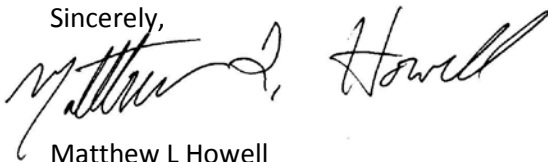
<https://www.surveymonkey.com/s/KYmayors>

If you cannot fill out the survey online, I can mail you a hard copy, or you will be able to add your experience to the database at the KLC Conference and Expo in Lexington on October 4-7. A hyperlink will also be in the KLC Direct Line e-newsletter.

Your information cannot be made anonymous or confidential. The data will be made available on the web through KLC, allowing you to see the whole network and your place in it. The final report will also be available through KLC, or via my contact information below. If you have any questions, do not hesitate to call or e-mail me.

Thank you for helping us improve our knowledge of local government and improve the Kentucky League of Cities' service to you.

Sincerely,

A handwritten signature in black ink, reading "Matthew L. Howell". The signature is fluid and cursive, with the first name "Matthew" written in a more stylized, connected script, and the last name "Howell" written in a more standard cursive.

Matthew L Howell

Martin School of Public Policy and Administration

University of Kentucky

mlhowe2@g.uky.edu

(859)-327-1221

Consent to Participate in
A
Survey of the Social Network of Kentucky Mayors
And
Select Antecedent Relationships that Support the Network

Principal Investigator: Matthew Howell

Martin School of Public Policy

University of Kentucky

Thank you for helping us learn more about the social network of Kentucky Mayors. This survey will ask you about your city's policy issues, which other mayors you interact with, and some questions about you. I hope to learn from your answers how Kentucky Mayors are connected to each other, and what leads to these relationships.

The principal investigator for this study is Matthew Howell, a PhD candidate in the Martin School at the University of Kentucky. Assisting in this is Edward Jennings, PhD, a faculty member and the dissertation advisor for this project. You may contact Matthew at any time with questions about the study, or you may contact the UK Office of Research Integrity with questions about how we treat your data.

Matthew L Howell, Martin School

mlhwe2@g.uky.edu

(859) 327-1221

Helene Lake-Bullock, ORI

helene.lake-bullock@uky.edu

(859) 257-5943

Before beginning, you should know that network surveys cannot be confidential, and the data from this survey will be available on the web. This will allow you and other to see your position in the network of mayors. Even removing your name from the data, your city and location could still be determined. If you do not wish to participate in this survey, do not continue. Participation in this survey is up to you and no one will be mad if you choose not to participate or later decide to opt out. You can quit the survey at any time.

Continuing to the survey means that you have read this page or had it read to you and you want to be in the study. You agree that you have been told about this study and why it is being done and what to do. It should take 15-30 minutes at the longest, depending on how many contacts you have.

Thank you again for your help.

**Consent to Participate in
A
Survey of the Social Network of Kentucky Mayors
And
Select Antecedent Relationships that Support the Network**

Principal Investigator: Matthew Howell
Martin School of Public Policy
University of Kentucky

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If you wish to take this survey, please sign and print your name on the lines below and return it with your survey. This signifies that you have been told about this study, why it is being done, and what to do. It should take 15-30 minutes at the longest to complete, depending on how many contacts you have.

Thank you again for your help.

Signature of person agreeing to take part in the study date

Signature of authorized person obtaining informed consent & date
part in this study

Printed name of person agreeing to take

Survey of the Social Network of Kentucky Mayors

Thank you for taking the time to answer these questions. Your cooperation will help expand the knowledge of how local governments can better serve their residents, and improve the ability of organizations such as the Kentucky League of Cities to support local governments. Thank you again for your help.

Before beginning select your name and city from the list.

1. What are three major issues that you consider most prominent in your city?

- 1) Purchasing and Inventory
- 2) Balanced Budget
- 3) Taxes
- 4) Recession Response
- 5) Public Safety
- 6) Economic Development
- 7) Collective Bargaining
- 8) Street Construction and Civic Engineering
- 9) Sewage and Solid Waste Disposal
- 10) Civic Event Management
- 11) State or Federal Grant Applications
- 12) Zoning and Land Development
- 13) Developing relationships with other governments
- 14) Strategic Planning
- 15) Other

2. Which three of these groups or people are most prominent in your city?

- 1) Local Development Corporations
- 2) County Government
- 3) Chamber of Commerce
- 4) Local Utilities
- 5) Neighborhood Associations
- 6) Special Districts
- 7) Private Industry Council
- 8) Individual Businessmen
- 9) Church Committees or Leaders
- 10) Racial, Cultural, or Ethnic civic leaders
- 11) Civic Organizations (Rotary, Lions, et cetera)
- 12) Other

3. What Kentucky mayors and their cities do you personally interact with as mayor for official reason?
4. What non-Kentucky cities do you personally interact with as mayor for official reasons?

Please answer some questions about yourself:

1. Age
2. What was your profession before you got into politics?
3. What office, if any, did you hold before running for mayor?
4. How long have you been mayor?
5. Sex/Gender
6. Race/Ethnicity
7. Where did you receive your last degree? In what year?
8. What opportunities do you take to network?

This information is very useful to understanding how mayors choose to interact with each other. Equally helpful, though, are the details of your work, which can provide special information not picked up in surveys, such as what type of relationships you have and how important you consider them. Would you be willing to talk about your city and your relationship with other mayors in a follow-up interview?

No

Yes

Would you like to receive a copy of this report at its conclusion?

No

Yes

What is your contact information?

Finally, what are some opportunities that you would like to see the Kentucky League of Cities offer to better help you communicate with your fellow mayors and cities? Particularly, are there internet devices like mailing lists, social networking software, or apps that you would like to see?

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VITA

Matthew Lee Howell

Date and Place of Birth

16 April 1984, Anchorage, Alaska, USA

Education

BA Missouri State University, Springfield, Missouri, 2006

Professional and Graduate Research Experience

Research Assistant, Martin School of Public Policy & Administration
University of Kentucky
2006-2011

Publications

July 2011, Center for Business and Economic Research at UK Research Reports
“Kentucky Ranks 33rd on Education Index” with Michael Childress

Research and Conference Presentations

“Lines in the Sand, Lines on the Map: Group Formation and the Fragmentation of the Metropolis,” Presented at Southeast Conference for Public Administration, Wilmington, NC -15 October 2010

“Lines in the Sand, Lines on the Map: Group Formation and the Fragmentation of the Metropolis” (Earlier Draft with poorer data) Presented at Mid-Continent Regional Science Association, St. Louis, MO -6 June 2010

“To Him that Has: The Distribution of Federal Grants Among Cooperating Kentucky Counties.” Presented at Kentucky Political Science Association, Louisville, KY -7 March 2009

Research Awards

- 2010 William S Collins Award for Best PhD Student Paper, Southeast
Conference for Public Administration
Honorable Mention for paper
“Lines in the Sand, Lines on the Map: Group Formation and
the Fragmentation of the Metropolis”
- 2009 Nominated for Hughes Award for Best Paper Presented at Kentucky
Political Science Association for Conference for paper
“To Him that Has: The Distribution of Federal Grants Among
Cooperating Kentucky Counties.”

Honor and Professional Organizations

- 2011 American Political Science Association
- 2007 International City Manager’s Association
- 2003 National Society of Collegiate Scholars
- 2002 ΦHΣ National Honor Fraternity
- 2001 National Honors Society