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Cities Awash in a Sea of Governments: How Does Political Fragmentation Affect Cities and Their Regions?

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Abstract

Is political fragmentation within the metropolitan area and within central city government a cause of central city decline or just the benign evolution of governance? Advocates of regional governance consider political fragmentation, the number and types of governments in a metropolitan area, a causal factor in decline. However a multiplicity of governments offer individual households greater choice and variety, in other words fragmentation represents the will of the people. All metropolitan areas are fragmented to some degree and whether or not this is harmful to cities and their regions is the empirical question considered. Political explanations on the impact of fragmentation break out into two overarching groups. One school of thought argues that regions struggle and experience slow growth or decline because the problems of the central city act as an anchor pulling the region down, while the other school believes cities struggle due to competition from other governments in their metropolitan area for residents and economic investment. This dissertation seeks to test the long term effects of political fragmentation across metropolitan areas on region-wide segregation, population and own-source revenue in 100 central cities from 1950 through 2000.

Political fragmentation is broken down into horizontal and vertical fragmentation, which considers the impact of geographically coterminous governments and jurisdictional overlap, and also includes internal fragmentation, which is the division of governing authority among elected officials. The results of the analyses show that horizontal fragmentation increases segregation across metropolitan areas and reduces the city's share of regional population. Both vertical and horizontal fragmentation are shown to increase the own-source revenue of central cities, and evidence is presented that shows

internal fragmentation also increases own-source revenue. Essentially city residents pay more in taxes living in cities with more elected officials, and are surrounded by higher numbers of government and jurisdictional overlap. Fragmentation at the metropolitan level is complex but it is clear that high levels can pose problems to both the city and its region. The implications of these results are thoughtfully analyzed and recommendations are made for future research.

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I dedicate this dissertation to my sons, Cedric James and Elias Jack; may your curiosity lead you to ask many questions but may you never give up until you arrive at an answer.

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Chapter 1

An Introduction to the Puzzle

In 1876 our nation was both on the cusp of the Industrial Era and participating in one of most dubious presidential races in our history. St. Louisans, however, were paying more attention to issues on the home front. In what can only be described as an ironic distortion of our nation's history, the city described then and now as the gateway to the Western territories had slowly begun to turn away from its own western – and other – counties. In a colossal failure of imagination later referred to as "The Great Divorce," St. Louis City seceded from the perceived burdens of St. Louis County and established itself as a home-rule city. The parting of ways, like many relationships that sour, was fueled by differences over money. St. Louis City was more prosperous than the county and outward rural growth was a concern to city voters who were weary of diverting tax money for roads and the maintenance of other services to their hinterlands (Jones 2000). When city voters approved a legal separation they most likely did not foresee the dramatic changes that have had a negative and lifetime effect on St. Louis City. For example, by 1950 St. Louis County would hold more wealth, population, and would be a competitive force for economic development with which St. Louis City would be forced to forever contend. The Great Divorce locked up the City's boundaries, restricting St. Louis' ability to mold the growth of its region meaning today St Louis City is surrounded by a sea of governments, making it an iconic picture of political fragmentation. Over time almost every aspect of population growth, economic development, and political influence has shifted away from St Louis City as the main hub of activity and towards a far-flung territory that spans hundreds of miles and is made up of hundreds of governing units.

The impact of the Great Divorce was immediate and city planners reacted swiftly beginning in 1926 when the first measure was put before city and county voters to reunite city and county. The measure failed then and each subsequent time (four more attempts, the last of which was in 1987) voters rejected the initiative. Reconciliation was not to be. These unsuccessful attempts to reduce jurisdictional separation reflect a controversial belief that fragmentation, at least between St. Louis City and St. Louis County, is harmful to the better interests of both the city and the region. Within the region there is a general sense of animosity and mistrust that frames most discourse, covering such diverse topics as the uneven burden of caring for the homeless to managing air quality to traffic congestion.

The story of mistrust between cities and their surrounding regions (and their ultimate separation) is a universal one even though the characters in the St. Louis story and the ultimate divorce are unique. Over the last sixty years the predominant areas of growth in population, land area, development and in the number and types of government have been outside the central city. As a result, central cities tend to be plagued by depopulation, racial tension, economic disinvestment, concentrated poverty and criminal activity. Within each metropolitan region, jurisdictional boundaries can mean the difference between an idyllic community and one plagued by blight and concentrated poverty.

When a city suffers population loss, economic disinvestment, rising crime and failing schools, the surrounding region is affected in a harmful way. The phrase "as the city goes, so goes the region" reflects this mindset (Peirce 1993). Several studies draw

connections between the health of the metropolitan region and the condition of the central city, but generally focus on how central city conditions impact the greater region.[1]

So does political fragmentation affect the growth (or decline) of the central city and, if so, what is the effect? There is a consensus among urban scholars (Lowi 1979, Jacobs 1961) that the fragmentation of governments, at the metropolitan level, is a causal factor in the depopulation, racial separation and economic disinvestment that has plagued central cities for over fifty years. As metropolitan areas face crises that traverse jurisdictional boundaries, political fragmentation is accused of impeding the necessary steps to problem solution, such as coalition building and resource pooling. The St. Louis case illuminates the tension between city and suburb, which plays out between those who view political fragmentation in metropolitan areas as watering down political power so thinly that problem solution is ineffective and those who maintain that fragmentation is a bastion of democracy.

Fragmentation of government is purposefully embedded within the U.S. Constitution and Americans have been bequeathed a healthy distrust of centralized political power. In the American system of government the crafting, enforcement and legality of public law and policy is carried out in different governing bodies across a tiered governing structure by hundreds of public servants. Today's political discourse regarding government's size and scope at the metropolitan level reflects some of the constitutional balancing act the Framers so expertly created: strong but not too strong, capable of changing but not too quickly or easily swayed, attentive to our citizenry yet not unduly influenced by often-fickle public opinion. These are natural tensions between state and national government yet they exist within the microcosm of the metropolitan

area.[2] The fundamental right to self-government and the relative distrust of concentrated political power is played out within all metro areas, which is evident in the pervasiveness of political fragmentation seen today.

There are three key components of political fragmentation in metropolitan areas in our current climate, the first being the proliferation of governments across American society and geography (Weiher 1991, 4), which in general refers to the expanse of general-purpose governments (municipalities), school districts, and single-purpose special districts (libraries, water, fire, and the like) across metropolitan areas. The second is the layering of governments within a defined geography. Within a region there can be municipalities nested within school districts and special districts as well as counties - and in some cases regional governments. The third component is the political fragmentation within governing entities as evidenced by the number of elected officials which oversee the functioning of government. This division of government, in terms of elected officials, the layering of governments, and the multiplicity of governments, is at the heart of the American ideal that the function of government should be a response to the needs and desires of its citizens.

The decentralization of power within metropolitan areas reflects the principle that political power should be distributed closest to the people, traditionally the municipality (Hills 2005), which allows citizens to check the powers of their government. Within urban areas, there is a quilt-like effect of governments that range in size, function, capacity and political importance, but this web-like pattern of governments is not necessarily welcomed by all as a triumph of the American system, and political

fragmentation has often been criticized as chaotic and inefficient (Benjamin & Nathan 2001; Orfield 2002; Carruthers 2002).

Political fragmentation at the metropolitan level can adversely affect the central city, a phenomenon coined "suburban exploitation," which is the idea that residents outside of the city limits regularly use the city's costly and elaborate service system yet carry none of the financial burden for maintaining it (Bradford and Oates 1974; Hawley 1951; Kasarda 1972; Slovak 1985). Suburban residents place "demands" for services such as work space, cultural and sporting entertainment, and retail shopping but because they live outside the city limits they avoid paying any incurrent costs of building or maintaining such services.

Bradford and Oates (1974) postulate that political fragmentation has allowed, especially, upper-income households to create homogenous communities which effectively prevent tax redistribution to poorer households and leave the city footing the bill to provide services to those both most in need and least able to pay. They examine fiscal spending on education by the jurisdictions in three Standard Metropolitan Statistical Areas (SMSA), in New Jersey: Jersey City, Newark, and Paterson-Clifton-Passaic, which include five central cities and fifty-three surrounding municipalities and conclude that more important than the amount spent per pupil is the governing structures within the metropolitan area (1974, 84). While their quantitative analysis only marginally supports their "exploitation hypothesis," Bradford and Oates' suggestion that a unified governing structure (i.e., reduction of fragmentation) will create a more equitable redistribution of income rings true with scholars who argue that political fragmentation

causes inequalities spanning race and income (see Morgan and Mareschal 1999; Gordon 2008; or Dreier, Mollenkopf, and Swanstrom 2004).

Here are two general views of metropolitan political structure and they embody the same constitutional tensions over government's power and size with which the Founding Fathers grappled. On the one hand, a plethora of local governments maintain decentralization of political power and keep access to government as physically close to the people as possible. On the other hand, large region-wide governments can streamline the governing process, offer economies of scale for public services, and develop uniform policy for collective problems like air pollution and growth. How this tension has played out over the past century reveals a hodgepodge solution of cooperation and competition among counties; towns; townships; school districts; and regional, general-purpose, municipal and single-purpose governments.

Average citizens remain unaware of the political synergy occurring around them when governance is functioning well, at each level: among other things their trash is picked up on time, streets are cleaned or plowed if it snows; house fires are responded to promptly; schools are well funded; sewers and drainage are maintained; even mosquitoes are kept at bay with regular neighborhood sprayings. Let a problem come up, however, and an individual's experience with local government becomes confusing and fraught with frustration. What happens when a neighbor refuses to mow her grass and calls to local officials go unheeded, the trash service is spotty or an emergency call leads to a slow or worse no response? What if attempts at redress or change are both time-consuming and there is no guarantee of a positive outcome? Eighty percent of the population of the United States currently lives in metropolitan areas. The structure of

governments and governance within these areas therefore plays an important role in determining the quality of life for most of America.

Fragmentation

In the broadest sense, political fragmentation is the division of political power. Historically, fragmentation was seen as a hallmark of the American Constitution and a necessary safeguard against political corruption. To keep political power from coalescing around one figure or governing unit, power is split in several dimensions. Government is tiered with each level (federal, state, county, municipality) nesting within each other in descending areas of geography and jurisdictional control. Political power is also divided within each level, and each governing body is run by public officials, most of whom are elected.

This intentionally redundant, nuanced structuring of government, combined with its general abundance, makes for a research field that approaches fragmentation in many different ways. This is reflected in the literature where the range of studies have focused on one type of government (see, for example, Berry's (2008) or Foster's (1997) work on special districts) to more general approaches that also include financial and population components (for example Lewis's (1996) political fragmentation index). There is no universal or consistent approach to measuring and modeling political fragmentation. A key component of this work is the careful accounting of fragmentation over time - therefore it is of use to discuss, briefly, the three general types that will be modeled in this study: horizontal, vertical, and internal political fragmentation.

Horizontal Fragmentation

Metropolitan areas are host to many types of governments and governing arrangements including counties, school districts and other special districts, municipalities and townships. Perhaps the most common definition of political fragmentation is simply the number of local governments within a metropolitan area. Horizontal fragmentation captures the multiplicity of governments and generally focuses on one type of local government. Common measures of horizontal fragmentation include the number of municipalities *per capita*, the number of local governments per square mile, and the percentage of central city population in a region (Hendrick et. Al 2011). Metropolitan areas with higher concentrations of municipalities or governments *per capita* are considered more fragmented, whereas areas that have a higher portion of their population residing in the central city represent areas that are less fragmented and more centralized.

Within metropolitan areas, higher levels of horizontal fragmentation are believed to lead to greater competition between local governments (Tiebout 1956), increase pressure on elected officials by local citizens to efficiently provide public services (Oakerson and Parks 1989), and diminish the likelihood that governments will collude in order to impose higher tax rates. Contrarily horizontal fragmentation is also thought to be less efficient and more costly at service delivery because a multiplicity of small governments are unable to take advantage of economies of scale (Woods 1961), and because there is duplication of services (Foster 1997). Metropolitan areas with higher levels of horizontal fragmentation increase the difficulty in coordination between governments and the central city. Municipal governments in particular feel pressure to

protect their political turf and the interests of their population base. There tends to be animosity, therefore, as each municipality views all others as competitors.

Vertical Fragmentation

Vertical fragmentation is defined by Boyne (1992) and Hendrick, Jimenez, and Lal (2011) as a number of overlapping governments. Governing units such as counties, municipalities, and special districts do not always fit neatly within the boundary lines of larger geographies and the number of jurisdictions that overlap or intersect create vertical fragmentation. Within the metropolitan area vertical fragmentation is perhaps most evident in special districts. Berry's (2009) work on special districts demonstrates that vertically fragmented metropolitan areas have more complex revenue structures. This is because the layering of local governments creates a common fiscal pool that each government must draw from to meet its own expenditures. As the number of governments that are drawing from the common fiscal pool increase, the overall tax burden for residents also increases.

Vertical fragmentation can be measured by the ratio of special purpose governments to general purpose governments or by the percentage of special purpose governments of total local governments. Higher levels of vertical fragmentation are associated with higher government expenditures, particularly in metropolitan areas with more special districts (Hendrick et al 2011). The effect of vertical fragmentation on central cities can affect their ability to compete for residents because suburban areas, where there are more services provided by special districts, can be perceived as more attractive. The effects of vertical fragmentation may be experienced by cities in their

ability to draw from the common fiscal pool to provide quality services to their residents as well.

Internal Fragmentation

Each governing unit is overseen by a governing body and, with some exceptions, these are publically elected officials. The division of political power within a jurisdiction among elected officials is internal political fragmentation. Each publically elected government official represents a finite amount of political power and influence over government operations. Nelson and Foster (2000) point out that cities with higher numbers of elected officials represent governments that are more responsive to public needs, whereas cities with few elected officials are subject to higher scrutiny and accountability. Cities with greater numbers of elected officials usually represent larger government structure, which to the typical resident can be a turn off because of the complexity. Internal fragmentation within the central city is measured by the number of elected officials *per capita* and higher concentrations of such will have a negative effect. Cities may lose residents to suburban communities which tend to have fewer elected officials because they appear to be a simpler beast to wrangle.

Internal fragmentation may also have an adverse effect in that cities have a harder time responding quickly and nimbly to policy problems when compared to other municipalities with different governing structures. Looking at the number of government employees *per capita* is another measure of internal fragmentation that can indicate the relative size of city government. A city-manager style government may have an easier time navigating policy problems than mayor-council simply because there are fewer elected officials involved in the decision-making process.

The horizontal, vertical, and internal fragmentation of government within metropolitan areas reflects the principle that political power should not only be fragmented but distributed closest to the people, traditionally at the municipal level (Hills 2005). The movement of people across the United States from an agrarian society to a nation of cities over the last sixty years has been noteworthy with most households now rooted in suburban communities outside city limits. As the population has changed so too have the number government bodies that serve them. As the government arrangements in metropolitan areas have increased in complexity, the usefulness of decentralized political power because of political fragmentation has come under increased scrutiny. An excess of local governments maintain decentralization of political power and access to government physically close to the people. On the contrary, large, region-wide governments can streamline the governing process, offer economies of scale for public services, and develop uniform policy for collective issues like air pollution and managed growth.

This pattern is illustrated well in the St. Louis case. Consider the hierarchy of government and number of elected officials that serve the typical resident of the city. St. Louis is governed by the elected, city-wide offices of mayor, comptroller, and the president of the board of aldermen; there is also district representation through the twenty-eight member Board of Aldermen. The Great Divorce made the city its own county and so voters elect city-wide the offices of circuit attorney, circuit clerk, collector of revenue, license collector, recorder of deeds, sheriff, city treasurer and public administrator. The city has one school district, which is overseen by a superintendent along with a school board.[3] The city provides water, fire and ambulance services, but

until 2012 the state of Missouri controlled the police force, a holdover from the Civil War. Each public official has a distinct slice of political power and authority. The citizens of St. Louis have had little to fear from the threat of large scale political corruption but the system is prone to a feudal mentality where turf battles and status can prevent true policy innovation from occurring. The complex governing arrangement within the city is matched by a complex and vibrant array of fragmentation across the metropolitan area.

Within the St. Louis region there is a patchwork-like pattern of governments that range in size, function, capacity, and political importance. Figure 1.1 illustrates the steady growth of governments across the St Louis metropolitan region from 1950 to 2000. As of the 2002 Census of Government, surrounding the city and comprising the greater St. Louis region are 16 counties, 286 municipalities, 144 school districts, and 423 special districts, each with a finite geography and realm of political power. The feudal protection of political turf and power within the city makes cooperation and collaboration with governments within the region incredibly complex if not downright discouraging. What remains unclear is whether the City of St. Louis would fare any better if there were fewer levels and types of government surrounding it.

Figure 1.1: Number of Governments in the St. Louis Metropolitan Area, 1950 – 2000. This figure shows the growth of governments across the St. Louis metropolitan area. Noteworthy is the explosion of special district governments and the consistent uptick in the number of municipalities. With the exception of school districts, which experienced some consolidation during the time period, the number of governments has grown steadily. Source: U.S. Census of Governments.
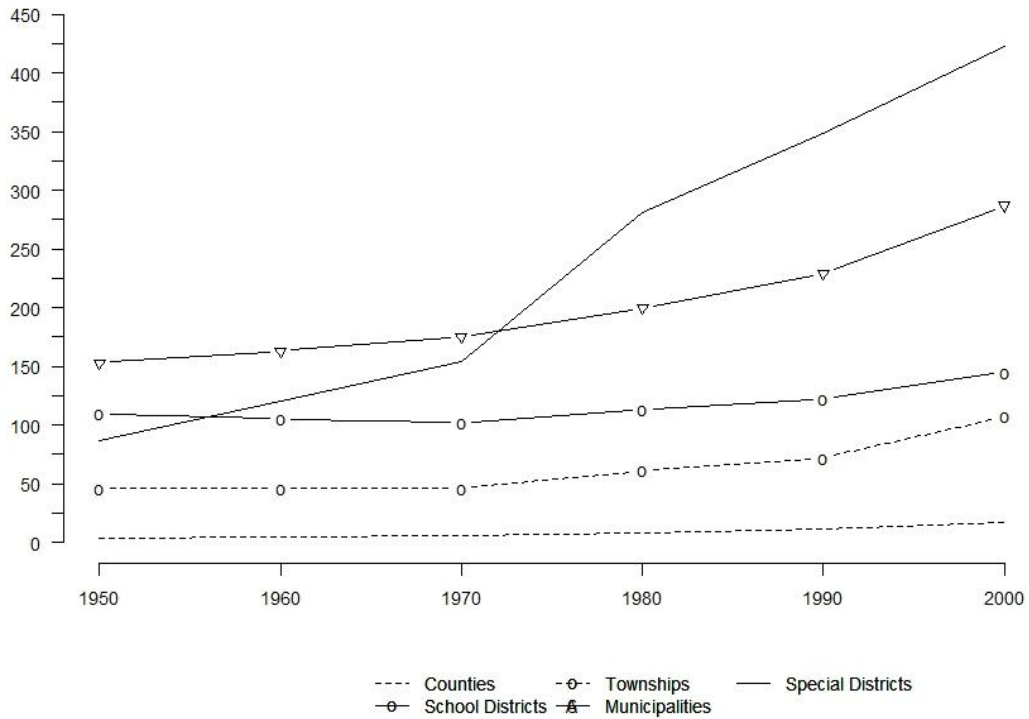
Fragmentation and Central City Decline

Many of the underlying problems facing urban areas such as housing, transportation, pollution, education and access to open spaces were determined to be due to political as well as fiscal fragmentation as determined by the Advisory Commission on Intergovernmental Relationship (1976). Dreier, Mollenopf, and Swanstrom (2004) as well as Morgan and Mareschal (1999) describe the metropolitan maze of governments as a key determinant of economic and racial isolation within metropolitan areas. However, there is a contingent of urban scholars and political economists who view political fragmentation within metropolitan areas, what the ACIR term an "urban jungle" (ACIR 1976, 145) as a reflection of the fundamental right to self-govern and for individuals to work out problems themselves (McGinnis 1999, 3; Jones 2000). Resistance to regional governance is fierce in most metropolitan areas and city leaders, academics, and policy makers have turned their attention to building stronger regional governance rather than regional government. Within metropolitan areas there are great disparities in the quality of public services ranging from police to education, and if these differences are driven by political boundaries (Weiher 1991) then fragmentation warrants further investigation. Despite much scholarship, the relationship between urban decline over the past century and political fragmentation remains unclear. Tension between metropolitan government structure and urban decline leads us to the question of what role, if any, political fragmentation plays in the varying outcomes of central cities.

The Research Question

Conceptually, fragmentation represents a continuum of political power. At one end there is no fragmentation of political power; all decision-making is done by one

central authority and at the other end, political power is highly decentralized within and across several levels of government. Americans have a fundamental distrust of concentrated power and value the separation of political power, which is why fragmentation occurs horizontally, vertically, and internally. Does the existence of fragmentation within levels of government as well as across governments contribute to the decline of a metropolitan area's central city? An assumption of the research question is that fragmentation is a causal factor of decline. Decentralization of political power at the metropolitan level may or may not have a direct impact on the decline of central cities over the last sixty years, but I believe that higher levels of political fragmentation within a central city and across a metropolitan area will lead to greater central city decline over time.

Consider the individual – household, corporation, small business - facing the decision of where to locate within a metropolitan area. The degree of political fragmentation within the central city plays a role in that decision-making process, albeit a subtle one. Central cities, particularly older ones, can have complex governing arrangements compared with their surrounding municipalities, which may offer a more streamlined system of government. A city, where power is separated between several elected officials and administrative offices, presents a potentially confusing and intimidating bureaucratic maze, whereas a suburban government overseen by one governing body or even no formal governing arrangement, in the case of unincorporated areas, can make the locating process more clear cut. The attractiveness of the central city to one suburb over another can also be driven by the number and type of places.

For example, a metropolitan area such as Portland, Oregon offers a limited number of jurisdictional choices; only 58 municipalities in 2000 which compared to a metropolitan area like St. Louis, home to 287 municipalities, (the third highest behind Chicago and New York) offers an overabundance of choice. All other factors being equal, the City of Portland may have retained more residents over time because the choices available to residents seeking a higher quality living arrangement are limited. The abundance of choices available to St. Louisans may only increase the likelihood that some place other than the central city will appear more attractive.

Hirschman's theory concerning responses to decline is useful for understanding the relationship of a central city to its surrounding metropolitan region. Hirschman argues that when a consumer good deteriorates in quality, those consumers who value quality over cost will purchase a higher quality product even if it is more expensive (1970, 49). However, when choice is limited or a higher quality option is unavailable, consumers will voice their dissatisfaction in order to try to prevent deterioration (Hirschman 1970, 53). At one time the central city was the only option for individuals seeking employment, culture, entertainment, and political influence. Social mobility, particularly to a higher economic class, was possible principally within the city limits. Residents had few options to maintain the same quality of life living outside of the city, and thus problems that threatened their quality of life were confronted using voice. With advances in transportation coupled with availability of land, a high quality life outside of the city was made possible. Not surprisingly, when faced with quality options, those who desire to leave the city choose to exit. The growth of municipalities around central cities presents a *milieu* where quality conscious residents (consumers) are presented with a variety of

options. Hence the growth or decline of a central city is affected by the number and perceived quality of the governing arrangements surrounding it.

The choice to exit (or never to enter) the central city in preference for suburban living is determined by many factors and metropolitan fragmentation or the complexity of governing arrangements within the central city represent only one schema. There is fine scholarship which suggest the choice of living arrangements is hardly an all things equal situation but race (Cutler, Glaeser & Vigdor 1999), education (Bischoff 2008), and employment opportunity (Wilson 1996) play significant roles. Historic policies at the federal level such as urban renewal and offering mortgages in suburban areas that are cheaper and more attractive than within central cities, combined with practices like redlining and blockbusting, have made residential choice uneven across racial and economic groups (Jackson 1985). The loss of manufacturing jobs within cities has also played a significant role in undermining fiscal health and population stability. Whether or not cities fare worse in urban areas that are more fragmented than others is an explanation of decline that can only benefit from continued research.

Political fragmentation occurs both at all levels of government as well as within each individual level and this makes measurement of the concept somewhat unwieldy. Because it is so pervasive, it is important to understand the effect fragmentation plays in relationship to the central city within its particular region. Of the many measures of political fragmentation, Hendrick, Jimenez, and Lal (2011) identify twenty specific ones in the literature and unsurprisingly researchers have had varying levels of success determining fragmentation's effects. Understanding the nuanced and complex relationship of cities and their suburbs will hopefully lead to better policy and greater

appreciation of how seemingly independent decisions in the suburbs can affect the central city. As metropolitan areas face crises that traverse jurisdictional boundaries, and political fragmentation is accused of impeding upon the necessary steps to problem solution such as coalition building and resource pooling. These tensions are particularly pronounced when they occur between the central city and its suburbs. Historical tensions unfurl between those who view political fragmentation in metropolitan areas as watering down political power so thinly that problem solving is ineffective, and those who maintain that fragmentation is a stronghold of democracy and individual choice.

Theoretical Foundations of Metropolitan Government and Governance Structure

Scholarly work on the structure of metropolitan political structure has evolved over time from a focus on the optimal governing arrangement to optimal arrangements of governance. The call for institutional reform of governing structure in metropolitan areas from many governing bodies into one regional government for each metropolitan area was dominant during the Progressive Movement. Ostrom, Tiebout, and Warren's 1961 article was provocative in its argument that governments within a metropolitan area could compete like markets and allocate public goods and services through combinations of provision and production. As empirical evidence accumulated showing that individuals as well as institutions collaborate in order to provide and produce services, studies of the metropolitan area have shifted toward issues of governance. While the impact of metropolitan fragmentation on the central city may seem somewhat dated given the current discussions on governance, a better understanding of how metropolitan areas relate to their central cities is critical to the current success of metropolitan areas to collectively solve problems, despite diversity of communities and governments.

Institutional Reform

  Institutional reform was the dominant paradigm during the Progressive Era (1890-1920s), the urban renewal programs in the 1950s, and through the Model Cities program, which ended in the mid-1970s. Political scientists and public administrators facing rapid change in government demands and the decentralization of cities' population across an expanding metropolitan area concluded that government works best when its services are delivered with greatest efficiency and minimized fiscal separations between areas of need and areas of resources. Institutional reformers viewed city machines as corrupt institutions that had to be squashed and replaced with a governing structure that was more businesslike, efficient, and responsible (Frug 1999, 52). Reformers view political fragmentation as something that diminishes efficiency and equity for several reasons. They assume that individual jurisdictions will not view themselves as interdependent economic, social and political entities in a regional sense and thus forsake the well-being of the region in pursuit of their own interests.

  The reform school is grounded in the classic theory of collective action. This traditional view assumes that individual, rational actors will proceed in their own self-interest and not in a way to benefit the group without coercive authority to enforce the rules (Olson 1965). The multiplicity of governments within a metropolitan area is seen as harmful because each community, made up of individuals seeking their own self-interest, demand their local government to act for their benefit even if those actions harm the region as a whole. Proponents of institutional reform view metropolitan governing arrangements in terms of how institutions ought to be in order to achieve the twin goals of efficiency and equity. As the number of suburban municipalities increases and

competition for wealthy residents intensifies, communities become self-centered and exclude individuals, housing developments and businesses that are perceived as harmful. As part of his study of city incorporation in the Los Angeles area, Miller (1981, 173) describes how municipal boundaries were used to stratify groups by income and race. Similar observations are made by Ladd and Yinger's (1989) study of fiscal health in central cities between 1972 and 1982. Gordon (2008) and Gamm (1999) describe how exclusionary practices, such as redlining and discounted mortgages were used to entice middle-class whites out of city limits and prevent impoverished minorities from exiting. Downs (1999) succinctly describes how federal policies offered cities a token gesture of aid while at the same time encouraging households and firms to move into suburban communities (466).

Forty years after Woods' (1961) study of the New York metropolitan area, in which he argues that fragmentation prevents individual jurisdictions from achieving efficiency through economies of scale in service provision, Benjamin and Nathan's (2001) study demonstrates that services continue to be duplicated or overlap within a jurisdiction. Both studies recommend that fewer governments would facilitate greater efficiency and equality in the New York metropolitan area. Lyons and Lowery (1989) argue that political fragmentation leads to higher information and transaction costs for citizens creating participation barriers, spurring voter apathy and inflating budgets and expenditures. Political fragmentation is also seen as something that exacerbates inequality through institutional structures that mismatch tax resources and service needs and thwart redistribution in order to achieve economic, social, and political equality (Orfield 2002); thus there is need for a regional government that would enforce the

production and provision of public goods to achieve equity and efficiency for all

residents within a metropolitan area.

Public Choice

The remedy to problems outlined in the traditional theory of collective action was

that public goods had to be left in political hands (Hardin 1968, Olson 1965). This

remedy was challenged by scholars who believed the empirical evidence was weak and

institutions were not the only mechanism by which to solve social dilemmas. The

emergence of a behavioral approach to collective action theory was driven by political

scientists and economists whose application of market principles formed the school of

public choice. This school argues that a competitive market environment could be

simulated by municipalities competing for residents, thus creating a market rationale for

the production of public goods. Tiebout's (1956) watershed article "A Pure Theory of

Local Expenditures" pioneered the idea that public goods could have a market if a

metropolitan area has sufficient levels of fragmentation. If residents had enough choices

they could seek out their preferred ratio of taxes to services when deciding where to live

and "vote with their feet." Public choice theory focuses on the individual motivations for

living in one community over another. The theory assumes that individuals have known

preferences and, if given enough choice, could match their tax and service ratio to their

ideal community. Public choice theory approaches political fragmentation as something

useful to the health and vitality of the metropolitan area.

Ostrom, Tiebout and Warren's article "The Organization of Government in

Metropolitan Areas," published in 1961, pushed back against calls for reform by arguing

that the various governing arrangements within metropolitan areas can function like a market and deliver services efficiently. Public choice theory forms a foundation for future work to build empirical research to further push back against calls for metropolitan reform.

Metropolitan

In the face of the theoretical claims made by proponents of public choice, reformers still argued that the continued proliferation of political fragmentation was only exacerbating the differences in the efficiency and equity of services across metropolitan areas. The metropolitan school of thought encompasses the assumptions of institutional reformers by recommending the dissolution of all fragmented entities into one metropolitan government for each metropolitan area. Orfield's 2002 work, *American Metropolitics* outlines a sweeping number of benefits that would be incurred by the metropolitan region if adopting a unified system of government. These benefits range from cohesive land use planning and a diminished mismatch of affordable housing between cities, older suburbs and wealthier, newer communities, to improving transit and solving population retention problems facing at-risk suburbs (Orfield 2002, 162-167).

Illustrative of the potential in unified government is Baltimore County, Maryland. Maryland counties are quite resilient and there are no municipalities in this county. Each county government takes in revenue and provides services for much of its metropolitan area. Vicino's (2008) study of suburban decline in Baltimore County illustrates the redistributive ability that a large, centralized government can have in moving dollars from one area of wealth to areas of need. Rather than the norm, however,

Maryland counties are the exception for the characteristic powers of county governments. Calls for metropolitan government are not only driven by a theoretical view that individuals will act in their own self-interest to the detriment of the group, but also are driven by a belief that if political power is spread too thinly across governing units, the overall governing system can become out of balance. Even the efforts by citizens to check and correct the system are ineffectual, thus a restructuring of governing arrangements is the best solution.

Institutional reform and metropolitan theory focus upon the humanitarian and political ills that have plagued metropolitan areas for a century. Their central remedy to the inefficiencies and inequality within the metropolitan area is the creation of regional government, which voters in most locations have consistently rejected. Despite reformers' continued efforts to change the public discourse in their favor, political reality favors a fragmented governing structure. The frustration that reformers feel towards the current governing arrangements in the metropolitan area resonates with many practitioners and claims that fragmentation is an underlying source of social and economic disparity between cities and their surrounding communities. However, the lack of momentum to create regional governments has become motivation to study the governance in metropolitan regions (Hall 2009).

Polycentricity

Developed by the Workshop in Political Theory and Policy Analysis at Indiana University, the concept of polycentricity emerges in response to calls to reform fragmented metropolitan political structures into one "Gargantua" (Wood 1958)

government. Polycentricity is defined as the idea that within a metropolitan area the political system would have many centers of decision making that are independent of each other (Ostrom 1999). In essence, polycentricity argues individuals can and do collaborate to solve problems. Polycentricity theory adds to public choice theory with assumptions that in urban areas, service production and function vary substantially; there is a preference for homogenous neighborhood, and competition among service producers will encourage innovation, production and delivery (Ostrom 1999). The Ostroms' 15-year study of police performance in metropolitan areas across the country found that smaller police departments provide services with better quality and satisfaction (according to residents) than their larger counterparts (Ostrom and Whitaker 1999). Oakerson's (1999) analysis of local public economies argues that through combinations of service production and contracting for service provision, communities are able to function with efficiency, equity and be highly fragmented. Polycentricity theory looks out over the politically fragmented landscape and does not see a crazy-quilt but a complex development of competition and collaboration, operating in a cohesive and stable pattern.

In regard to urban decline, particularly of central cities, public choice and polycentricity theorists believe in multi-level governance and view the argument that suburbs (i.e. fragmentation) take away population and revenue as overstated. Hawkins and Ihrke's (1999) review of the suburban-exploitation literature conclude that suburbs may not hurt cities and in some cases cities benefit from their suburbs. Their analysis suggests that economic and technological changes are to blame for central-city decline, not political fragmentation. If citizens are unhappy with their government, the impetus for change rests not only upon attentiveness of public officials, but on the determination of

the community, neighborhood and individual to demand change. Fragmentation, according to public choice theory, is not an impediment to citizens acting as a check on their governments but rather as a stronghold of the democratic process.

Regionalism

The case for regional cooperation and governance is the *raison d'etre* for the regionalism school, a derivative of institutional reform. Instead of focusing the dissolution of all fragmentation into one metropolitan government for each metro area, the focus of regionalism is on how communities build cooperative agreements and collaborate to solve social dilemmas or, more simply put, issues of governance rather than government. Regionalists still view political fragmentation as a mechanism for social disparity but believe that metropolitan governance, with its focus on civil society, can effectively foster healthy levels of participation, manage public goods, and keep public officials accountable (Oakerson 2004).

Theoretical Crossroads. While the reform, metropolitan, and regionalism schools of thought hold unified government as an ideal, reformers have not been blind to political realities. Advocates for inter-governmental cooperation not only between suburban municipalities but between the central city and its surrounding municipalities argue that collaboration through informal and formal agreements is currently the best way to combat problems of a regional scale. Collaborative efforts between governments still have to overcome political fragmentation as getting public officials across a metropolitan area to agree, even on an informal policy arrangement, is difficult.

Public choice and institutional reform set the foundations for two distinct theories of political fragmentation's effect on central city decline; however, the empirical evidence indicates that something is still missing from what is known about these interactions. Studies in the polycentricity school of thought have accumulating evidence that small scale service provision performs with efficiency to the satisfaction of their consumers, and promotes local control of government. In other words, political fragmentation is not harmful but reflects the will of the people. This seems to fly in the face of evidence amassed by reformers and advocates of regional governance who have painstakingly detailed that economic and racial disparities appear to escalate with the rise of political fragmentation. In other words, political fragmentation appears to lead to systematic inequalities.

The Puzzle

From these differing views emerges the following question: Has political fragmentation within the metropolitan area and within central city government been a cause of central city decline or just the benign evolution of governance? The literature clearly identifies two points of view concerning whether or not fragmentation is a public good or public evil but the tensions remain unresolved. The argument that political fragmentation is harmful to the central city stems from a theoretical view of the individual as rational, seeking to get the most out of a living arrangement for the least amount of cost. When individuals behave in this way, the governing arrangements within the city put it at a disadvantage compared with its surrounding communities.

Causal Mechanism. The Tiebout hypothesis, which states that given enough choices individuals will sort themselves out by tax-service ratio into their ideal communities, is the basis for the assumption that individuals have a known preference for where they live. Based upon the work of Tiebout and others, I assume that individuals will attempt to maximize their utility in a relatively rational manner, seeking to improve their self-interest, loosely defined as getting the most out of their living arrangement for the least amount of cost. When deciding where to live, these individuals will search to find optimal living arrangements. Theoretically, individuals (both households and firms) could move *ad infinitum* until their preferences were met. Naturally, the empirical evidence demonstrates that most individuals are not constantly on the move, seeking out their ideal living arrangement, but are operating under certain constraints. For instance, poverty or community attachment may hinder the ability to move. There are numerous factors that affect where and how often individuals change residences ranging from proximity to work, cost of moving and selling a home, as well as family needs.

A plausible motivation to move or to remain in a community for some is proximity to public transportation. Whether because of financial savings or environmental conscience, the desire to be close to public transportation may hinder a household moving even if there is a desire to move out of the community. The decision-making process of choosing a community involves prioritizing, taking stock of the benefits as well as the costs, and making the best choice in the face of constraints. I assume that individuals still seek to behave rationally and have an internally known optimal living arrangement that motivates a desire to move, but that there are several factors that inhibit, encourage or prevent their capacity to move. As clearly laid out by

institutional reformers, institutions play a key role in an individual's choice and ability to move.

The ability of an individual to exercise choice is affected by not just a desire to move, but is either encouraged or discouraged by the number and perceived quality of communities. In an effort to attract and retain residents, communities will compete with each other and distinguish themselves by altering their service-tax ratio. Whether an individual is able to start house shopping is encouraged or discouraged by the institutional rules in place. Under certain conditions, communities can act with exclusivity to keep undesirable residents out and attract those they deem more desirable. These institutional rules have historically been a cause of the concentration of poverty within central cities. For example, federal housing and interstate highway policies as described by Jackson (1985) and others, encouraged suburban growth and did almost nothing to help cities retain or attract desirable residents.

Political fragmentation manifests itself in two ways, across a metropolitan area and by higher levels of fragmentation within central city government. Higher levels of fragmentation across a metropolitan area increase the number and perceived quality of choices to individuals. The more communities with which a city has to compete for residents (thus higher levels of political fragmentation) can lead to greater decline in the central city. Fragmentation within central city government in terms of public officials, bureaucratic departments, and segmentation of fiscal and political power hamstring the ability of a city to act nimbly when competing with surrounding communities for residents.

Political power within city government is generally divided between a mayor and council as well as other elected officials. Cities may also have a city manager as well as a mayor. Whether by resistance to reforms or political history, city government can vary in strength, resources, and ability to institute change. Rich's (1996) seminal work regarding African-American mayors and city schools demonstrates the difficulty a mayor can have effecting change within its own school district. Elected school boards were cautious and mistrustful of calls for reform emanating from the mayor's office and the perception of city schools as "failing" further weakens the city's ability to compete for residents. Portz's (1990) work on the politics of plant closings discusses how city officials can struggle to respond with meaningful public policy to either prevent or circumvent a plant closing. When it comes to decision-making, particularly crafting public policy that is timely, cities can be at a disadvantage simply because of the number of decision-makers who must agree for a policy to move forward (Pressman and Wildavsky 1979). The number of elected officials within city government can be a hindrance because each official will not only guard his political and financial resources but can be slow moving in response to competition for households or firms. Thus the fragmentation within a central city can be a real disadvantage when competing with suburban communities for households and firms.

The general hypothesis among advocates of metropolitan reform is that metropolitan areas with more fragmentation will have more decline than metro areas with less fragmentation. Much of the scholarship written in support of the "fragmentation causes urban decline" hypothesis relies upon descriptive statistics and case study analysis. The literature is rife with subjective examples of cities wrecked by fragmented

government. Jackson's acclaimed work *Crabgrass Frontier* is representative of the rich

anecdotal evidence used to explain the devastation fragmentation can have on central

cities. The vicious cycle between fragmentation and urban decline is described by

Jackson: "The same broad patterns of downtown decline, inner-city deterioration, and

exurban development so evident in Saint Louis are actually typical of the large

population centers of the United States" (1985, 218).

However, while every metropolitan area in the United States is fragmented, not

every metro area has experienced the same levels of urban decline. The New York

metropolitan area is highly fragmented, as detailed in Robert Woods' work *1400

Governments* (1961) and yet the city's economy, infrastructure, and population have

endured, despite Woods' own recommendation for broad, sweeping reforms of the

government structure (Wood 1958). According to the Nathan and Adams Index[4], New

York is characterized as prosperous and its central city is growing, even as its

metropolitan area expands. Though its population dropped between 1970 and 1990, it

experienced population gains, primarily through immigration, in the following decades

giving the city a positive net change over the past thirty years (Savitch and Kantor 2002,

12). The city is not without its problems. There is still poverty, housing projects, and

New York City experienced its own share of white flight, particularly after the black out

and subsequent looting in 1975. The economy of the city has not always been vibrant –

the city has been on the brink of bankruptcy several times. But despite the growth of the

metropolitan area over the last fifty years, the city thrives.

Detroit is considered by many measures to be relatively low on the fragmentation

scale but the decline of the city has continued unabated since the 1950s. For example,

Orfield's fragmentation index gives Detroit a score of 3.3, which is quite low, but even though Detroit has less fragmentation than New York, it has experienced far greater decline (2002, 134). Looking at the Nathan and Adam's Index over the same time span as New York, Detroit is considered distressed, its central city in decline, and has had a net change in population of -36% between 1970 and 2000 (Savitch and Kantor 2002, 12). Much of Detroit's decline stems from the changes in the American auto industry (Glaeser 2011). As its markets have changed, moving business out of Detroit, indeed even out of the country, Detroit has been unable to fill the industrial vacancy. The city itself has grown to be majority minority, while the surrounding areas remain white enclaves. Despite or perhaps because of political fragmentation a city like New York has continued to grow and prosper whereas Detroit has been unable to stem the waves of decline emanating from its central city.

Herein lies the puzzle: Does the pluralistic ideal of decentralized government actually cause more harm than good to the central city? New York and Detroit represent somewhat extreme cases of fragmentation but their contrary conditions draw out the tension in the debate. If political fragmentation is harmful to central cities it should help Detroit and hurt New York but the effect of fragmentation on these cities is not clear. Over the last century, all metropolitan areas have experienced changes in political fragmentation; some of them have experienced severe levels of central city decline as well. Whether varying levels of political fragmentation have a causal impact on central city decline has not been firmly established and needs to be carefully, systematically measured and tested over time.

Implications

The problems facing cities and metropolitan areas are varied and complex ranging from local issues like government employee pensions and health services, to regional issues such as traffic congestion and air quality, and even national and international issues like competition for trade hubs and economic development. The belief that fewer governments will make solving these problems easier has become conventional wisdom. Even in St. Louis, there is renewed dialogue concerning rejoining the city to St. Louis County and while many tout advantages like economies of scale and the leveraging of resources, it is still murky as to whether or not changing the governing structure will make solving any of these problems easier. While not all academics and policy-makers are persuaded that consolidated government like what exists in Louisville, Kentucky or Indianapolis, Indiana is the ideal governing arrangement, regional consolidation and cooperation keep cropping up as problem solutions.

This study will contribute to the long debate over the role of metropolitan political structure by teasing out some of the complexities of how political fragmentation across metropolitan areas and within cities has affected the health and vitality of cities over time. There are several political and policy related implications of this analysis. If political fragmentation has an adverse effect on cities, it implies that building cooperative agreements as well as formal partnerships for the managing of resources, outward growth, and transportation are not exercises in futility but can help culture a metropolitan perspective, rather than an "us" versus "them" mentality between urban municipalities and their central city. Tracking the condition of central cities in relation to their growing metropolitan areas over sixty years and modeling that data with panel study regressions represents new analysis of political fragmentation and central city decline.

A Road Map for the Analysis

The central hypothesis is to test the impact of political fragmentation on central city decline between the years 1950 – 2000, for 100 central cities. I predict that metropolitan areas and cities with higher degrees of political fragmentation will have central cities with greater levels of decline. The 100 largest cities in 1950 make up the sample for this study. Using primarily U.S. Decennial Census data and U.S. Census of Government data measures of population, education, race, income, employment, poverty, fiscal health as well as several measures of political fragmentation have been compiled for each city and their metropolitan area. A list of the 100 cities included along with their rank and population in 1950 is displayed in Table 1.1. The data is used to construct three time series cross-sectional models of central city decline. Three components of decline are chosen, population loss, racial segregation, and declining fiscal health, to model decline. While many measures of political fragmentation were considered, ultimately nine distinct measures are included to capture the conceptual components of horizontal, vertical, and internal fragmentation. The results of these time series cross-section analyses are discussed in chapter four.

Chapter Two is a discussion of several causes of central city decline, such as technological advances, decline of manufacturing, racial bias, and federal government policies and considers how political fragmentation helps explain city outcomes. Chapter Three carefully examines the two overarching schools of thought about political fragmentation and government structure; small is beautiful and large is lovely. In addition, chapter three further draws the theoretical connection between political fragmentation and central city decline. Chapter Four includes an explanation of the

measures used, data anomalies, and pertinent summary statistics. Finally, Chapter Five

presents and summarizes the findings from four panel study cross-section analyses and

offers suggestions for future research.

Table 1.1: The 100 Largest Cities in 1950 by Population. Source: U.S. Census Bureau

City, State	Rank	Population	City, State	Rank	Population
New York, NY	1	7,891,957	Memphis, TN	26	396,000
Chicago, IL	2	3,620,962	Oakland, CA	27	384,575
Philadelphia, PA	3	2,071,605	Columbus, OH	28	375,901
Los Angeles, CA	4	1,970,358	Portland, OR	29	373,628
Detroit, MI	5	1,849,568	Louisville, KY	30	369,129
Baltimore, MD	6	949,708	San Diego, CA	31	334,387
Cleveland, OH	7	914,808	Rochester, NY	32	332,488
St. Louis, MO	8	856,796	Atlanta, GA	33	331,314
Washington, DC	9	802,178	Birmingham, AL	34	326,037
Boston, MA	10	801,444	St. Paul, MN	35	311,349
San Francisco, CA	11	775,357	Toledo, OH	36	303,616
Pittsburgh, PA	12	676,806	Jersey City, NJ	37	299,017
Milwaukee, WI	13	637,392	Fort Worth, TX	38	278,778
Houston, TX	14	596,163	Akron, OH	39	274,605
Buffalo, NY	15	580,132	Omaha, NE	40	251,117
New Orleans, LA	16	570,445	Long Beach, CA	41	250,767
Minneapolis, MN	17	521,718	Miami, FL	42	249,476
Cincinnati, OH	18	503,998	Providence, RI	43	248,674
Seattle, WA	19	467,591	Dayton, OH	44	243,872
Kansas City, MO	20	456,622	Providence, RI	43	248,674
Newark, NJ	21	438,776	Dayton, OH	44	243,872
Dallas, TX	22	434,462	Oklahoma City, OK	45	243,504
Indianapolis, IN	23	427,173	Richmond, VA	46	230,310
Denver, CO	24	415,786	Syracuse, NY	47	220,583
San Antonio, TX	25	408,442	Norfolk, VA	48	213,513

Table 1.1 Continued

City	Rank	Population	City	Rank	Population
Jacksonville, FL	49	204,517	Mobile, AL	77	129,009
Worcester, MA	50	203,486	Evansville, IN	78	128,636
Tulsa, OK	51	182,740	Trenton, NJ	79	128,009
Salt Lake City, UT	52	182,121	Shreveport, LA	80	127,206
Des Moines, IA	53	177,965	Baton Rouge, LA	81	125,629
Hartford, CT	54	177,397	Scranton, PA	82	125,536
Grand Rapids, MI	55	176,515	Knoxville, TN	83	124,769
Nashville, TN	56	174,307	Tampa, FL	84	124,681
Youngstown, OH	57	168,330	Camden, NJ	85	124,555
Wichita, KS	58	168,279	Cambridge, MA	86	120,740
New Haven, CT	59	164,443	Savannah, GA	87	119,638
Flint, MI	60	163,143	Canton, OH	88	116,912
Springfield, MA	61	162,399	South Bend, IN	89	115,911
Spokane, WA	62	161,721	Berkeley, CA	90	113,805
Bridgeport, CT	63	158,709	Elizabeth, NJ	91	112,817
Yonkers, NY	64	152,798	Fall River, MA	92	111,963
Tacoma, WA	65	143,673	Peoria, IL	93	111,856
Paterson, NJ	66	139,336	Wilmington, DE	94	110,356
Sacramento, CA	67	137,572	Reading, PA	95	109,320
Albany, NY	68	134,995	New Bedford, MA	96	109,189
Charlotte, NC	69	134,042	Corpus Christi, TX	97	108,287
Gary, IN	70	133,911	Phoenix, AZ	98	106,818
Fort Wayne, IN	71	133,607	Allentown, PA	99	106,756
Austin, TX	72	132,459	Montgomery, AL	100	106,525
Chattanooga, TN	73	131,041			
Erie, PA	74	130,803			
El Paso, TX	75	130,485			
Kansas City, KS	76	129,553			

Summary

Political fragmentation is at the root of why central cities can no longer be treated as isolated, but must be considered as part of a larger urban area. Thus, it is important to increase our understanding of fragmentation and its effect on urban decline, racial isolation, political efficacy, and civic participation. Danielson and Lewis (1996) state this eloquently, "The point is neither that central cities are unimportant or unworthy of serious study. It is only that cities are not enough to understand urban politics, and that city politics cannot be understood without encompassing the rest of the spreading metropolis." This dissertation aims to add to the discipline by studying fragmentation at the metropolitan level for the hundred largest central cities in 1950 and following them through time, to explain the relationship between fragmentation and central city decline.

Fragmentation has the potential to be a powerful mechanism to better understand the political context in which most of America lives. Though some scholars and public officials would like to see metropolitan governance reformed and the degree of fragmentation diminished, the federalist value of keeping power separated across units of government and the important role elections play in keeping government in check will more than likely maintain a polycentric system. A study that models the complex nature of fragmentation in metro areas will shed some light on this puzzle of fragmentation and urban decline. Understanding the historical relationship between central cities and their surrounding communities helps policymakers and academics build healthier metropolitan areas. Pollution, energy efficiency, workforce displacement, education quality, these are all problems facing metro areas that grow ever serious, and a greater understanding of

how a central city fits into the metro area will help craft more efficient and equitable

solutions.

Notes: Chapter One

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[1] For example see Savitch et al. 1993, whose work finds evidence that the prosperity of the central city contributes significantly to the prosperity of their surrounding suburbs. Also Dreier et al. 2004, demonstrate how the problems of decay, crime and poverty are creeping over central city boundaries and into first ring suburban communities.

[2] Federalism typically refers to constitutionally shared powers between two relatively coequal levels of government. Because local governments are creatures of the state, the idea of dual sovereignty does not apply, federalism is an idea with many meanings and in this case the use of federalism refers not to the hierarchical nature of governance but the multiplicity of governance. A more accurate term might be intergovernmental relations.

[3] The current governance of the public school district is even more complex. In March 2007, after multiple evaluations gave the school district provisional accreditation, the state transferred governing authority from the school board to an appointed board. The school board still exists but with limited powers, which it shares with the appointed board.

[4] The Nathan and Adams Index is a composite of six equally weighted factors, unemployment, dependency, education, income level, crowded housing, and poverty. The values are a comparison of central city conditions to their surrounding suburbs within the metropolitan area (Nathan and Adams 1989).

Chapter 2

America's Great Cities

"A suburb is ultimately an instrument by which the periphery can exploit the center … a suburb is a parasite whose residents can enjoy the benefits of scale and specialization without sharing in all the attendant costs."
- Theodore Lowi, *The End of Liberalism*

U.S. cities represent a complete spectrum of urban experience; in the Northeast cities such as New York are densely populated with metropolitan areas bleeding into others like Hartford, Philadelphia and Newark. Others like Phoenix and Houston have smaller cores of population density and have miles of low density bedroom communities. Some cities sprang up out of pioneer trading and shipping posts; others, because of proximity to natural resources or location along westward expansion routes. They have all served as home to those who beat the drums of progress. The manufacturers who turned raw elements into goods, inventors, entrepreneurs, researchers, the arts, entertainment, engineering, architecture, and science, as well as the great schools of education and medicine, have mostly called cities home. While cities have served as the meeting ground for countless creations that have advanced America down the road of progress, they have also had their share of great troubles from natural disaster, financial strain, riot, gang violence, poverty and pollution. Explaining why some cities have grown and thrived over time while others have diminished is a puzzle scholars have spent much effort piecing together. Part of what makes cities so complex is the fact that they are all nested within larger metropolitan areas and understanding the causes for success or decline in any particular city should include its position within its region, for the two are

linked by economy, the movement of its citizens, and by its common problems and triumphs.

According to the U.S. Census's classification of urban places, the United States is considered an urban nation and in many regards this classification is an apt description. As of the 2000 Census nearly 80%[1] of Americans no longer live on farms and in rural communities but in a kind of urban-rural hybrid, part traditional city and part rural oasis (the suburbs). Alongside the growth of urban areas as population centers has been the growth of governing structures to provide services and political representation. The growth of suburban areas has had dramatic and in some cases devastating impacts on the American city, however this growth pattern has not been universally bad for cities. Suburban life has also become an iconic image of the American Dream and has made possible home ownership, mobility and access to urban amenities possible for millions (Glaeser 2011). Southern and Western cities have experienced tremendous outward growth in their metropolitan areas spurred by population growth and economic development and typically have fewer municipal governments. Some of America's most vibrant cities, New York, Los Angeles and Chicago, exist in incredibly fragmented metropolitan areas. As outlined in Chapter 1 the governing arrangements within a metropolitan area may have a causal role in explaining why some cities thrive and others decline. While cities across the country have had their share of difficulties, the question endures: How much of their continued struggle, resilience, or success can be explained by the amount of political fragmentation surrounding them?

Theories examining the impact of racial bias, federal urban policy, technological innovation, and the decline of the manufacturing industry within the central city have

attempted to explain why cities have experienced population loss, fiscal strain, enduring segregation, struggling schools, and criminal activity (Dreier, Mollenkopf & Swanstrom 2004, Judd & Swanstrom 2006, Rich 1996). However these explanations are not entirely adequate for explaining the vast differences in outcomes cities have experienced. Having a racially biased urban housing policy was harmful to city residents but the implication here is that cities that thrived did not suffer the same ill effects. No urban scholar would argue that cities like New York, Chicago or Los Angeles are vibrant because they were not negatively impacted by racial bias or loss of manufacturing jobs. There is need for other explanations that might explain the differences in city outcomes. If not all cities exposed to negatives like white flight, declining housing stock and economic disinvestment experienced persistent decline, it implies that there must be other explanations.

The urban politics literature clearly identifies symptoms of decline. Fitting them within the larger theory of urban politics and policy, however, and grappling with *why* cities decline can be both a nuanced and complex undertaking as there remains an element of mystery in our understanding of cities. This becomes apparent simply by examining the causal mechanisms of urban theories. Many of the symptoms for decline could just as easily be the causes of decline. The ease with which one could switch the equations' sides enables a self-reinforcing cycle that has become the established view regarding cities. Conventional wisdom explaining the causes for city decline are many but vary along some common themes: *Schools are terrible in cities; interstate highways devastated neighborhoods and were black removal; cities are dirtier and more polluted than suburbs; cities are dangerous – you're more likely to be victim of crime in the city;*

traffic in cities is awful, there is nowhere to park and it takes an eternity to get anywhere.

Although a few of these *ad hoc* conclusions are rooted in scholarly research, many are

perpetuated by common misconceptions. Despite struggles, there is still much greatness

in U.S. cities. For example, many of the highest ranking high schools in the U.S. News

annual report are routinely located in cities; some of the best research hospitals in the

world call American cities their home; and violent crime rates are actually falling in cities

across the board, according to FBI data.[2] It is not always clear what the key factors are

which separate a city's perceived success from others thought to be in decline. Also

uncertain is the role that metropolitan growth over time, particularly that outside of the

core city, has upon the health of the region and the central city. One plausible explanation

to explain the differences in city outcomes and the effects of regional growth is political

fragmentation.

Political fragmentation, or the number and types of governments at play in a

metro area, create a powerful and complex context in which governance, public policy,

housing and economics must go about their work. A common banner to place problems

such as pollution, traffic congestion, racial isolation and concentrated poverty is under the

notion that too many governments in a region make it near impossible to govern as a

region. The argument that suburban communities have a parasitic effect on cities (Lowi

1979) is just one of many explanations for the decline in central cities over the last 60

years.

This idea is illustrated nicely in work like the Peirce Reports. These

commissioned studies, first published in newspapers beginning in 1987, were charged to

identify the most salient problems facing the city and its region in six cities (Phoenix,

Arizona; Seattle, Washington; Baltimore, Maryland; Owensboro, Kentucky; Dallas, Texas; and St. Paul, Minnesota). The Peirce Reports have three common themes, poor cities and their affluent suburbs (the socioeconomic gulf), sprawl, and a lack of coherent governance (Peirce, Johnson and Hall 1993). Political fragmentation is charged with enabling the outward migration of residents, increasingly converting green space into residential and business space (29) and allowing the wealthy and affluent to create safe havens for their wealth by excluding poorer households, through zoning codes and ordinances (27). Fragmentation of government also creates an environment where problems that cross jurisdictions are incredibly difficult to solve (Peirce, Johnson and Hall 1993, 32). Government officials are alternatively cast as "too many cooks in the kitchen" or view other governments as "us versus them." The detriments of political fragmentation hit core cities particularly hard because they are left to care for those who cannot afford to leave, or for those who have historically been excluded from suburban life. This means that core cities are disadvantaged when competing with suburbs for economic growth.

Though political fragmentation has been charged as harmful, the verdict is still decidedly undecided. This is, in some sense, a problem of causality and perhaps over identification; there are many plausible explanations why some cities have suffered (or not) over the last sixty years. The negative consequence of factors such as the exodus of white households out of the city into suburban enclaves, the decline and relocation of manufacturing in the US, the effects of interstate highways and federal urban programs all tend to correlate with political fragmentation. This is makes is difficult to distinguish if differences in city outcomes is a direct effect of political fragmentation or other factors.

While exposure to each of these factors has impacted cities in different ways, particularly in terms of regional location, cities were all affected by things like highway construction and federal housing policy, yet some have had markedly different outcomes.

A hallmark of the American political system is fragmentation of governing authority across governing bodies, and all cities in the US exist within politically fragmented metro areas. Though the amount of fragmentation varies, the principle goal of this research is to examine the popular notions of why cities thrive or decline in the presence of fragmentation and to see how they measure up alongside theories of political fragmentation's effect. In other words does a city like New York grow and thrive because political fragmentation allows increasing levels of economic interconnectivity and access to urban amenities to rich and poor alike, or does it thrive in spite of vast degrees of fragmentation? A summary of the usual suspects for city decline will be examined and then political fragmentation will be presented as an alternative explanation for the variation seen in city outcomes.

Death and Life of Cities

One of the most striking character changes experienced by urban America is the continued and ongoing population migration toward the edges of metropolitan areas over time. It is not simply that cities lose citizens in their center that is devastating; it is the specific nature of that loss that has been so damaging. The desire to move away from the noise, pollution and crowding in cities (yet remain able to avail oneself on its benefits) stretches all the way back to the earliest cities (Bruegmann 2005). The ability to escape the pathologies of the central city was limited to those wealthy enough to afford the

commute. It was not until the middle of the 20th century that affordable automobiles and housing made it possible for the middle class to choose to exit *en masse*.

Up until relatively recent life in suburbia was also limited primarily to Caucasians (Kruse 2005; Sugrue 2005; Jackson 1985). Through public policy and practice white families were encouraged to exit the city; this move to suburban governments was not random nor was it uniformly distributed across households. While the choice to move is made by individuals, the enticements to do so are a matter of policy and politics. The explanations for the growth of metropolitan America and the decline of core cities include white flight, federal urban policy, manufacturing industry decline, highway development and financial hardship. These components make up a cadre of some of the most influential reasons for sprawl and city struggles.

White Flight. On the surface, America in the late 1940s appears to have been a fantastic place to live. We were experiencing a post-World War II economic boom, Harry Truman was president, we emerged victorious not only in a just and moral war but were key players on the international stage, and we were experiencing an expansion of the middle class. Our manufacturing industry continued to thrive as it shifted from a war industry to the production goods and products. The mood in the country was jubilant. Cities were bustling as all manner of people flooded to them looking for new jobs, careers, lives, starts, and fresh adventures.

A deeper exploration, however, reveals the strains of such rapid growth. The Great Migration of African-Americans during the 1940s and 50s from Southern states to the industrial cities in the north to pursue opportunities for employment in the manufacturing industry grew urban populations dramatically both during and after World

War II. Additionally, immigrants the world over came to the States for the chance at a better life, which often hinged upon employment in manufacturing in a city center. This influx of people, coupled with our returning servicemen from overseas, soon led to a housing shortage in cities. During the war years, new construction and renovation had ground to a halt and afterward could not keep pace with the demand. The use of frame style home construction combined with federally-backed home mortgages kept the housing crisis focused on construction of new homes and creation of communities at the periphery of the city (Jackson 1985).

Access to these new homes and the mortgages to afford them were not available to all, however. The Home Owners Loan Corporation (HOLC) and later the Federal Housing Administration (FHA) adopted the same hierarchical lending structure that had been used by realtors and lenders in urban areas nationwide. Cities had long been segregated and realtors used a color-coding system to impose a racially centered housing policy. The term "redlining" refers to the practice of drawing a perimeter around certain sections of the city where it was unacceptable to buy and sell homes to what was thought of as "less desirable" clients. Racial and ethnic segregation was supported and maintained in cities by the housing industry (Gordon 2008; Judd & Swanstrom 2006; Sugrue 2005).

The rise of suburban communities expanded this racial and ethnic segregation by replacing the realtor's redlining tactics with jurisdictional boundaries. For example a white household interested in a new suburban home could qualify for a 30-year, FHA-backed loan with as little as 10 percent down. Thus, whites were encouraged to pack up the equity in their homes and move outside the city limits. It was also common practice to use restrictive covenants, refuse loan services, or offer prohibitively strict mortgage terms

to potential minority homeowners in order to prevent integration in the suburbs. From the creation of the earliest suburban municipalities through the early 1970s there emerged entire communities that were entirely homogenous in terms of race, ethnicity and income and an alarming number of these remain intact today. African-Americans, Hispanics and Asians were excluded from participating in federal housing programs until the passage of the Fair Housing Act in 1968.

The exodus of white households from Atlanta from the 1950s through the 1970s is described in Kevin Kruse's seminal work, *White Flight* (2005). While unique in many aspects, Atlanta's story exemplifies several important practices within cities that further encouraged white households into suburbia. As white households departed, over-crowded African-American sections of cities began taking up residence outside the infamous redline. Kruse demonstrates how the practice of "blockbusting", a highly effective tactic used in neighborhoods that were in the process of integrating, was employed. Realtors would approach white homeowners on a block-by-block basis and encourage them to sell, telling them that their block, street, or neighborhood was "going black" and when that happened they would be victims to falling housing values, rising criminal activity, vulnerable to the spread of disease, and that their beloved public spaces, parks and schools would be "infiltrated." Using these unscrupulous scare tactics, the realtors would capitalize on one or two black households as the starting point for entire streets emptying out.

The practices of redlining, blockbusting, and restrictive covenants facilitated the beginning of what is known as geographically driven racial sorting (Gordon 2008), where minorities were left with aged housing stock (FHA loans for home renovations were

practically non-existent) while white families enjoyed their choice of new communities with varying levels of services and taxes. The FHA-eligible loans had several requirements which had the effect of focusing home loan services outside the city, such as requirements for lot size, width, distance from other buildings and the street (Jackson 1985). By the time overtly racist policies like restrictive covenants and redlining finally became illegal with the passage of the Fair Housing Act in 1968, followed by the Community Reinvestment Act in 1977, suburban communities had perfected the use of zoning codes based on household income to maintain their much-cherished homogeneity. While it may be unlawful to discriminate by race or ethnicity, there is nothing unlawful about keeping minimum standards for lot size, house size or distance from the street; in effect setting a minimum standard using income in lieu of race as the metric for future residents.

For decades the core city held a concentration of our country's poorest and minorities. During the 1970s the movement to suburban communities was opened to minorities and poorer households as further outward migration to newer communities on the metropolitan fringe left older suburbs available. Suburban America may have begun as an escape for wealthy and upwardly mobile but represents diversity in wealth, race and housing quality. Problems such as drug violence and failing schools, which have been traditionally been associated with the inner-city are now suburban problems as well (Dreier, Mollenkopf & Swanstrom 2004; Orfield 1998). White flight offers a compelling explanation for central city decline by arguing that it was the loss of a particular population class and race that devastated cities. The implication is that cities that thrive

must not have experienced white flight, or at least not to the degree which Rust Belt cities did.

The exodus from central cities like Detroit, Michigan and Atlanta, Georgia does not represent anomalies but reflect a shared experience across all American cities. The growth of suburban America was pioneered by wealthy and upwardly mobile white households and this process began long before the federal government started securing mortgages or the advent of frame style housing (Glaeser 2011; Jackson 1985; Sugrue 2005). White flight as an explanation by itself is unable to explain why cities like San Francisco, California and Detroit, Michigan have found themselves in remarkably different places in terms of urban growth, economic development and racial diversity, despite experiencing exodus to communities outside the city limits. Certainly white flight has had negative consequences for many cities but it has not necessarily a death-knell. To understand why a city like San Francisco which is considered by many as a desirable destination to work, vacation and live, can be so different from Detroit - a bankrupt city, where whole sections of the city are now turning back to prairie and could become urban farmland[3]- other explanations need to be considered, such as the role of the Federal government.

Federal Urban Policy. During the administration of John F. Kennedy and culminating with President Johnson's Great Society, the federal government turned the full weight of its good intention and policy toward the problems of the city. The 1960s saw the rhetoric of an urban crisis shift from a local issue to being wrapped up as part of a larger national dialogue on cities. The Civil Rights Act (1964) and Brown v Board of Education (1954) made enormous legal inroads toward changing social and political

inequities in cities. President Johnson's Great Society programs were crafted to further help impoverished residents and city neighborhoods and seemed to hold great potential and yet in the end failed to live up to expectations (Moynihan, 1969). In 1965 Congress enacted just over 80 programs to address everything from education, health and economic development to workforce training in cities, raising the amount of federal intergovernmental transfers to state and local governments to $41.7 billion by 1973 (Peterson 1981, 86). While each of these programs originated at the federal level, they were administrated and implemented by state and local governments.

Frieden and Sagalyn (1994) write that federally funded urban renewal was an extremely useful program for cities in that it provided "a way to assemble and clear land in and around downtown, to use land for what they wanted, and to do it almost all at the federal expense"(..). The focus of business and civic leaders on demolition and construction led to decades of social unrest and tension. The abuses of urban renewal were manifold, coined by scholars like Lowi (1979) as "black removal" and in cities like Detroit, New Haven, and Newark it created views of deep distrust of government and tensions which sparked riots (Frieden & Sagalyn, 1994). Altshuler and Luberoff point out that, "central city leaders experienced a growing sense of desperation. In order to head off the spiral of decline, they came to believe, nothing short of radical surgery would do to clear away slums, to assemble and write down the large cost of development sites, to build expressways from the suburbs and regional airports into downtown, and more generally to retrofit obsolete elements of the urban fabric for the dominant technologies and corporate space demands of the second half of the twentieth century" (2003, 14). Urban renewal programs successfully enabled cities to cheaply double down their efforts

to stabilize downtown business districts but this was often at the expense of residential neighborhoods.

In the face of mounting dissatisfaction with urban renewal programs, President Nixon transferred control of urban federal grants from Washington D.C. to the states and cities and then merged urban renewal programs into a single funding source now known as community development block grants (CDBG) (Frieden & Sagalyn, 1994). Cities could no longer depend upon federal dollars to demolish or construct new buildings, but would have to compete with other cities, done by a formula originally more beneficial to newer cities, for a share of each year's community development grant. The fallout from federally funded Urban Renewal program meant that cities had to pursue different avenues in order to keep economic life flowing into central business districts, the hope being that a revitalized downtown will lead to revitalization throughout the city.

Frieden and Sagalyn (1994) have studied some of the efforts city governments' have made toward modern-day urban renewal. Most have continued to focus on central business districts and the struggle to bring dollars into a city with significantly less federal aid. Before the suburban boom in the early 1950s, US cities were the primary market for goods and services. It did not take long, though, for suburban areas to start competing with cities to be a new home for some of its business life. Businesses that specialized in providing goods and services to the typical household followed the middle-class to the suburbs. Even in the 1950s, city officials felt the trend of business decline and wrung their hands over tax revenue losses. City leaders and businesses keenly observed the economic successes of suburban malls since the opening of Northgate Mall in Seattle, Washington. One tactic used in the 1980s and 90s that has helped many a city's

downtown area bring business back has, ironically, been modeling the suburban shopping mall, although not in suburban fashion. Seattle, Boston, Pasadena (even St Louis) all have attempted to bring entice business back to downtown through the mall concept. Urban malls such as Paseo Colorado in Pasadena, California are successful because they interweave residential living and amenities with retail.[4]

Urban renewal was winding down by 1970, and many cities had used the programs to build conference centers and stadiums that successfully drew suburbanites to downtown, and many suburban Americans worked in the city. Federal urban policies were designed to help cities combat their social and economic woes, yet unfortunately they have led to frustration and left many jaded, displaced and, if able, opting for suburban communities. After the game was over, the conference had ended or the workday was done, downtowns remained troubled ghosts of what they once were. Federally-sponsored programs have changed cities irrevocably and city officials as well as the business community are still dealing with the after-effects. However the impact of these programs and the structures built (and demolished) with federal dollars did not wound all cities universally. Maintaining stadiums, conference centers and vibrant downtowns allows cities to capitalize on being at the center of the marketplace of ideas and an entertainment destination. Attracting people the world over to start a business, a restaurant or to play a concert are good things for a city and as Glaeser (2011) points out, a city's success is wrapped up in its ability to be an attractive economic and social hub. Many cities have been able to increase their attractiveness by leveraging urban renewal programs to shape their look and appeal in ways that would have been out of reach without federal help.

Highways. Since the 1930s, an interstate highway system had been on the wish list of automakers, trucking and freight unions, that lobbied Congress and policy makers to craft legislation. It was under President Eisenhower that a highways act (where the federal government footed most of the bill), finally had enough political traction to become law. The Interstate Highway Act of 1956 and has had a profound and lasting effect on how we Americans think about transportation. Cities from New York to Los Angeles embraced the super highways, believing that they would be able to right many urban wrongs, from blight to economic decline. Agricultural areas saw highways as a streamlined, efficient way to bring goods to bigger markets faster, and further away. Making good use of urban renewal programs, American cities sought out highways as a means to promote their growth. The expansion of suburbia, too, has been aided by federal transportation policy that is almost uniformly in favor of automobiles. Highway construction represented ways to remake the urban landscape and connect cities.

Interstates made living outside the city possible, and practically convenient precisely because they connected suburban communities with central cities. Arguably the phenomena of a sprawling suburban landscape surrounding central cities would not have happened on the same scale without interstates. Not only did freeways provide the physical connections between cities and suburbs, they were instrumental in the attempts of cities to clear out their slums and other so-called blighted neighborhoods and to rejuvenate the central business districts. What city residents and public officials found, however, was that the cost of placing an interstate through a city was not the magic bullet solution they had hoped for after all but at times even compounded the same old problems. In high-density urban areas freeways often cut through neighborhoods causing

sections to become physically isolated, which caused decay and only encouraged those residents to move.

State and local transportation departments were responsible for implementation of the Highway Act. They were also accountable for the location of and allocations for the freeways. Transportation departments adhered to cultures that value efficiency and scientific principles as the best means to serve the public and were resistant to change highway plans based on political influence or neighborhood pleas. As a result, much to his or her chagrin, the typical local government official had very little to do with where actual routes would be located. What was important to the national and state highway departments was alleviating traffic congestion in urban areas by providing the most direct and timely routes, often to the detriment of community preservation and rational land development (Fainstein et al 1986).

For many New England or Midwestern cities struggling against the changing tide that was carrying their populations and businesses out to the suburbs, an efficient network of highways implemented at the national level and largely on the federal dime had seemed as if it would be a win/win for everybody. Many of these officials believed interstate highways would boost the city's economies and entice their citizens to remain, at least for shopping and entertainment. However, one of the well-documented effects of highway development is how it spurred on suburbanization (Fainstein et al 1986, 14; Jackson, 1985). Competition among cities for business and capital investments as well as government funding for projects and improvements has always been fierce (Logan & Molotch, 52) and the need to incorporate an interstate highway within the city meant that rarely were cities leaders able to approach highway construction with thoughtful,

articulated plans. A significant exception to this was New York City planner Robert

Moses, who seemed to have no shortage of grand plans for interweaving federally-funded

highways throughout the entire New York region (Caro 1975). Moses' plans were not

benign, he was a master of using highways as a means for removing poor minority

residential neighborhoods away from downtown and their residents ultimately into

segregated public housing. A number of city leaders emulated his schemes or hired him

as a consultant. Through at least the 1970s, top government officials and members of the

business community viewed interstate projects as necessary for the future of their cities

and an economic godsend.

Public officials felt a real sense of urgency when it came to highway

development. Similar to the pressure to have multiple railroad lines going through a city,

if an urban area failed to connect with a major highway, officials knew the effect would

be crippling. They foresaw that highways were necessary to keep businesses located in

the city. The interstate system was a key component in shaping the economic

connectivity between states and regions, as well providing ease for people to travel great

distances (Dunn 1998). Transportation policy at both the national and state levels came to

be dominated by road construction and the auto industry at the expense of all other modes

of transportation. In Detroit and other cities public transportation fell into serious

disrepair or else was nearly choked out of existence. Scholars such as Jackson (1985) and

Judd *et al*. (1998) have linked highway development to increases in urban sprawl and

cultural separatism. Highways disproportionately favored white households who desired

to take advantage of home ownership opportunities made possible by federal housing

policy in the suburbs. Minorities who remained in central cities were left with a severely

underdeveloped public transit system as transit funding dwindled or were bought and shut down by private organizations who would benefit from auto industry expansion (Bullard 2004).

Teaford (1990, 1993) has examined how cities such as Pittsburgh and Baltimore have struggled to cope with declining economic vitality and a changing population post-WWII. Interstates in particular have acted as double-edged swords because though people were attracted downtown for jobs, entertainment or cultural events, highways have also facilitated movement out to the suburbs, which helps explain cities' struggles with urban highway development.

Cities clamored for express highways to be built within their borders, hopeful it would stimulate and grow their market economy. They were unable to manage the negative effects highways had on neighborhood redevelopment. For many cities, expressway projects only served to demolish minority neighborhoods, herding those displaced into other marginalized neighborhoods, thereby causing stress on social services and unrest (Squires, 191). Interstate highways have had some severe effects on cities, but they have made commuting in and out of the city convenient. Highways alone did not create suburban sprawl and cannot bear the entire burden for population loss of urban cores. Breugmann (2005) argues that suburbanization would have occurred whether interstate highways had been built or not because there was a strong desire by many to move to communities outside the city limits. While there are differences in the degree highways impacted a city, the location of highways within cities and historic differences between cities, all major US cities are on interstate routes and highways

represent an unchanging, universal factor – thus they cannot entirely explain the differences in growth or decline that cities have experienced.

Manufacturing. Beyond population loss, cities also faced the loss of commercial activity, most especially in production. In the Fordist Era manufacturing industry has traditionally been a source of reliable, entry-level work that paid relatively well and did not require a college degree. During the 1940s through the 1970s thousands of African-Americans were migrating to cities, dealing with the not-so-easy task of finding decent housing for their family and adjusting to life in a new place. Over the same time period, America's industrial economy was being transformed into one based almost solely on service. Technological innovations in transportation and communication enabled many industries to relocate outside the urban core and even in other countries where regulation and oversight were less strenuous and where trade unions were weak (Sugrue 2005). The global marketplace also impacted US manufacturing such as the steel industry, which was devastated when international steel production became competitive in price and quality.

John Portz's work *The Politics of Plant Closings* considers the various responses a city or community takes when faced with a plant closing. Portz (1990) shows how developing relationships with key industry leaders and being quick to form alliances in order to amass resources on behalf of a threatened industry had a decisive impact on whether a plant ultimately closed. However, policy makers are constrained by the tools, bargaining chips, goals, and rules that play into whether a plant will close or remain open. While no public official wants business to leave the local economy, there are times when there is little that can be done to affect the decision to close a plant down. This is

particularly evident in older Northern and Midwestern cities where suburban municipalities or Sunbelt communities were able to welcome manufactures into their communities by offering tax incentives. Businesses also found the South and Sunbelt's lack of organized labor and unions attractive. The movement of manufacturing to the Sun Belt has been a boon to Southern and Western cities which have grown and prospered dramatically over the last sixty years (Savitch & Kantor 2002).

The movement of the auto industry's manufacturing plants from Detroit to suburban and Sunbelt regions are illustrative of devastating loss and the inability of city leaders to prevent it. Sugrue describes how the loss of jobs in the automotive industry had a ripple effect as smaller industries that supported auto manufacturing either went out of business or moved closer to newer plants, this in turn hurt retail business, bars and restaurants (2005, 149). The response of Detroit city officials to loss of jobs and high rates of unemployment was to focus attention on building massive structures that were largely unneeded and did not provide enough jobs to outweigh the costs of neighborhood destruction and revenue loss through tax breaks (Glaeser 2011, 62-62). Central cities, particularly Rust Belt cities, are not the manufacturing centers they were in the 19th Century. As manufacturing jobs disappeared, city officials have been left overseeing abandoned factories, vacant warehouses and populations ill-equipped to work in a service and technology driven economy.

While industrial decline in the US was concentrated in the Rust Belt, some cities were able to successfully reinvent themselves. Cities such as Detroit, Pittsburgh, New York and Boston were manufacturing giants but do not all share the same fate. New York suffered severely from the loss of the garment industry but flourished with the growth of

its financial services sector. Glaeser (2011, 42) makes the point that while politics and political mismanagement are a common feature of Rust Belt cities, the critical mistake was focusing on the built environment rather than promoting commerce, building a skilled workforce and fostering entrepreneurial innovation. The decline of the manufacturing industry was harmful to cities but it did not necessarily put cities on a permanent path to ruin.

Fragmentation and the City

The impact of white flight, federal urban policy, highways and the decline of manufacturing in the central city are some of the traditional reasons for why some cities in America have suffered. However these explanations do not fully explain the variation in outcomes that has occurred over the last 60 years. White flight, urban renewal programs, highway construction and blue-collar job loss occurred almost universally across cities and yet not all cities have found themselves in continued decline. In other words, cities that have grown and thrived do so not because they never experienced white flight or do not have highways but in spite of them. What then could explain the differences between cities in decline and cities that grow? I submit that the varying levels of political fragmentation that exist in metropolitan areas play just such a role.

An additional explanation for why some regions end up in more disastrous predicaments than others is that higher levels of fragmentation lead to uneven tax levels, and social disparities (Berry 2009). Political fragmentation has been linked to racial segregation in school districts and across municipalities. Additionally, fragmentation creates more stakeholders, which can bog down responses to problems across the entire region (Leach 1976, 156). In spite of much study across a number of decades which has

been devoted to sorting out these claims, large gaps in our understanding of political fragmentation remain. The largest of these and the primary focus of my study is based on an examination of how political fragmentation compares with other explanations of decline.

The impact of fragmentation on the condition of the central city is an area in need of continued study but it is a sensitive topic precisely because the choice of where to live is a cornerstone of the American Dream. If the decline of central cities is due, even in part, to political fragmentation, it calls into question the idea that we are free and independent to choose where to live. As the number of governments grow and metropolitan areas expand outward, the enticements to exit the central city may become all the more attractive. Chapter 3 will discuss the role that political fragmentation has played in city outcomes and demonstrate that cities can at times be at a disadvantage in competing with their suburbs where housing is both cheaper and larger, schools are newer and the governing structures young and pliable.

Summary

White flight, federal urban policy, highways and the decline of the manufacturing industry in Rustbelt cities each offer explanations for urban decline in America. However they are not able to fully explain the differences between whether a city ultimately remains in decline or a state of slow growth or even becomes a fast growth city. It is possible that political fragmentation can explain the disparity. Regions with less fragmentation may have denser cities and an easier time crafting solutions for metropolitan wide problems, whereas urban areas with higher levels of fragmentation

may succumb to a competitive and defensive view of political neighbors and be resistant to collective action.

How interconnected are the governing bodies that exist around the central cities to the condition of the central city? Does a region suffer because its central city can only grasp at solutions to its problems, or because there is a failure to see the struggles of the city as having anything to do with the behavior of governing bodies within the region? There are no quick and easy answers to these questions but building a better understanding of how cities decline in relation to their region. Chapter 3 will fill in the gap left from urban political theories will address this with an in-depth consideration of metropolitan government and its structures.

Notes: Chapter 2

[1] Growth in Urban Population Outpaces Rest of Nation, Census Bureau Reports. Census Newsroom update Monday, March 26, 2012. CB12-50.
http://www.census.gov/newsroom/releases/archives/2010_census/cb12-50.html

[2] In the top 25 high schools as ranked by U.S. News and World report in 2012, 10 are located in the central city. U.S. News and World Report rankings for research hospitals in 2012 for specialties such as cancer, diabetes, and cardiology are all located within central cities. The FBI's Crime in the United States report for 2012 showed that violent crime rates have been falling for the last ten years.

[3] Renn, November 4, 2009. "Detroit: Urban Laboratory and the New American Frontier," *NewGeography*, http://www.newgeography.com/content/001171-detroit-urban-laboratory-and-new-american-frontier.

[4] Pasadena, California is a classic suburb and on the surface may not appear to fit within the same list with cities like Seattle and Boston. The example of Paseo is included because as the metropolitan area of Los Angeles has expanded, suburban Pasadena became more urbanized and experienced problems that were typically associated with a central city, particularly disinvestment in its central business district. Its mixed use mall is touted as a success story for reinvestment and development.

Chapter 3

Cities Awash in a Sea of Governments

"A Region is an area safely larger than the last one whose problems we found no solution."
-Jane Jacobs, *The Death and Life of Great American Cities*

A common caricature of the suburbs is that they are uniform in their upper-class values, populated by those who are wealthy or upwardly mobile and politically Republican. Suburban communities have also been credited for causing the central city to carry an unfair share of the expenditures to support public welfare, pollution control, museums, highway and street maintenance, as well as public safety and crime fighting (Rehfuss 1977). Rehfuss is swift to point out that these attributes do not apply to all suburbs but are at times formed and perpetuated from cherry-picked examples. Still decades after his writing, works like Bishop's *The Great Sort* ascribe much the same characteristics to the suburban way of life.[1] As discussed in Chapter 2, there are many reasons why cities have experienced dramatically different outcomes over the last century such as the out migration of manufacturing, technological innovation, neighborhood destabilization, crime, blight, and failing schools. Alone, none of these factors can adequately explain the sometimes vast differences in outcomes that exist between cities. Political fragmentation may be the missing link in these explanations, indeed the persistence of the "suburbs are exploitive and harmful to core cities" hypothesis is due in part to the continued linking of governing structure to uneven paths of renewal and decline that continue to play out in U.S. cities.

The idea that metropolitan growth outside of the central city and political fragmentation can have a negative impact on the city is not path breaking. Indeed it is a

common complaint in the literature stretching back to 1926 Supreme Court affirmation of

Euclidean zoning in Euclid *v*. Ambler which essentially allowed suburbs to exclude

undesirable residents (Wolf 2008) to reports by the Advisory Commission on

Intergovernmental Relations of the economic and social disparities between central city

and suburb (ACIR 1965). Though warnings of the dangers in unbridled political

fragmentation have been sounded for decades, the empirical evidence that fragmentation

actually causes harm to central cities is still developing. All metropolitan areas in the

U.S. are politically fragmented to varying degrees but does the amount of fragmentation

play a role in the growth, economic vitality, or diversity of a central city? In light of that

question, this chapter will consider empirical evidence that has accumulated over the last

half century to ascertain what is understood about the effects of fragmentation on central

cities.

Fragmentation is pervasive in metropolitan areas and because of this scholars

have developed many ways of defining and quantifying the concept. What is most

commonly meant by the term political fragmentation, at least in the local government

context, is the division of some geographic space into units of government, commonly

municipalities. But fragmentation also occurs in the hierarchy of government as

municipalities are nested within special districts, counties, states, and ultimately the

federal government. In addition to the layering and multiplicity of governments, I add in

this study a third arena of fragmentation for consideration, and that is the division of

political power within a level of government among elected official,s referred to as

internal fragmentation. Taken together, these three components of fragmentation

comprise a more comprehensive and nuanced definition of political fragmentation which

sets this study apart. Each of these components has its own body of scholarship focused on understanding the impact fragmentation has on a range of topics from political participation and land use, to service delivery and taxation. It is common for studies to examine only one level of fragmentation at a time, but this singular view obscures complexities in fragmentation's effects that emerge when each component is represented. While Chapter 1 included a discussion of metropolitan organization and political fragmentation, this chapter drills down deeper into the discussion of how political fragmentation shapes city outcomes and how this may impact the greater metropolitan area.

Horizontal Fragmentation

The multiplicity of governing units within a metropolitan area is horizontal fragmentation. Perhaps the most common conceptualization of political fragmentation is simply the number of governments in any given geography. Within a metropolitan area, the number of municipalities or special districts would be a general indication of how much fragmentation exists within the region. Horizontal fragmentation occurs wherever there are coterminous governing units of the same type within the metro area, such as local municipal governments. Fragmentation at this level varies in cities and metro areas both across geographic space and through time. In general urban areas in the Northeast and Midwest have more horizontal fragmentation than regions in the South and West. Horizontal fragmentation has leveled off in terms of the number of new municipal governments. However, growth is steady in special districts which continue to be created in metropolitan areas. There has also been a downward trend in school district growth, primarily because of consolidation during the late 1930s through 1980. Although

consolidation has been concentrated in rural districts it was driven at the state level by a bureaucratic push for professionalism and centralization of district control (Strang 1987). While horizontal fragmentation generally is the proliferation of non-overlapping governing units in a metro area, the bulk of the scholarly research focuses on the municipal level.

There is a deep well of scholarly work on horizontal fragmentation showing its impact on everything from governance, to the movement of jobs and population from the central city to the urban fringe. High concentrations of governments in a metro area have been linked to racial isolation and separation, growth of the metro area at the fringe, and economic disparity between the core city and suburban municipalities. A review of these findings and how they impact city outcomes is useful to establish what the expected effects of horizontal fragmentation will be for the analysis.

The literature on urban and metropolitan politics broadly classifies metro areas into central cities and suburbs. This city-suburb dichotomy has produced two perspectives about the effectiveness of local governments in using their legal powers and the ability of local officials to control the affairs of their own jurisdiction. The disparities that developed between cities and their suburbs during the 1950s and 1960s were systematic and observed in urban areas across the country leading to the suburban exploitation hypothesis. The work of Kasarda and others, who examined the city-suburb dynamic, developed the suburban exploitation hypothesis as a framework to explain the economic stratification occurring between city and suburb. In essence the exploitation hypothesis claimed that suburban residents take advantage of central cities by demanding services and facilities, but avoid the attendant costs by living beyond the city's

jurisdiction (Kasarda 1972). Later work by Slovak shows the fading of suburban

demands for services such as streets and recreational facilities but a growing demand for

protective services (1985). This led Slovak to conclude that exploitation of cities still

occurs, just in a more focused way (185). The exploitation hypothesis has faded, pushed

back by scholarly reviews such as Hawkins and Ihrke (1999) who argue that it is now

suburbs that instead of taking from cities, are providing income through taxes and fees,

employment, retail revenues and then provide parks, retail, jobs and other recreation to

city residents.

In some aspects Hawkins and Ihrke's criticism is valid, Kasarda's work looked at

metropolitan areas during the 1950s and 1960s before cities had adopted measures to

limit suburban "free-riders" such as fee-for-service, earnings taxes, and special

metropolitan taxing districts. However the argument that central cities and suburban

governments are on unequal footing remains relevant in terms of autonomy over land use

policies and as a question of whether fragmentation facilitates racial and economic

sorting, consumption of green space and unplanned growth.

A common view of fragmentation is that it encourages growth at the fringe by

turning green space into residential neighborhoods, office parks and retail space. The

movement of people and firms is in the same direction, towards the periphery. However

the empirical link between sprawl and fragmentation is not conclusive. Razin and

Rosentraub's (2000) study of U.S. and Canadian cities finds a weak correlation between

sprawl and fragmentation. They also note that having a region with less fragmentation

does not equate to compact development or high population density. However

Carruther's (2003) research at the county level found a significant relationship between

fragmentation and urban sprawl. He found that municipal and special district fragmentation, infrastructure investments and white flight all have significant impacts on growth in unincorporated areas on urban fringes (475). These studies demonstrate that sprawl is not solely a factor of growing horizontal fragmentation but a result of variations in the powers and restrictions on land use. There is evidence that development on the edges of metropolitan areas is driven not only by population growth, but by localized zoning laws that direct and manipulate development to the benefit of housing prices (Poindexter 2005). The desire to control land use, exclude undesirable businesses and low-income housing are also key factors in metropolitan political reorganization according to Hogen-Esch (2001) and Purcell's (2001) studies on secession attempts in Los Angeles' San Fernando Valley. The conditions necessary to promote competition between governing units and to use limited governing authority to be attractive to upwardly mobile households seems to be magnified in urban areas with higher horizontal fragmentation.

In that same vein, a centralized metropolitan area would be characterized by less income sorting and competition between communities. Portland, Oregon is notable for its mechanism put in place to control sprawl, reduce the zero-sum nature of competition between the city and its suburbs, and to keep low-income housing decentralized by requiring multi-family, affordable housing throughout the region (Aoki 2005). The city of Portland has certainly benefited from being within a centralized region but the conditions are somewhat unique to Portland. Metro areas have not eagerly sought to model the governing arrangements of Portland, but this is partly due to the role of state law and the way it defines and limits the choices available to communities within a metropolitan area.

Peterson (1981) makes a compelling argument that cities are limited by state laws in the choices they make. Jurisdictions must compete with other governments within the region and because cities are limited, this compels them to narrow down to a singular focus on economic development. Redistributive policies that would directly benefit neighborhood residents are relatively ineffectual or pushed to the backburner. City officials must focus on bringing in private investments, at times to the neglect of local residents, who are then more likely to move outside the central city to places where they perceive their needs will be better met. Limited political autonomy and fierce competition then become the causal mechanism to explain city outcomes. In regions where there are more municipal governments surrounding the central city, the more magnified the focus will be on economic development and perceptions of competition.

While Peterson's work emphasizes the limited scope of local autonomy, Danielson's work focuses on what cities do with the autonomy they possess. He argues that municipal governments utilize their power to protect boundary lines, set lot sizes, establish building codes and housing densities, in order to ensure that residents meet a minimum economic threshold. This allows local governments to keep a high value property tax base and a low tax rate (Danielson 1976). Danielson's concern is not what central cities are unable to do with their local authority but the ability of suburban governments to effectively exclude certain groups of people - though history shows cities are not naive of exclusionary powers. When suburban communities systematically exclude apartment buildings and other multifamily housing and demand that new residences and lots be a certain size, they restrict the types of households that are able to move into the community. Central cities end up with disproportionally higher levels of

homeless, mentally ill, low-income, and elderly populations (Parks 1997). By this reasoning, cities surrounded by more municipal governments should find themselves shouldering a disproportionate burden of poorer residents.

Horizontal fragmentation is also a source of blame when it comes to racial separation and isolation across geography. Part of this is historic in nature because early federal housing policy routinely favored white households over minorities and encouraged whites to move outside the city limits. Municipalities also commonly adopted laws and policies that made it illegal to sell, lease, or rent property to racial minorities. While racially motivated restrictive covenants have been illegal for decades, their ghosts linger on in urban housing patterns. Jonas (1998) shows that the desegregation of the Columbus Ohio School District not only encouraged white flight, but housing developers successfully exploited the fragmented metro area to promote continual residential development.

There is scholarly evidence to suggest that higher levels of horizontal fragmentation in the metropolitan area have led to greater concentrations of minority groups in the central city (and then in first-ring suburbs) and less integration in municipalities, within municipalities and across the region (Massey and Denton 1988, Massey and Hajnal 1995). Logan (2001), Massey and Denton (1993) and Farley (2008) clearly show that not only are communities and neighborhoods still highly segregated but white exposure to other races, in particular African-Americans, is limited. Segregation and isolation of races appears to be more pronounced in larger metropolitan areas (Glaeser and Vigdor 2001). This pattern of segregation extends beyond the neighborhood or municipality. Bischoff's (2008) investigation of segregation across political units

shows that increasing the number of school districts in a region increases the levels of racial segregation. Despite the relative decline of research on the suburban exploitation hypothesis, the factors of that framework still studied point to evidence that political fragmentation, specifically horizontal fragmentation remain important for understanding the racial composition of metropolitan areas.

Segregation and poverty have not respected the central city-suburban bright line and have not remained confined to city ghettos and slums. Municipal decline and poverty have found their way into suburban neighborhoods in metropolitan areas across the country. Suburban municipalities, particularly traditional working-class communities, have witnessed an influx of poorer residents, economic disinvestment, struggling schools, and rising crime. Barron and Frug (2005), Dreir (2004), Orfield (2002), and Vicino (2008) are among those who demonstrate that local autonomy over land use, tax levels and education policy are often not enough to leverage the fiscal capacity necessary to combat decline. The problems of central cities are now common complaints in inner-ring working-class suburbs. The decline of suburban communities has brought to light an interesting pattern in local autonomy over land use. It would seem that the tools available for local government to shape what happens within their boundaries appear more powerful when cultivating residents of higher incomes but when faced with the demands that accompany poorer households and a need for more redistributive policies, the tools seem inadequate.

The amount of fragmentation in a metro area is a further complexity of local autonomy. Vicino's study of Baltimore is illustrative. The typical pattern goes something like this: High levels of fragmentation allow newly developing fringe areas to exclude

lower income households through zoning codes; older suburban communities lose residents to the newer neighborhoods and are replaced by poorer households who require a higher level of public services. Metro areas with higher fragmentation would be expected to have more extreme levels of income sorting, demonstrating the pattern described above. In the Baltimore case struggling suburban communities exist in very low levels of fragmentation. Outside of the City of Baltimore, Baltimore County has no other municipal governments and so presents an opportunity to test the assumption that where there is centralized local autonomy to pool resources and redirect funds, there will be less blight and poverty. Vicino finds that despite a consolidated political structure and concentrated redevelopment efforts Baltimore County lacked the regional tools and funding from state and federal government needed to adequately stop and reverse decline (2008). Our understanding of how horizontal fragmentation shapes suburban and central city outcomes is still not entirely clear and this is due to the complex nature of metropolitan fragmentation in America. The actions of other governments certainly impacts central cities, but the way that vertical and internal fragmentation exert themselves on the city are different.

Summary. The scholarly evidence suggests several conclusions about the impact of horizontal fragmentation. Metropolitan areas with higher numbers of municipal governments surrounding central cities have greater degrees of racial sorting leading to higher levels of segregation and racial isolation. Increases in municipal growth increase the likelihood that there will be pockets of isolated poverty and wealth not just in the central city but in the suburbs as well. Municipal growth is also linked to greater development of green space and growth of the metropolitan area at the fringe. Horizontal

fragmentation may also negatively impact the population density of the central city as residents have more options beyond the city limits. Cities surrounded by greater numbers of municipalities may view the surrounding communities as competition for resources and revenues and thus are more likely to tax wages on those who work or reside within the city.

Hypotheses. The literature on horizontal fragmentation leads to the following hypotheses to be examined in this study. Differing levels of horizontal fragmentation will have a negative impact on central city population change. As the proportion of governments, particularly school districts and municipalities, increase in a metropolitan area the population in the central city is expected to decrease. Horizontal fragmentation is also expected to have a significant relationship with segregation across the metropolitan area (measured by racial dissimilarity and isolation). As the proportion of municipal governments and school districts increase in a metropolitan area, the levels of dissimilarity and isolation are also expected to increase. In other words, more government will indicate higher levels of overall segregation.

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Vertical Fragmentation

Political fragmentation is not only the proliferation of governing units of the same type across the metropolitan area, but also occurs whenever governing bodies overlap each other. In the United States, governments exist in a top-down hierarchy; federal, state, county, and municipality where each level has constitutional authority over a smaller unit. Within a metropolitan area however, governments exist in an additional type of vertical fragmentation called jurisdictional overlap. Governing units do not always fit

neatly within the boundary lines of larger geographies and so vertical fragmentation is created whenever jurisdictions intersect each other (Berry 2009, Park 1997, Wagner and Weber 1975). For instance, a resident of the city of St. Louis, Missouri pays taxes to 10 different taxing authorities. Some of these taxing authorities, like the public schools and city operations only collect revenue from city residents but others, such as the sewer district and the zoo and museum district, collect taxes from city residents as well as non-city (i.e. suburban) residents. Typically with metro areas, governing units that overlap other governments do not exercise authority in a hierarchical sense but only over a specific area of service provision. The focus in this study is where vertical fragmentation occurs at the metropolitan level, which is mainly in special districts. Following the work of Berry (2009) vertical fragmentation will be defined as the territorial overlapping of special districts within metropolitan areas. Governments such as counties and municipalities rarely have boundaries that overlap, however school districts, sanitation districts, parks, and even libraries can pile on, one on top of another.

Scholarly evidence on vertical fragmentation show that it creates financial disparities between the central city and the rest of a metro area (Sacks 1968), increases the redundancy in service provision (Parks and Oakerson 1993) and has a harmful effect on the economic growth and incomes of a region (Nelson and Foster 1999). There has been a rise in the number of studies on regional governance. The discussion of the effects of vertical fragmentation includes both the differences in cities with decentralized and centralized regional government as well as instances where there is no formal regional government structure but networks of governance.

Vertical fragmentation creates an environment ripe for competition not only between governments with similar powers but also between governing units of different powers. Park (1997) interprets this intergovernmental competition as something innate to our federal system: The constitutions, statutes and rules of states encourage counties, central cities and suburbs to compete with each other in order to prevent political monopoly and preserve jurisdictional autonomy (730). This is demonstrated by Miller's (1981) finding that local governments desire to maintain prominence and power and will do so by increasing their service responsibilities. Local governments are attuned to their position within the metropolitan area, particularly the policy activities of the central city, and will adjust their expenditures in order to compete for development or cooperate on public safety policies (Park 1997, 743).

Jurisdictions may engage in competition on the horizontal level but with vertical fragmentation, where governments overlap, there is also a pull towards monopolistic behavior (Wagner and Weber 1975). Governments balance a combination of profit maximization and output maximization and so when the population is small, less than 150,000 according to research by Wagner and Weber, governments will focus on cost-reduction. Beyond that population size they switch and focus more on controlling supply (1975, 679). Fragmentation is also accused of causing inefficiencies in service delivery, as well as driving up the cost of providing those services. This cost can be seen overtly through higher taxes or covertly through special districts that take in tax revenue, but it is sometimes hard to distinguish for the typical citizen (Berry 2009). But when inter-municipal cooperation occurs, it can promote efficiency, equity and voice (Warner and

Hefetz 2002). Dowding and Mergoupis (2003) also find that fragmented governing systems do not increase efficiency either at the jurisdiction or at the metropolitan level.

Beyond effects on governing behavior, vertical fragmentation has some distinct impacts on political participation. In fragmented metropolitan areas citizens are not better informed about their local government's service-tax package; they are not more likely to participate in local affairs; nor are they more satisfied with their local services when compared to residents of a consolidated, regional government (Lyons and Lowery 1989). Kelleher and Lowery note that fragmented governing arrangements in metro areas do not promote turnout until it reaches a theoretical point where there are so many governments it resembles a competitive market scenario. However when a metro area moved to consolidated government political participation by voting was predicted to be higher (2004). The level of political participation is also an important factor when it comes to understanding the role of special district governments.

Special districts vary widely in size from subdivision-size to large enough to overlap other governing boundaries. Special districts are designed to provide a single service such as education, airports, highways, water, or mass transit. These governing units may collect a tax or issue fees for service in order to operate and over the last sixty years they have grown more than any other type of government. The distribution of special districts varies across metropolitan areas, something which Foster (1996) attributes to the legal environment in states. She finds that metropolitan areas with greater concentration of special districts exist in states where the ground rules for creating governments that oversee service delivery are more permissible (306). The growth of special districts can be attributed to a pattern of officials utilizing lenient state laws to

simply create a new, single-purpose governing unit and avoid putting a tax increase before voters. Though residents are unable to avoid paying for the new service, they typically accept a special district as legitimate. The works of Berry (2009), Foster (1997) and Hendrick, Jimenez and Lal (2011) clearly show that vertical fragmentation actually increases total government spending. In other words, it is more expensive to live in metro areas that have higher levels of vertical fragmentation.

Single-service governments are criticized for not carrying the same expectations of transparency and accountability that are ascribed to elected offices at the county or municipal level. The role of special districts on metropolitan governance and city service provision is a particular concern in this regard because even in cases where officials are elected there is still a risk that they will become captured by special interests. Special interest capture takes place because political participation is significantly lower for single-function elections versus general-purpose elections; they typically do not occur at the same time as other elections. Berry (2009, 65-67) discusses how the lower turnout can mean that the voters who do participate are not representative of the general public but of those select few who have a vested stake in the actions of the single-purpose government. The end result is that single-purpose governments tend to increase the cost of service provision as elected officials align policy closer to the desires of those who voted for them (Berry 2009).

The number of special districts, and the level of overlapping governments can also create an environment where public policies are ineffective and private developers can take advantage of fragmentation. Jonas' (1998) study of Franklin County and its central city Columbus, Ohio underscores this phenomenon. A busing program

implemented in the early 1980s to bring racial balance to the Columbus School District instigated a wave of white flight into other areas of Franklin County not included in the Columbus district. This was further exasperated by housing developers who utilized the vertical fragmentation – school districts, municipalities, county and state governments – to expand water and sewer services in order to build more housing outside of the Columbus School District. Developers also worked to keep school district and municipal boundary lines intact to keep the Columbus School District from incorporating new territory. Ultimately this maintained conditions for further white flight out of city schools (Jonas 1998, 335). The experience of Columbus is unique but it emphasizes a byproduct of vertical fragmentation: Where there is perceived demand economic development will work governing structures to their advantage in order to meet supply.

Central cities tend to have less vertical fragmentation because they produce many services in house. Suburban governments have higher levels because many governments produce the same package of services (Parks and Oakerson 1993). Sacks (1967) found that fiscal disparities – the gap between needs and resources – are higher in central cities than in suburban areas. This is driven by differences in expenditures. Cities were found to have lower resources and higher tax rates, and to focus less spending on education but more on non-education services compared to their surrounding region (Sacks 1967, 249). If a multiplicity of governments encourages sorting and drives disparities in income between the central city and its suburbs then it makes sense that cities would have to increase spending on other areas such as safety and health. In contrast, suburban governments are free to spend more on education services because there is less demand for safety and health services.

There is also evidence that vertical fragmentation impacts the central city's economic growth. As political fragmentation in a metropolitan area grows, economic growth and population growth increase as individuals and households have greater choice of where to reside. Stansel (2004) finds that the number of municipalities and the number of counties per 100,000 residents have a positive effect on economic growth as measured by population growth and per capita income. His analysis lends support to the idea the fragmentation is not harmful to cities but economic growth is actually encouraged in areas with more government.

The work of those like Rusk (1993) and Peirce (1993) suggest that in states where the laws of incorporation are more lenient central cities are doing better because they have been able to grow and expand their territory and population through annexation. Houston is an iconic example of this. The city was given a significant amount of autonomy from the state government to determine what areas were annexed into the city. No other major city has successfully adopted ten annexations between 1978 and 1996. Houston demonstrates that expanding territory is an effective way to capture population and revenues. Cities that exist in states where incorporation laws are harder are less likely to have successfully expanded their borders. This is because vertical fragmentation allows the higher level government to set the rules that influence a lower level of government. Rusk's elasticity hypothesis has been criticized though because his models fail to control for region and most states that have easier incorporation laws are located in the South and West, whereas the tougher incorporation states are primarily in the North East and Midwest. As Houston incorporated more and more territory, suburban areas felt

threatened enough that the state of Texas changed its laws to limit the geographic growth of the central city.

Summary. Vertical fragmentation occurs when governing units territorially overlap one another. Within the metropolitan area, vertical fragmentation exists as governments are piled on in a top down fashion, counties, special districts, municipalities and towns. While municipalities do not overlap, special districts do overlap each other as well as other governments. The work of Berry (2009) shows that jurisdictional overlap leads to higher tax rates among governments that share a common tax pool. This is primarily because individual jurisdictions will cater to special-interest constituencies while the costs are covered by the entire tax base. Vertical fragmentation also impacts what areas governments focus spending. In central cities more resources are allocated to safety and health compared to suburban municipalities. School districts represent a type of vertical fragmentation that may increase levels of segregation within a metro area as residents sort by race and wealth along school district boundaries. While horizontal fragmentation focused on the proliferation of governments across space and vertical fragmentation occurs when special districts overlap other jurisdictions, internal fragmentation involves the fragmentation of political power within the central city.

Hypotheses. Vertical fragmentation is expected to have a positive relationship with own-source revenue. As the levels of jurisdictional overlap increase across the metropolitan area, the level of tax burden borne by city residents will also increase.

Internal Fragmentation

A common charge laid against political fragmentation is that too much of it prevents crafting solutions to the problems that are notorious for crossing jurisdictions

(pollution, traffic congestion, water runoff) because there are too many decision-makers at the table. As central cities compete with their surrounding suburbs for residential and economic investment, they may find their own government structure presents another obstacle, particularly in regards to the number of elected officials. Internal fragmentation refers to this division of political power within a governing unit. Public officials are asked to balance the need to cooperate with officials from competing municipalities to craft regional policies and the need to focus on the constituents within their own jurisdiction. I posit that central cities where there is greater division of government among elected officials will have a harder time forming cooperative agreements and formal arrangements with other governing units across their region.

City planners and mayors may focus on economic investment, downtown redevelopment and working with other elected officials within the region, but for locally elected officials such as council members or aldermen elected from districts, the primary focus is on the neighborhood and its constituents. This inevitably can lead to conflict when making budgets, voting on tax policy, or education issues, because the various stake-holders have differing goals. Suburban cities often have newer, more streamlined government and so may have less internal politicking or at least an easier time moving legislation forward. Kantor's (2002) appraisal of New York City post 9/11 views the politically fragmented landscape of the city as a detriment to the city's recovery. Part of the problem is budgetary, but the key impediment is the governing structure and gridlock on key issues (budget, education, and finance) between the city council and mayor (Kantor 2002, 122). Cities with more elected officials represent a conundrum of too many cooks in the kitchen and the policies that emerge from their efforts may be too bland to

be effective. Taken together, elected official such as those on a school board, city council or board of aldermen may find that issues affecting their constituent base and protecting their political turf are more pressing and act as self-seeking profit maximizers.

The levels of internal fragmentation may also affect the maneuverability of the city because each official acts as a gatekeeper for projects and developments within his or her jurisdiction. Public officials may find that issues affecting their constituent base demand their attention more than issues pertinent to constituents outside of their voting district or even their city. There is a tendency to have a singular focus on matters that impact 'the folks back home' and to leave issues that impact the greater good to the mayor and planning commissions. Zhang's (2011) study of how political representation affects preservation and economic development efforts within Chicago demonstrates this phenomenon. When development was supported by local aldermen the process for preservation initiatives moved forward, but when aldermen were not on board, such as when development cut through ward boundaries, the initiative went nowhere (Zhang 2011, 535). Efforts by community-based organizations for development or preservation may reasonably be easier in cities that are less internally fragmented simply because there are fewer actors with agenda setting or veto power.

The work of Feiock (2004, 2010) clearly lays out some of the hurdles facing elected officials when it comes to regional collaboration. Feiock's depiction of elected officials as risk averse, considering decisions in the short-term, able to veto policy by withholding information or consent, and resistant to giving up authority represent substantial barriers to solving regional problems (2010). Inter-government agreements are potentially more difficult to craft in urban areas where the number of elected officials

who are necessary to share information and take political risk are higher relative to others. However, Feiock consistently argues that collaboration is not only possible in light of these obstacles, but occurs in cases where there is sufficient incentives. When cooperating with other local governments for federal grants, officials will use collective action to work together (2004). This willingness of public officials to work together is present in Lindstrom's study of the Chicago area mayor's caucus. The Mayor's Caucus was formed to bring together mayors from across the Chicago region to collaborate on mutual concerns. Lindstrom details the group's struggle to restructure and refinance the public transportation systems into one, centralized system and he demonstrates how politically difficult it is to enact a policy that an elected official perceives to be harmful to his community (2010). The difficulty is not necessarily assuaged even when the policy would clearly benefit the greater good of the region.

Rubin's (1992) case study analysis of budget reform in central cities finds a trend between adopting reform and a reformed governing style. This fits within the internal fragmentation framework that stipulates that the division of political power among elected officials impacts the city's ability and willingness to deal with problems. Cities that have adopted fewer progressive reforms are hallmarked by the persistent presence of patronage, politics playing an important part in policy-making, and less accountability and transparency in administration processes and documentation. Less reformed cities are slower to adopt budget reforms, to innovate, and to alter control of department operations (Rubin 1992). Central cities who have a more reformed style of government, such as city-manager, typically have more at-large elected officials than less reformed cities which could reduce turf protection and encourage regional cooperation.

There is also some literature on the impact politically fragmented systems have on levels of corruption. Wilson (1966) makes a strong case that at least at the state level, the fragmented American system creates an environment that allows individuals to use political means for their own benefit. This is due in part to less visibility of public officials - particularly in special purpose districts. Meier and Holbrook (1992) argue that corruption has historical and cultural roots in urban America because of political machines and a culture among politicians that valued favors, loyalty and personal gain over efficiency. The work of Litt (1963) finds a link between cynical views about government and political participation. Individuals are less likely to participate if they feel that elected officials are corrupt and Litt found that this effect varied by location. His comparison of Boston, suburban Boston, and communities in Oregon show that proximity to a central city is associated with increased political cynicism towards local politics and politicians (Litt 1963, 318). Density of elected officials is not only an issue for central cities but for the greater urban area as well.

While internal fragmentation is primarily a central city phenomenon, theoretically elected officials could impact political participation and growth in suburban areas as well. The conventional wisdom about elected officials in suburban governments is that since these governments tend to be smaller in comparison to the central city and typically represent more reformed government, they are more likely to have residents who know who their elected officials are and be more in-tune with local issues. However, Lyons and Lowery (1989) find that citizens in internally fragmented metropolitan areas do not feel a closer connection to their elected officials, at least when compared to residents of consolidated government. Nelson and Foster (1999) actually find that the

density of elected officials at the special-district level has a negative effect on per capita income growth. This implies that greater concentrations of elected officials cost more to sustain than in areas with fewer elected positions.

<u>Summary.</u> A common approach to cure a metro area of the ills of too much political fragmentation is to consolidate government and reduce the number of elected officials. However resistance to regional government and governance does not only come from individual voters who do not want to see their municipality absorbed into a larger form of government, but also from elected officials who risk political impotence and do not want to lose their jobs and livelihood. The concentration of elected officials may have a negative impact on central cities as they compete with their surrounding governments for residents and resources because elected officials may resist new developments or participation in collective action if they perceive such things as being harmful to their re-election. Higher numbers of elected officials are also associated with higher residential political cynicism. The density of elected officials in older central cities may be resistant to political reforms, less likely to adopt budget reforms, slower to innovate and alter control of department operations. Ultimately high levels of internal fragmentation may be harmful for cities because they are unable to craft solutions to region-wide problems and substantial policy innovation may be watered down or take decades to become politically palatable to elected leaders.

<u>Hypotheses</u>. Internal fragmentation is expected to have an overall negative effect on city outcomes. Increases in the number of elected officials will likely increase the tax burden and increase levels of segregation.

Summary

The continued growth of metropolitan areas, while meeting consumers' demands, comes at a cost. Each individual unit of government tends to be inward looking and does not consider its actions and policies within the broader context of the metro area. There tends to be not just competition between city and suburb but each municipality competes with all those surrounding it for residents, businesses, and revenues. This lends itself to a kind of hostile fiefdom mentality. While competition among municipalities is lauded for promoting practices that ideally would be efficient and cost effective, in reality it produces an environment where city officials are able to exercise restrictive zoning to keep out multi-family housing and less desirable businesses. Because residents are loathe to raise their own taxes, it is commonplace for service provision to be controlled by special district governments. Special districts are more likely to be run by officials beholden to special interests, which means there is less accountability and transparency.

When it comes to the central city, the impact of political fragmentation across the metropolitan area is often overlooked. This is an area rich in potential research that can be a great benefit to regions as a whole. Many studies consider only the dynamics occurring within the suburbs or only within the central city but I argue that understanding the relationship of cities within their regions is critically important. Regions, at least by Census Bureau definitions, exist as functional wholes or in some cases dysfunctional units, and by not studying cities and suburbs in context to each other means that phenomena occurring at a system level will be systematically missed. Pivotal to the study of the functionality of a metropolitan area is an understanding of the context of jurisdictional development within the region. The crafting of research studies, policy recommendations and public initiatives that address issues of crime, education, political

participation, public health disparities and poverty will be strengthened by also considering the political explanation of the living and economic conditions within the region. Political fragmentation potentially plays a causal role in this political and policy explanation.

Chapter 4 defines and explains the role of horizontal, vertical and internal political fragmentation on central city outcomes. The focus of the chapter is findings which help to understand the outcomes associated with varying levels of political fragmentation, particularly how it affects disparities in publicly provided services, tax burden and racial segregation. Chapter 5 describes the way in which the types of fragmentation are operationalized and measured. Utilizing data from the 100 largest cities in 1950 and their metropolitan areas, measures for fragmentation and city outcome are discussed.

Notes: Chapter 3

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[1] Bishop's "Big Sort" hypothesis has come under scrutiny since its debut in 2008. Abrams and Fiorina (2012) find very weak evidence that geographic political sorting drive Americans into culturally homogenous communities. They agree that sorting occurs in the U.S. but contend that political party association and polarization are unrelated.

Chapter 4

Measuring Political Fragmentation and Central City Outcomes

In every metropolitan area in the U.S. there exists political fragmentation of three types, horizontal, vertical and internal. The prevalence of fragmentation at each level varies by region and through time. The question considered here is whether the changes over time and the different amounts of fragmentation impact central city outcomes? Political fragmentation has been accused of aiding urban decline (Lowi 1979; Dreier, Mollenkopf & Swanstrom 2004) both of the central city (Teaford 1979) and the suburbs, (Orfield 2002; Peterson 1985), costs residents more as governing arrangements become more complex (Berry 2009), and increasing racial isolation and disparity (Gordon 2008; Kasarda 1985; Wilson 1985) as the population sorts along racial and economic lines. Conventional wisdom suggests that cities like St. Louis, Missouri and Pittsburgh, Pennsylvania struggle more than cities such as Phoenix, Arizona and Houston, Texas because they have more political fragmentation *ceteris paribus*. This chapter describes the levels of fragmentation as well as city outcomes for growth and decline for a sample of cities between 1950 and 2000.

The empirical claim that I test in this study is that political fragmentation at any level (horizontal, vertical or internal) affects a central city's political economy, population or racial disparity. My sample is the 100 largest cities in 1950 by population. The following sections describe the measures used for horizontal, vertical and internal fragmentation and the measures used to assess how well or poorly a city is faring. These measures are then quantitatively modeled using panel-study time series to investigate how cities are impacted by political fragmentation at each level, through time. While the

time period of 1950 to 2000 does not represent the beginning and end of urban decline or boom, it was chosen for two reasons. During this time period Rustbelt cities acutely felt the decline of the manufacturing industry, the large in-migration of minority populations, and the out-migration of whites to suburban neighborhoods. Southern and Western cities and their metropolitan areas experienced population booms, with the steady growth of industries built on high-tech, service, and administration. The second reason this time period is chosen was for the general consistency of U.S. Census record keeping; 1950 was the first year the U.S. Census recognized metropolitan areas in a standard way, which is a key component of this analysis. Examining fragmentation over time is critical because the effects are not always immediate and may be missed using cross-sectional data. This study utilizes a panel-study regression analysis which allows for the effects of political fragmentation to be seen though time.

100 Cities and Their Metro Areas

The primary sources of data for this study are taken from the U.S. Census City and County Data books. Measures of population, race, income, education, employment, age, and poverty were collected for each of the 100 cities and their metropolitan area at each census year between 1950 and 2000. The 100 largest cities by population in 1950 were chosen to populate the sample for this study. While there is some arbitrariness to the number of cities, overall they represent a wide assortment of population, size, geography, degree of fragmentation and outcome. The selection of cities and the time period also have the advantage of hindsight. It is already known that some cities on this list will diminish in size and stature, but other cities will grow and expand and this variability in outcome enables an analysis of how much fragmentation matters in these outcomes. The

distribution of the cities across the continental U.S. is shown in Figure 4.1. There is a clustering of cities in the Northeast and Midwest, which is expected as 1950 is still at the beginning of the great shifts of population and economic development to the South and West. This sample of cities is also notable for cities that are absent such as San Jose, California which grew significantly over the five decades. Cities such as Peoria, Illinois, which was one of the 100 largest cities in 1950 but declined in population and size over time, do not make the list of the 100 largest cities today. There could be meaningful trends and findings that will go overlooked in this study by the exclusion of some cities. However, for the purposes of answering the research question - what is the impact of political fragmentation on central cities - having a variety of cities that have declined and grown over the time period is the crucial component.

Figure 4.1: Map of the 100 Biggest Cities by Population in 1950. Population was clustered in the Northeast, Midwest and South in 1950. The shifts of economic development and population to the West were still in its beginning.This is evident by the notable absence of cities like San Jose, California which grew significantly over the next five decades.

The cities represent over 20% of the total U.S. residential population in 1950 and 18% in 2000. When the populations of each core city's metro areas are included, it represents 47% in 1950 and 61% of the residential population in 2000. Table 4.1 show a breakdown of the population change and rank, the number of local governments and the city's proportion of the metro area population as of 2000 for the top 10 cities in 1950. What this table conveys is a glimpse of the degree of change these cities have experienced. New York City maintained its number 1 ranking over the time period whereas St. Louis slipped from number 8 to 49th. Looking at the rank of the top ten cities in 1950 along with the total number governments (counties, municipalities, townships, school districts, and other special districts) and comparing to their rank and number of governments in 2000 hints at the complex relationship fragmentation has on central cities. Cities surrounded by higher numbers of governments are among the highest and lowest ranked cities by population.

Table 4.2: Top 10 Cities in 1950 Compared with 2000 and the Total Number of Governments in each Metropolitan Area. Looking at the rank of the top ten cities in 1950 along with the total number governments (counties, municipalities, townships, school districts, and other special districts) and comparing to their rank and number of governments in 2000 hints at the complex relationship fragmentation has on central cities. Cities surrounded by higher numbers of governments are among the highest and lowest ranked cities by population. Source: U.S. Census Bureau and U.S. Census of Government.

Top 10 cities in 1950	2000 population MAs	Total # local govs 1950	Rank 2000	Total # local govs 2000	% of central-city metro area population 2000
1 New York City	7,608,070	1,760	1	2,225	37.8
2 Chicago City	9,157,540	1,553	3	1,851	31.6
3 Philadelphia City	6,188,463	1,133	5	950	24.5
4 Los Angeles City	16,373,645	481	2	713	22.6
5 Detroit City	5,456,428	394	10	529	17.4
6 Baltimore City	7,608,070*	23	17*	262*	8.6*
7 Cleveland City	2,945,831	227	33	463	16.2
8 St. Louis City	2,603,607	690	49	979	13.4
9 Washington DC	7,608,070	141	21	262	8.6
10 Boston City	5,819,100	289	20	952	10.1

*In 1990 the U.S. Census placed Baltimore and Washington D.C. within the same metropolitan region the numbers for 2000 MAs represents both cities.

While the cities remain constant through time, the metropolitan areas may change every census year. The U.S. Census has developed several definitions of a metropolitan area over the decades. In 1950 when the concept of a metropolitan area was first used by the Census, a region was defined by the Office of Management and Budget as the immediate counties surrounding a city where economic and market activity reached a minimum threshold. Each decade, as suburban communities grew outward definitions of metropolitan areas were expanded. By the 2000 Census the classifications for what constituted a metropolitan area had evolved to include more nuanced classifications ranging from the primary metropolitan statistical area, which just contained the urban core, to the larger consolidated metropolitan statistical areas, which include outlying and even rural counties.

For this study I chose to use the OMB's most geographically expansive definition of metropolitan areas for each census year. Starting with the standard metropolitan area definitions in 1950, I expanded the metro area each census year according to the broadest classification used by the Census. This means that over the course of time some central cities have had their metropolitan area swallowed by other regions as they grew. Cities like Dallas and Fort Worth quickly had a combined metropolitan area but others are more dramatic, such as the inclusion of Baltimore in Washington D.C.'s metro area in 1990. The purpose of using this broad definition, rather than maintaining the boundaries established in 1950 was to keep the growth of an area in line with the Census' own measures. This was critical for my counts and measures of political fragmentation. In order to accurately count the numbers, types, and levels of fragmentation at play in a region it was necessary to account for expanding metro areas. To establish a count of

local governments the U.S. Census of Government reports were used to tally up the number of county, municipal, school district, and special district governments in the metropolitan areas over the time span of the study.[1] The count of governments was taken from the Census of Government in 1952, 1962, 1982, 1992 and 2002. Information for total area of a metro area is from the Census and represents the most geographically expansive definition of the metropolitan statistical area as defined by the Office of Management and Budget (OMB). The Census Bureau utilizes several population data, economic activity and commuting patterns to determine if a county is a part of an urban area.

In 1950 when metropolitan areas were first defined by the OMB they comprised the county containing the principal city and a few surrounding counties but as population and economic activity have continued to grow at the periphery, the definition of a metropolitan area has become more expansive. At the 2000 Census a metropolitan area was made up of the largest city of at least 10,000 people or more, termed the principal city, and the surrounding urbanized counties made up of 50,000 people or more, plus outlying counties that have a high degree of economic and social integration.[2] Commuting patterns are used to determine the degree of economic and social integration. The Census created differing levels of metropolitan area to show the primary metropolitan area as well as secondary and outlying areas. The Bureau has also given special designation to the towns and cities in New England. For the purposes of this research, I selected the most geographically expansive Census definition of the metropolitan area associated with each of the 100 cities in my sample. Often this designation was the consolidated or combined statistical area and as a metropolitan area

expanded over time, several of the cities became part of larger, faster growing

metropolitan areas nearby. For the 100 cities included in this study, there are 84 unique

metropolitan areas associated with them in 1950. By the 2000 Census only 55

metropolitan areas are associated with the 100 cities due to their metro area definition

expanding or being consolidated into surrounding urbanized areas.

There are also regional differences between cities and their metro areas in term of

the geography they cover and their population density. Figure 4.2a shows the average

area in square miles for central cities along with the average population density broken

out by region.[3]While the Northeast has retained the highest population densities within its

cities, the levels have been declining over the time period. Western cities are a notable

exception – in this case the average population density began to rise in 1980 and by 2000

is close to its 1950 level. Cities in the South and West have been able to significantly

expand their territories on average when compared to the Midwest, which saw just

moderate growth and the Northeastern cities which have experienced almost no growth in

area. A similar pattern plays out at the metropolitan level. Metro areas in the Midwest,

Northeast and South have declining population densities and expanding geographies,

while the West is growing both in territory and density.

Figure 4.2a: Average Population Density and Area in Square Miles of Central Cities by region, 1950-2000. Across most regions the population pattern is similar, the solid line for population density has declined meaning fewer people per square mile in cities. However the geographic growth in square miles differs by region. In the Northeast the size of cities has remained almost unchanged while the South has seen a large growth of average city size. Source: US Census
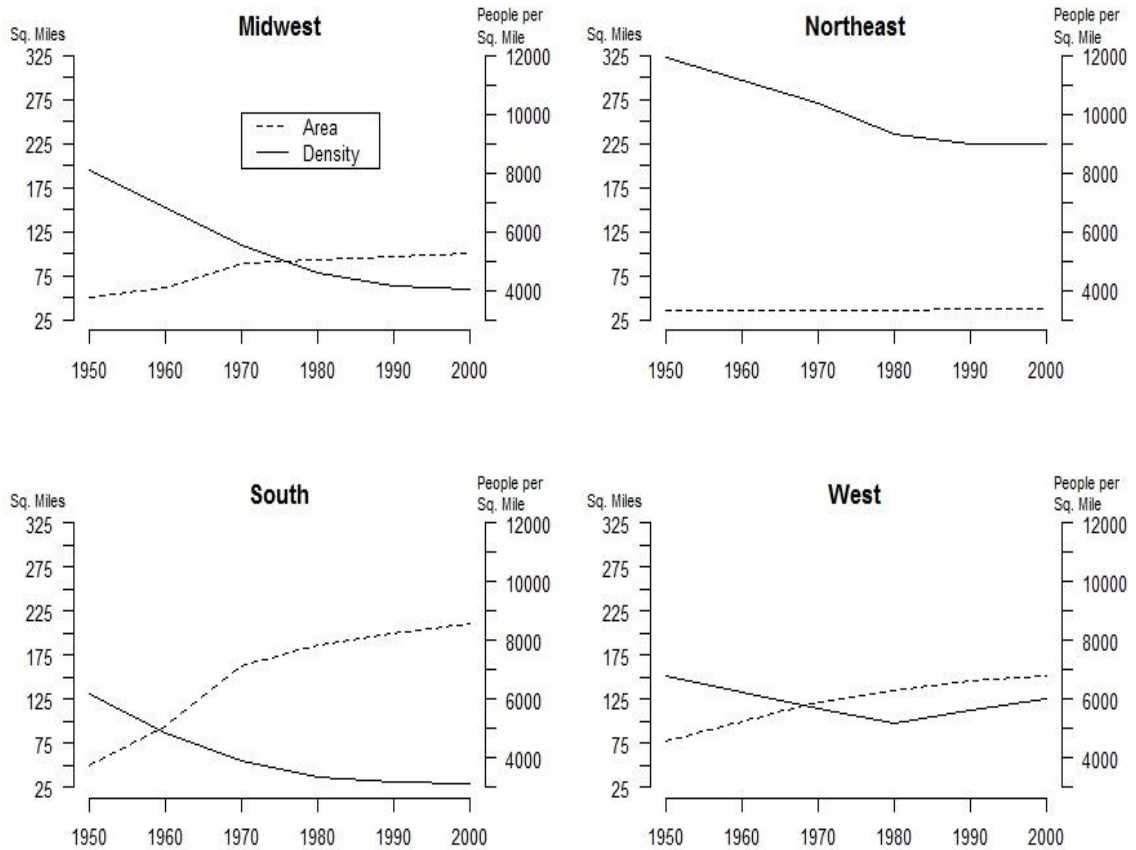
Figure 4.2b: Average Population Density and Area in Square Miles of Metropolitan Areas by region, 1950-2000. Like the cities they surround, metropolitan areas have seen a decline in population density. The growth of the metro areas has been steady but it is important to note that the size of metro areas is dramatically larger than cities. This makes the average growth of western metro areas the more dramatic, going from an average of 3,000 square miles to near 12,000. Source: US Census
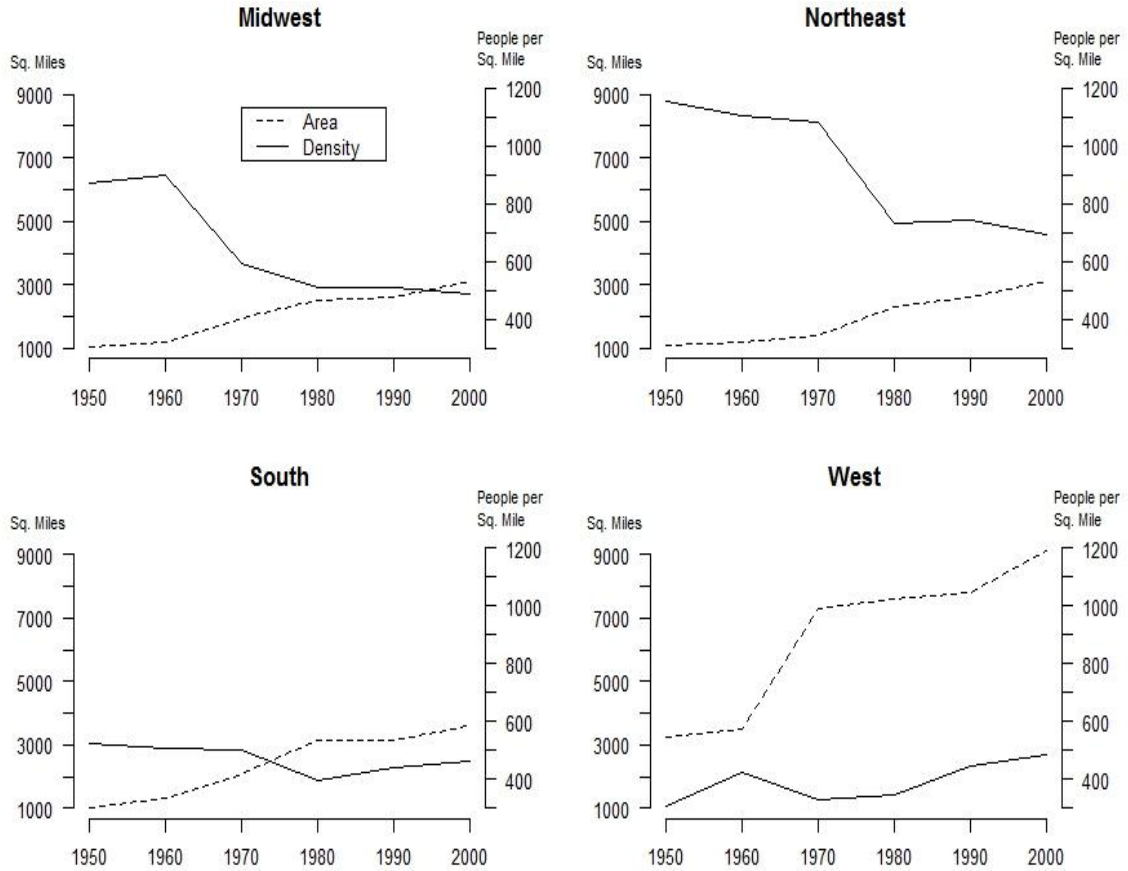
Regional differences in cities and metro areas serve as a common mechanism for comparing cities to each other. Southern cities have a common culture, climate and political development and this is distinct from the Midwest, Western and Northeastern cities. The same can be said for each region and examining fragmentation and city outcomes within these distinctions help to reveal patterns that would be missed if the study only took a national level perspective. Regional differences have also served as a key explanation for why certain cities have fared better over time. For example the work of Rusk (1995) discusses the importance of region. Typical of this narrative is that Northern and Midwestern cities have struggled because they have higher levels of fragmentation compared to their counterparts in the West and South (Rusk 1995). Regional breakouts of the fragmentation measures as well as the central city outcome measures will help illuminate whether similar patterns emerge in this data.

Political Fragmentation

The overall pattern of government growth in metropolitan areas has been positive. While in the 1970s the average number of governments in a metro area declined due to school district consolidation and the leveling off of municipal growth, since then there has been a steady increase. Figure 4.3 shows two plots, the average number of governments in the metropolitan areas associated with the cities included in the study and a break out of government by type over time. County and municipal inclusion in metropolitan areas has been small, if not stagnant when compared to changes in school districts and special districts. After a period of school district consolidation during the 1970s, the addition of school districts in metropolitan areas has leveled off. The bulk of new government growth in recent decades is driven by special districts. The average

number of governments reflects this larger pattern, a steady rise in the number of

governments, followed by a decline during the 1970s and then the uptick begins again.

Figure 4.3: Mean number of governing units in Metropolitan Areas, 1950-2000. The
average number of governments in a metropolitan area rose sharply through 1970 and
then declined, primarily due to school district consolidation and the leveling off of
municipal government creation. The continued rise in governments is driven by the
growth of special districts. Source: US Census of Government.
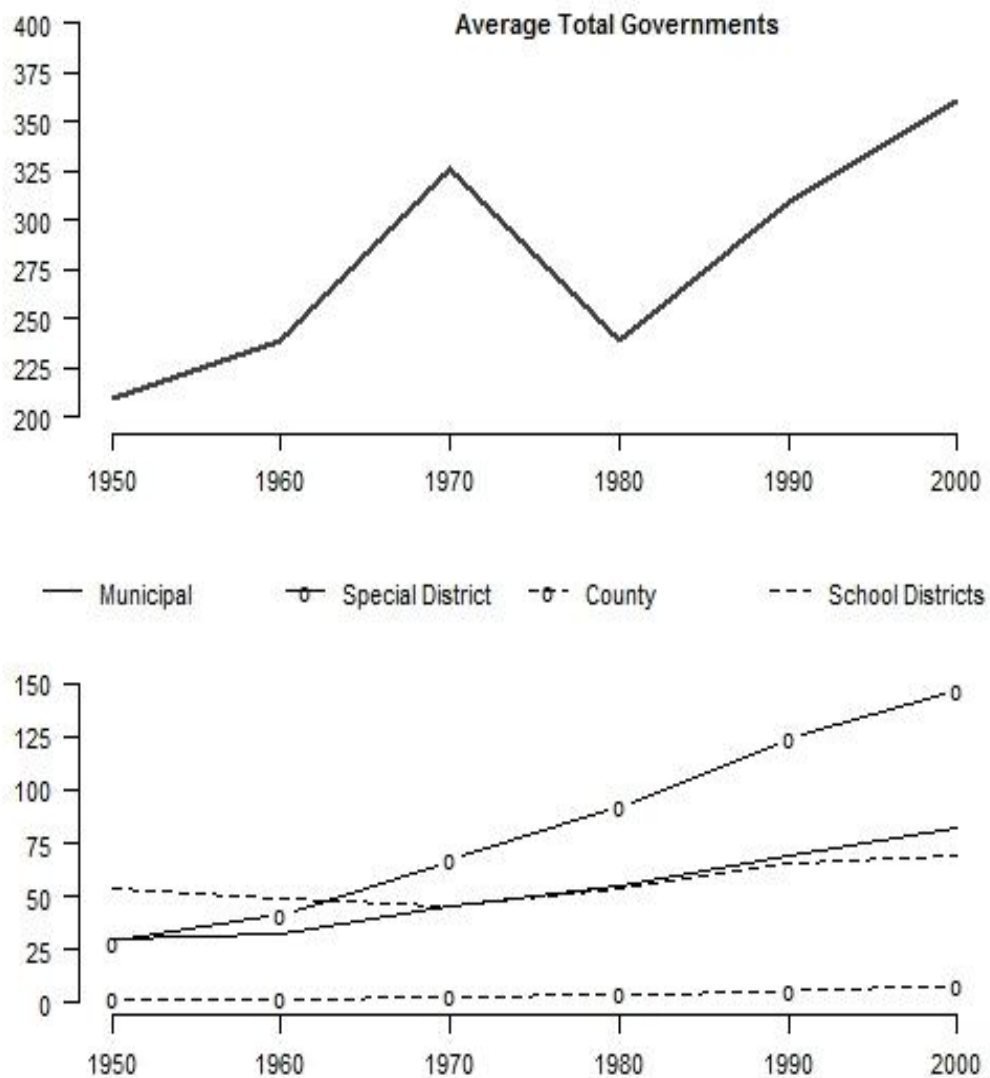
Total Fragmentation. As a general concept fragmentation is governing units in geographic space and this can be measured simply as the total number of governments in a region. A simple count of governments, while informative, only scratches the surface of fragmentation's prevalence in metropolitan areas. The literature on political fragmentation represents a kind of taster's choice of definitions and measurement calculations and not surprisingly the variation in measurement has yielded disparities in findings. In a recent *Urban Affairs Review* article, Hendrick, Jimenez, and Lal (2011) identify twenty unique measurements of fragmentation. As discussed in Chapter 3, the levels of fragmentation across a metropolitan area's geography represents the division of political power with governments that are territorially exclusive (horizontal fragmentation), governments that overlap jurisdictions (vertical fragmentation) and also internal division of power among elected officials. This complexity of governing arrangements is what contributes to the variety of measures. For this study eight measures of political fragmentation are utilized for their conceptual relevancy to horizontal, vertical and internal fragmentation and are further discussed along with descriptions of each measurement and summary statistics. Table 4.2 gives the definition of each fragmentation measure and what level of fragmentation it conceptualizes.

Table 4.2: Measures of Political Fragmentation by Type in Metropolitan Areas and Central Cities.

Type		Measure
Total	1	Total number of local governments per capita (10,000) within the metropolitan area (political fragmentation)
	2	Total number of local governments per square mile within the metropolitan area (spatial fragmentation)
Horizontal	3	Ratio of municipal governments per capita (10,000)
	4	Proportion of municipal governments to total governments in metropolitan area
	5	Percentage of metropolitan area population in central city
	6	Proportion of school districts to total governments in metropolitan area
Vertical	7	Ratio of jurisdictional overlap to municipalities and non-territorial overlapping towns
Internal	8	Total number of elected officials per capita (10,000) in the central city

The first two measures of fragmentation considered represent traditional or common variables in the literature. Spatial fragmentation and political fragmentation represent the counts of governments per square mile and per capita. I define spatial fragmentation as the number of local governments per square mile which include counties, municipalities, townships, schools and other special districts within each metropolitan area. Metro areas with greater density of governments, or more governments per square mile, are considered more fragmented.

Political fragmentation is measured as the total number of governments for every 10,000 individuals. While spatial fragmentation gives a sense of the geographic density of governments, political fragmentation is a general picture of the density of governments to population. Political fragmentation gives a bird's eye view of how prolific governing units are in any metro area, but does not convey much about the variation and type of governing arrangements within a metro area. Figure 4.4 shows the average political and spatial fragmentation over the time period. Both political and spatial fragmentation experienced a sharp drop between 1950 and 1960 and then in the case of political, began growing. Mean levels of spatial fragmentation continued to decline but begin rising steadily in 1980. Though the levels of spatial and political fragmentation never reach their averages in 1950 again, their rates of growth suggest that the typical metropolitan area is gradually growing in its density of government.

Figure 4.4: Average Political Fragmentation (number of governments per 10,000) and Spatial Fragmentation (number of governments per square mile) in Metropolitan Areas, 1950-2000. Both political and spatial fragmentation experienced a sharp drop between 1950 and 1960 and then in the case of political, began growing. Mean levels of spatial fragmentation continued to decline but starting rising steadily in 1980. Though the levels of spatial and political fragmentation never reach their averages in 1950 again, their rates of growth suggest that the typical metropolitan area is gradually growing in its density of government. Source: US Census of Government
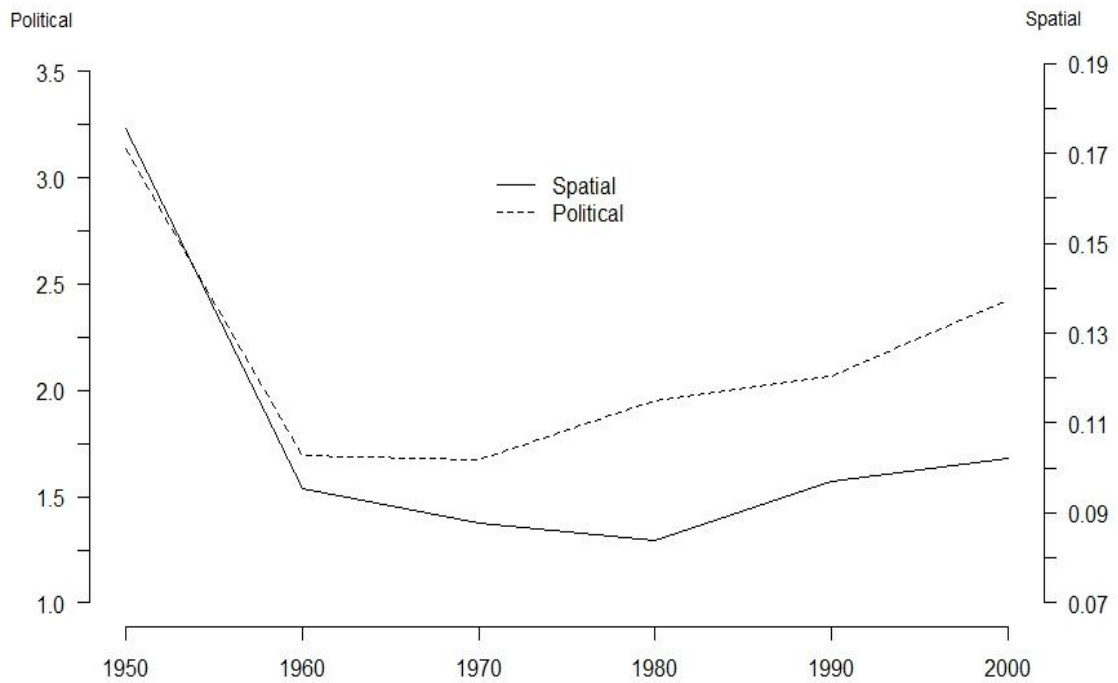
The patterns of spatial and political fragmentation are more nuanced when considered by region. Figure 4.5 shows a breakdown of these measures for the Midwest, Northeast, South and Western metro areas. Here it is evident that the concentration of governments is quite different by region, averages of political and spatial fragmentation reflect a similar pattern as shown in Figure 4.4 sharp declines in the 1950s and then, with the exception of Western metros, an increase through 2000. Western metropolitan areas continued to experience declining political fragmentation whereas Midwest and Southern cities saw notable increases in average levels. This indicates that while Western urban areas maintain low concentrations of government, other areas have actually experienced increases in the number of governing units per capita and square mile. These general measures offer a succinct picture showing that for the typical metropolitan area there was a decline in governments in the early decades and this reflects shifts in population and land area. As metro areas and populations expand the density of governments goes down but then grows over time. These measures give a general picture of how densely fragmented a metropolitan area is, but no indication in terms of the variation in the levels of fragmentation. Looking at measures of horizontal, vertical and internal fragmentation will help explain some of the variation in fragmentation and why some urban areas had continued growth in government while others did not.

Figure 4.5: Average Political Fragmentation (number of governments per 10,000) and Spatial Fragmentation (number of governments per square mile) in Metropolitan Areas by Region, 1950-2000. Regional averages of political and spatial fragmentation reflect a similar pattern, sharp declines in the 1950s and then, with the exception of Western metros, an increase. Western metros continued to experience declining political fragmentation whereas Midwest and Southern cities saw notable increases in average levels. Source: US Census of Government
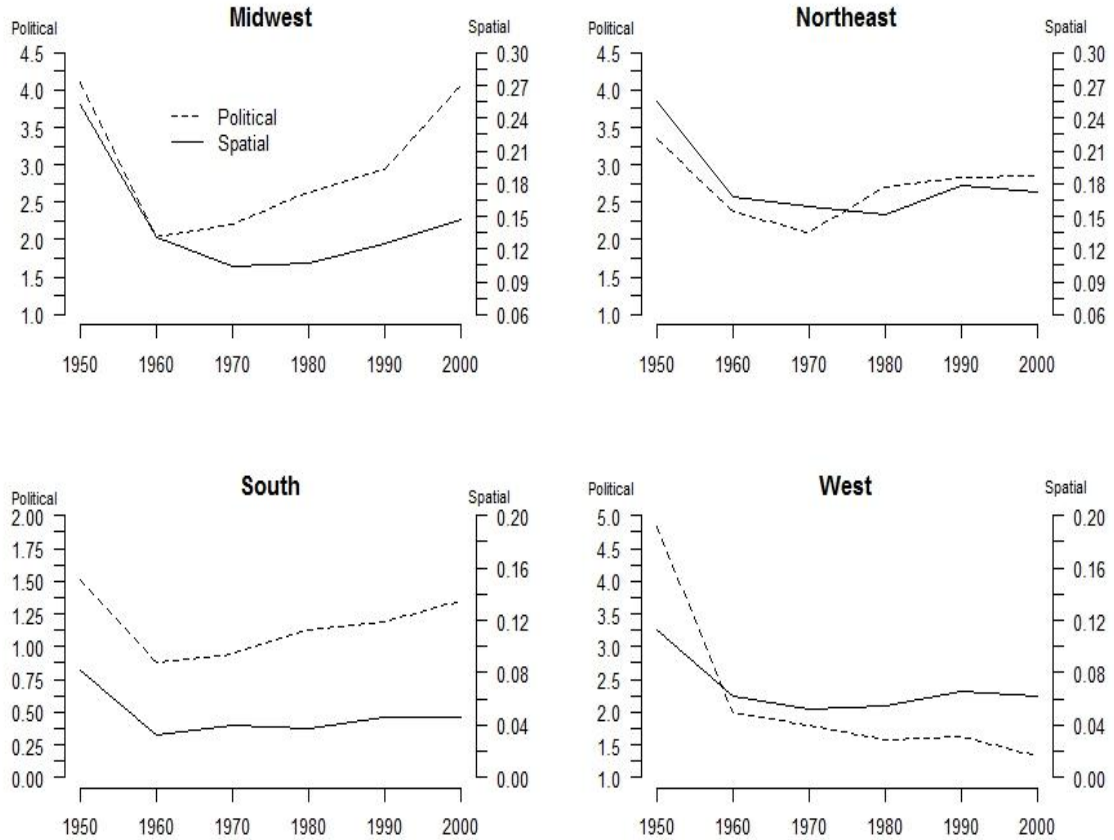
Horizontal Fragmentation. After measures of spatial and general political

fragmentation, horizontal fragmentation measures are fairly common in the literature.

The bulk of the fragmentation measures used in this analysis represent aspects of

horizontal fragmentation. Horizontal fragmentation is non-overlapping, coterminous

governments of the same type, across the metropolitan area. The most common indicator

of horizontal fragmentation is municipal governments which do not overlap and

geographically cover the entire metro area. For this study I included the proportion of

municipalities of all governments in the metro area as an indication of general purpose

government fragmentation. Also included is the proportion of school districts of total

governments in a metropolitan area. The percentage of the metropolitan area population

that resides in the principal city is another variable included in order to account for

whether or not the population is concentrated outside of the central city. The last measure

of horizontal fragmentation used is the number of municipalities per capita (10,000),

however, this measure is highly correlated (0.68) with political fragmentation (total

governments per capita) and so the two variables are indexed to create a measure of

governing density.

Higher index values of density of governments indicate greater amounts of

government. The data is skewed right with a mean of -0.001 and a median value of -0.2

with a standard deviation of 0.91. This is not altogether surprising as the amount of

governments varies widely by metropolitan area and region. This is seen in Figure 4.6

where the average density of government ranges over time from -1.2 to a high of 6.5.

Overall the average dropped until 1970 and then has grown steadily and this same pattern

can be seen regionally with the exception of Western metro areas, which saw growth in

government density between 1960 and 1980 and experienced a decline through 2000.

Figure 4.6: Average Density of Governments and Average by Region. Density of
Government indexes the number of governments per capita (10,000) and the number of
municipalities per capita (10,000). The average over time is -0.001 and ranges from -1.23
to 6.48. Regionally the average for the Midwest is 0.6, the Northeast is -0.1, the South
and the West are both -0.3. Overall the average has dropped until 1970 and then grown
steadily and this same pattern can be seen regionally with the exception of Western metro
areas who after seeing a growth in government density between 1960 and 1980
experienced a decline through 2000.
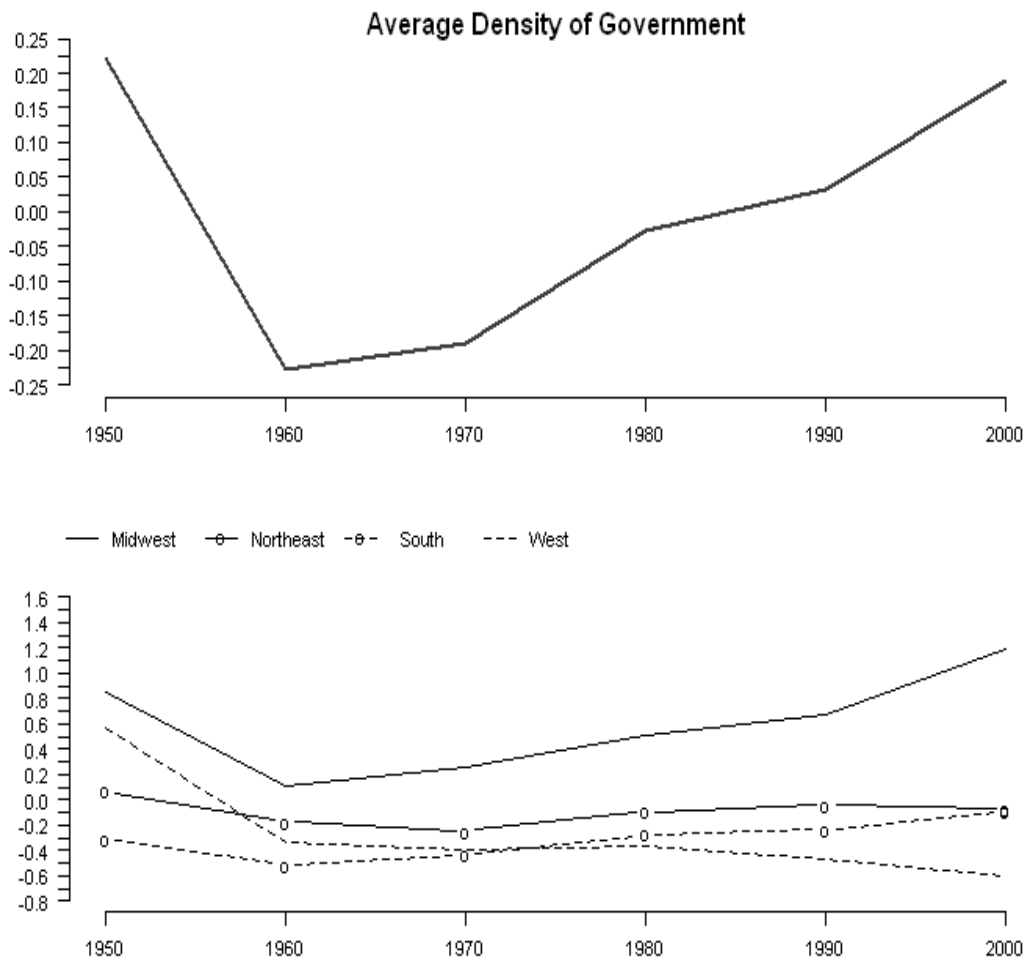
Overall the average percent of the metropolitan area's population contained in the central city is 36% with a standard deviation of 24% and ranges from low of 0.4% to a high of 90%. Over time the average has been declining from a high just over 50% to close to 25% in 2000. The rate of decline appears to be slowing after 1980. Regionally, the South still contains the highest percentage of metro area population in its principal cities with an average of 49%, followed by the Midwest (39%), the West (30%) and then the Northeast (22%). The amount of a metropolitan area residing in the central city gives an indication of how competitive the core city is as a residential choice and so higher percentages of the population residing in the central city is to the benefit of the city. For the metropolitan areas included in this study, Southern cities have been more likely to retain to attract residents relative to cities in the Northeast.

Figure 4.7: Average Percent of a Metropolitan Area's Population in the Central City by Region. Overall the average percent of the metropolitan area's population contained in the central city is 36%. Over time the average has been declining from a high just over 50% to close to 25% in 2000. The rate of decline appears to be slowing after 1980. Regionally, the South still contains the highest percentage of metro area population in its principle cities with an average of 49%, followed by the Midwest (39%), the West (30%) and then the Northeast (22%).
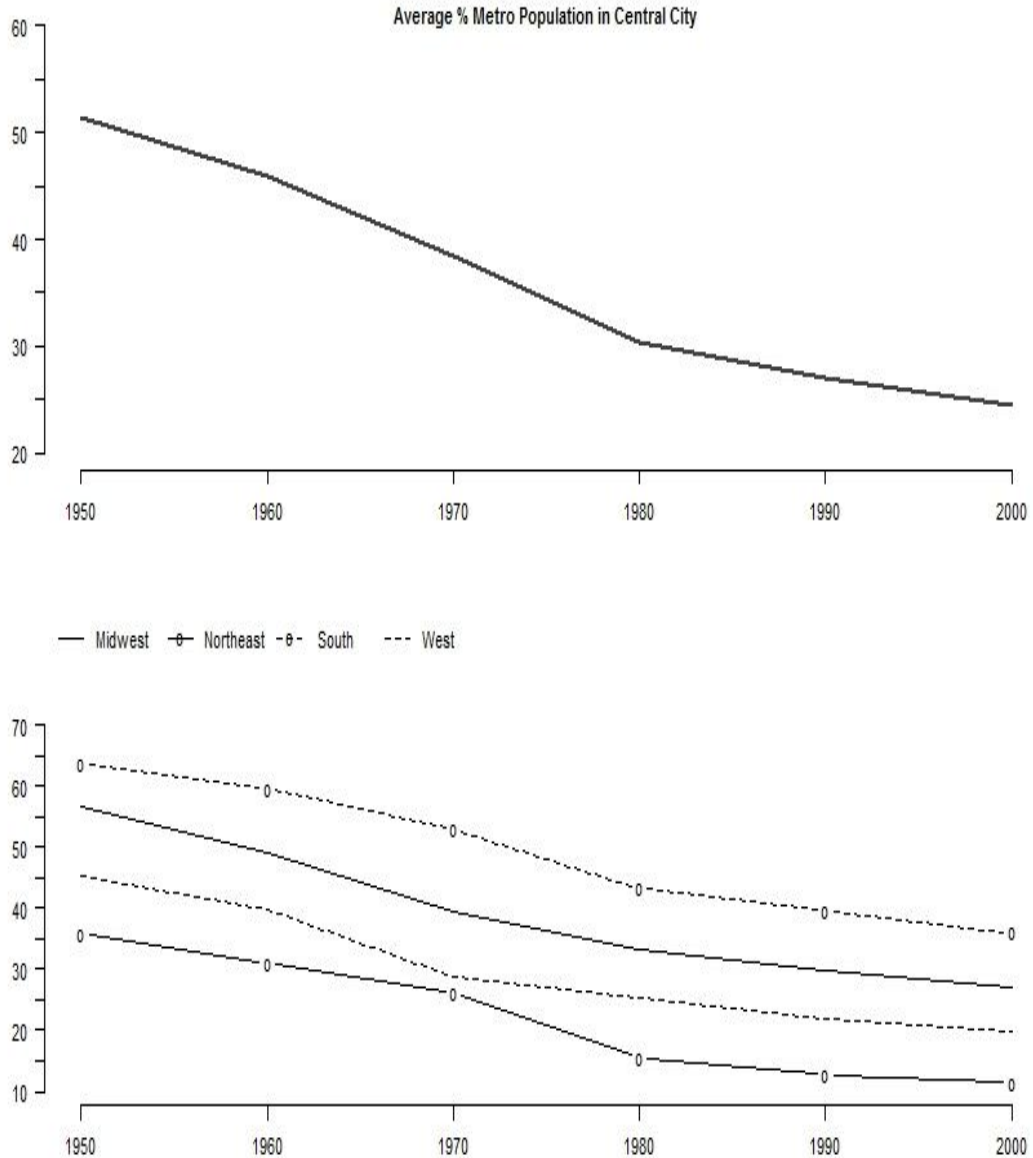
Considering the proportion of municipal governments to the total number of governments in a metropolitan is another measure of horizontal fragmentation. Greater municipal choice may support higher levels of sorting along racial and economic lines as higher degrees of municipal fragmentation could create more competition for residents and economic investment. The ratio of municipal governments to total governments in a metro area has a mean of 0.2 with a standard deviation of 0.13 and a range of 0.01 to a high of 0.79. Over time the proportion of municipal governments has held steady with a sharp increase between 1970 and 1980. This is mirrored regionally with the jump being more pronounced in Southern (0.3 average) and Midwestern (0.2) metropolitan areas and more gradual in Northeastern (0.12) and Western (0.13) metros. Southern metropolitan areas represent an interesting case because in general they have higher levels of residents choosing to reside in the core city, but they also have a greater proportion of municipal governments relative to other types of governing units. Higher concentrations of municipal governments relative to other types is thought to be indicative of higher fragmentation and more residents and firms opting for suburban enclaves over the central city.

Figure 4.8: The Average Proportion of Municipalities to Total Governments by Region. The ratio of municipal governments to total governments in a metro area has a mean of 0.2 with a standard deviation of 0.13 and a range of 0.01 to a high of 0.79. Over time the proportion of municipal governments has held steady with a sharp increase between 1970 and 1980. This is mirrored regionally with the jump being more pronounced in Southern (0.3 average) and Midwestern (0.2) metropolitan areas and more gradual in Northeastern (0.12) and Western (0.13) metros.
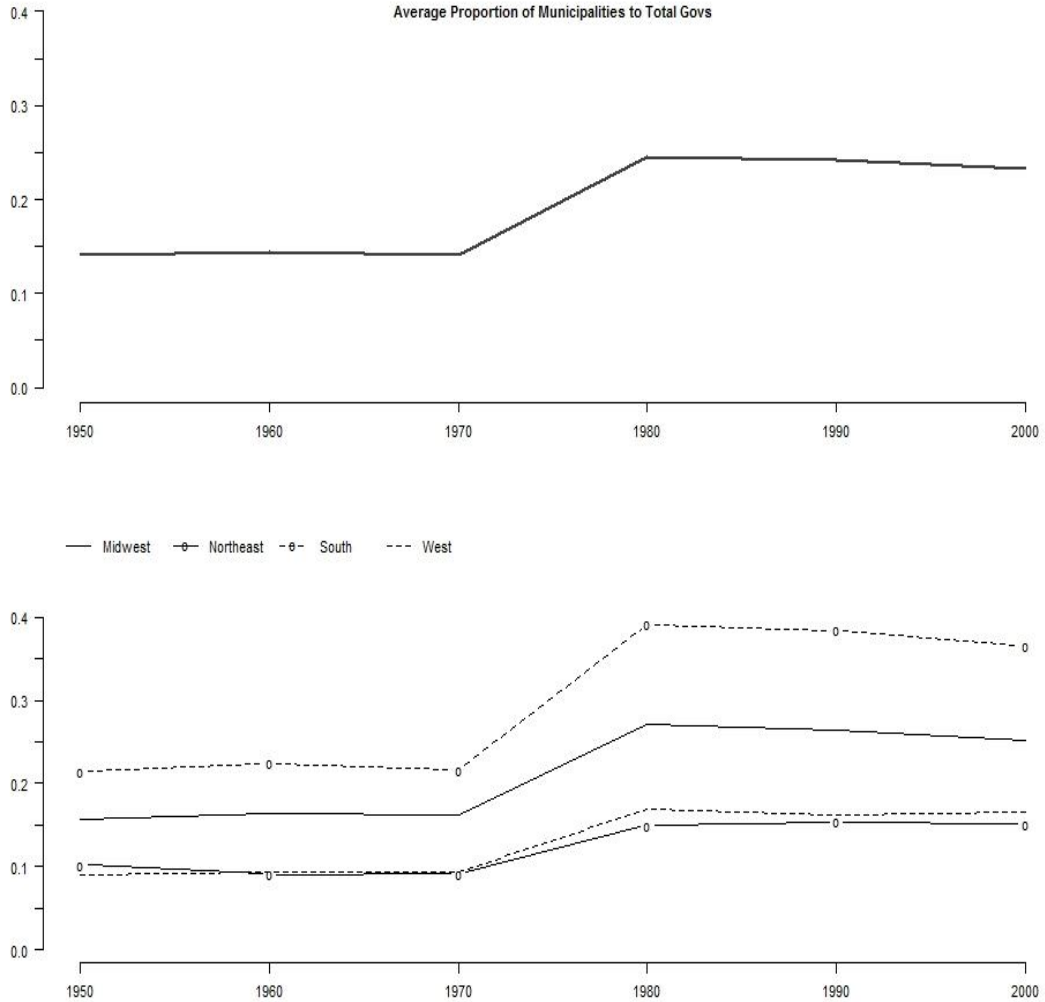
The proportion of school districts to total governments in a metropolitan area is similar to the proportion of municipalities. In this case a type of special district is singled out because school district has a powerful influence on resident choice. There is also some evidence that metropolitan areas with more school districts have greater racial sorting. The average proportion of school districts to total governments is 0.19 with a standard deviation of 0.1 and a minimum of 0.02 and a maximum of 0.64. Between 1970 and 1980 the average has dropped and then risen near its 1950 high of just over 0.2. Since 1980 the average proportion of school districts seems to be declining slightly through 2000. This pattern is echoed regionally with the Northeast (0.24) maintaining a higher proportion of school districts, followed by the West (0.2), Midwest (0.2) and the South (0.16).

Figure 4.9: Average Proportion of School Districts to Total Governments by Region. The average proportion of school districts to total governments is 0.19 with a standard deviation of 0.1, a minimum of 0.02 and a maximum of 0.64. Between 1970 and 1980 the average has dropped and then risen near its 1950 high of just over 0.2. Since 1980 the average proportion of school districts seems to be declining slightly through 2000. This pattern is echoed regionally with the Northeast (0.24) maintaining a higher proportion of school districts, followed by the West (0.2), Midwest (0.2) and the South (0.16).
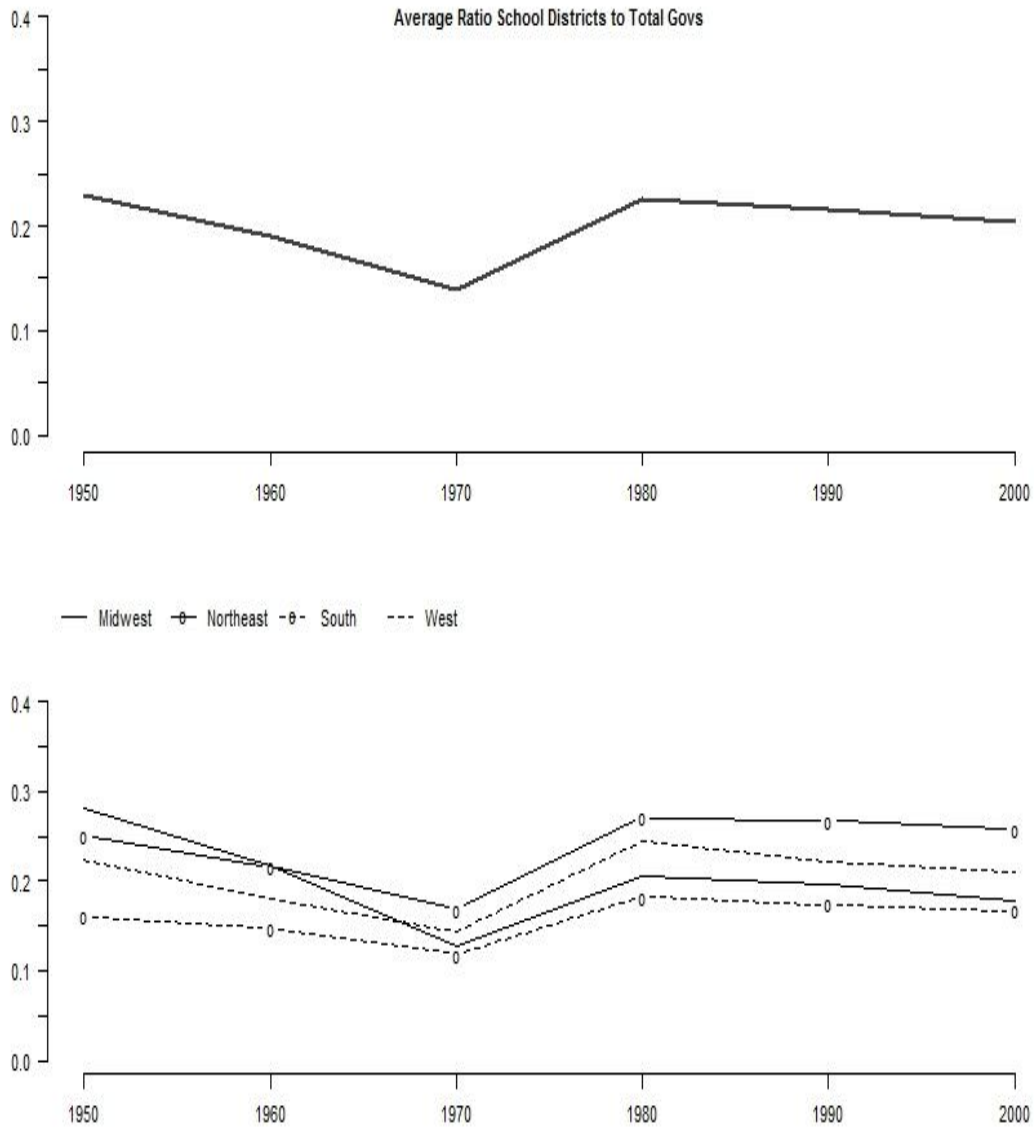
These measures of horizontal fragmentation are selected to distinguish not only the differences in the number of governments across metropolitan areas regionally but also that certain areas of the country have more choice in terms of residential government or school districts. Schools and municipal government represent salient distinctions to individuals when deciding where to live within a metropolitan area. Greater choice in terms of the number of schools and municipalities relative to other governments will also have an impact on the proportion of metropolitan population in the core city. There is a similar pattern regionally between metropolitan areas with higher densities of government and share of metropolitan population. Cities that have lost population share over the time period are also located in regions that have higher levels of horizontal fragmentation.

Summary. Historical trends of horizontal fragmentation are similar across the regions and follow a pattern of decline between 1950 and 1960 and then gradually increase through 2000. The Midwest and Northeast tend to have higher density of governments compared to other regions and this corresponds to their share of metropolitan area population. While the city's share of the metro area population has been decreasing over time, this has been most dramatic in the Northeast. In terms of the proportion of governments that are municipalities, the typical metropolitan area saw a steady uptick between 1970 and 1980 with the South having the highest proportion of governments that are municipal and the Northeast the lowest over time. The proportion of governments that are school districts round out the horizontal fragmentation measures and show a general trend of decline through 1970 but do increase in 1980. The Northeast

has the highest proportion of school districts and the South has the fewest during the time period of the study.

Vertical Fragmentation. Unlike horizontal fragmentation where governing boundaries do not intersect, vertical fragmentation considers the impact of governments that do overlap each other. Berry (2009) argues that where there is more vertical fragmentation, defined here as overlapping boundaries, governments will have higher taxes. Greater levels of taxation are driven by special districts that seek to provide benefits to special-interest constituencies and which are paid for from the common tax base (89). Ideally, to quantify this effect I would use geographic boundaries and jurisdiction specific tax rates and compute the total tax rate wherever governing boundaries overlap. In this study using 100 cities and the governing bodies included in their region represents over 2,000 jurisdictions. Accumulating both the mapping data and taxing information for each government through time is beyond the scope of this dissertation. I follow Berry's prescription and use his measure of overlapping jurisdictions per municipality. This is defined as the number of special districts, territorially overlapping townships and counties over the number of municipalities, which are cities and territorially exclusive towns.[4] This measure uses horizontal fragmentation as the denominator and the numerator reflects the amount of vertical layering in a metropolitan area.

The ratio of overlapping to non-overlapping territories is skewed right with a mean of 4 and a median value of 2, and a standard deviation of 6. Jurisdictional overlap ranges from a low of 0.19 to a high of 94. Figure 4.10 show that the average amount of jurisdictional overlap has been decreasing over time though there was a period of growth

between 1960 and 1970 and again between 1980 and 1990. Across regions the average

amount of overlap has been steady with the West (6.3) at much higher averages than the

Midwest (3.3) and South (2). The pattern in the Northeast (4.5) reflects that of the overall

average with two jumps in growth followed by decline.

Figure 4.10: Average Jurisdictional Overlap (Vertical Fragmentation) Across Metro Areas and by Region, 1950-2000. The average amount of jurisdictional overlap is 3.7. The average has been decreasing over time though there was a period of growth between 1960 and 1970 and again between 1980 and 1990. Across regions the average amount of overlap has been steady with the West (6.3) at much higher averages than the Midwest (3.3) and South (2). The pattern in the Northeast (4.5) reflects that of the overall average with two jumps in growth followed by decline. Source: US Census of Government.
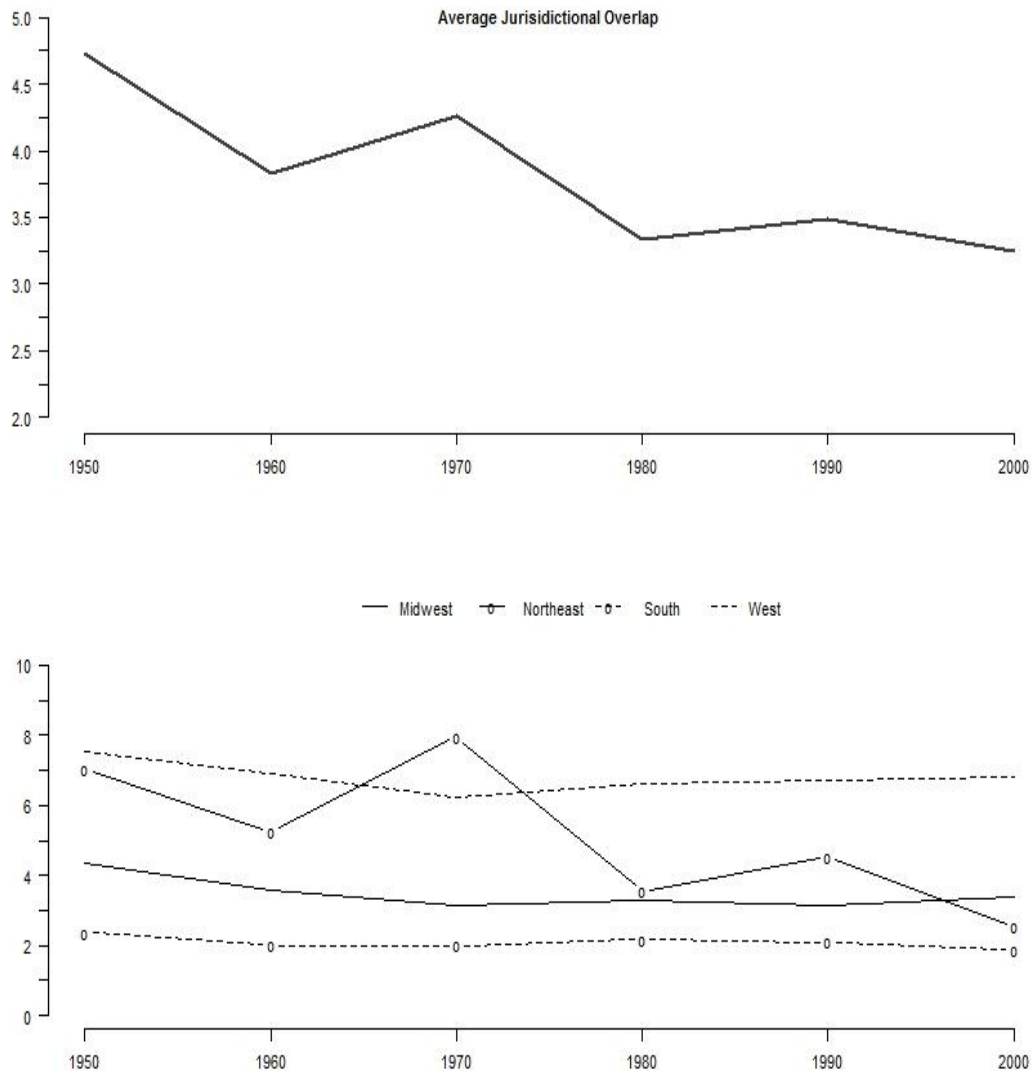
The measure of vertical fragmentation is designed to capture the degree of overlapping jurisdictions in a metropolitan area in relation to the number of municipal governments. For example, in 2000 Sacramento's metropolitan area was home to 317 special district governments and only 21 municipal governments, putting it in the 98th percentile for vertical fragmentation. For the same census year, in the metropolitan area of Baton Rouge there are 36 municipal governments and only 6 special districts putting it in the 5th percentile for vertical fragmentation. This variation in the amount of jurisdictional overlap could have a direct relationship with the tax burden born by the individual resident who ultimately supports special district governments through their taxes.

Summary. Over time vertical fragmentation has been decreasing although there is a noticeable spike in the overlap in the 1970s. Regionally the trend in overlap varies with the South maintaining almost the same amounts across the time period and the West and Midwest maintaining much higher levels. Most of the movement occurs in the Northeast, which has steadily decreased its levels of jurisdictional overlap with the exception of a large jump in 1970.

Internal Fragmentation. Political fragmentation is commonly thought of as just the number of political entities in a geographic area (general purpose governments, school districts, special districts) and to this list I also add the number of elected officials in a central city. A metropolitan area with a multiplicity of governments is generally thought to be inefficient on the one hand but responsive to the populace they serve. In the same way, having a large number of elected officials can be a frustration to the policy process and central planning but citizens may have the benefit of having a public servant

responsive to local issues. At the city level having a small number of elected officials is generally considered a sign of a progressive, streamlined ("reformed") government whereas a city with a large number of elected officials is arguably more cumbersome, because officials will resist any changes or policies that they perceive to threaten their political turf.[5] The number of elected officials in each city represents another layer of political fragmentation and is a proxy for the potential vitality and efficiency of the central city.

Within a metropolitan area there is great variety in the number and types of elected officials that serve residents. Beginning with the executive level, the typical city has a mayor and a legislative body, usually a council that ranges in size, where members are elected at-large or by district and is headed by a president of the chamber. Other common elected offices are those that conduct day to day functions such as a city clerk, treasurer, auditor, or comptroller. The judicial branch of a city usually has several elected offices as well and these range from municipal judges to sheriff. School districts are generally governed by an elected body, for example a Board of Education, and these offices can be elected by district or at-large, range in size, and in some cases the mayor is a member. There can also be special district offices that are filled by popular election such as water/sewerage districts. From city to city the offices that are elected by popular vote or appointed by the mayor with the approval of the legislative body vary. Within the sample of central cities included in this study, cities such as Birmingham, Alabama elect a mayor, a handful of council members and a school board, an average of eight elected officials over the time period. Compare this to Chicago where citizens elect not only a mayor and council, school board, but a city clerk, treasurer, and judges, on average over

fifty-three elected officials. The variation in elected officials begs the question does it make it harder for a city to compete for residents and economic development when there are eight officials or fifty-three?

When measuring elected officials it would be ideal to have the total number of all elected offices (municipal government, city/county officials, special district elected officials, and school boards). This level of historic detail is difficult and cumbersome to gather with accuracy, particularly for those cities in the lower half of the top 100 list that spent the last fifty years in continual decline. The Municipal Year Book published lists of municipal level elected offices for cities with populations 25,000 and greater with consistency between 1950 and 1970. The number of municipal elected officials in 2000 was compiled by searching each city's official website. For many cities the number of municipal elected officials could then be backfilled by comparing the number in 2000 with the number in 1970. For those cities that had a different number of officials in 2000 than in 1970 the average number of elected officials was used for the missing years.

The typical city had an average of 0.6 elected officials for every 10,000 and this remains somewhat unchanged over the time period, with a slight decrease leading to 1970 and then gradually growing through 2000. Figure 4.11 shows the average elected officials per capita as well as a break out by region. Average regional levels of elected officials per capita are highest in the Northeast with an average of 0.81 and the Midwest with an average of 0.54. This is followed by the South which averages 0.43 officials per capita but between 1990 and 2000 the rate of elected officials appears to be growing. The average level in Western cities is 0.4 and this appears to be declining into 2000.

Figure 4.11: Average Ratio of Internal Fragmentation, Elected Officials per Capita (10,000) in Central Cities by Region, 1950-2000. The average (0.56) number of elected officials per capita is somewhat unchanged over time with a slight decrease leading to 1970 and then gradually growing through 2000. Regionally average levels are highest in the Northeast (0.81) and Midwest (0.54) followed by the South (0.43) which between 1990 and 2000 is growing however average levels in the West (0.36) appear to be declining. Source: US Census and Municipal Year Book.
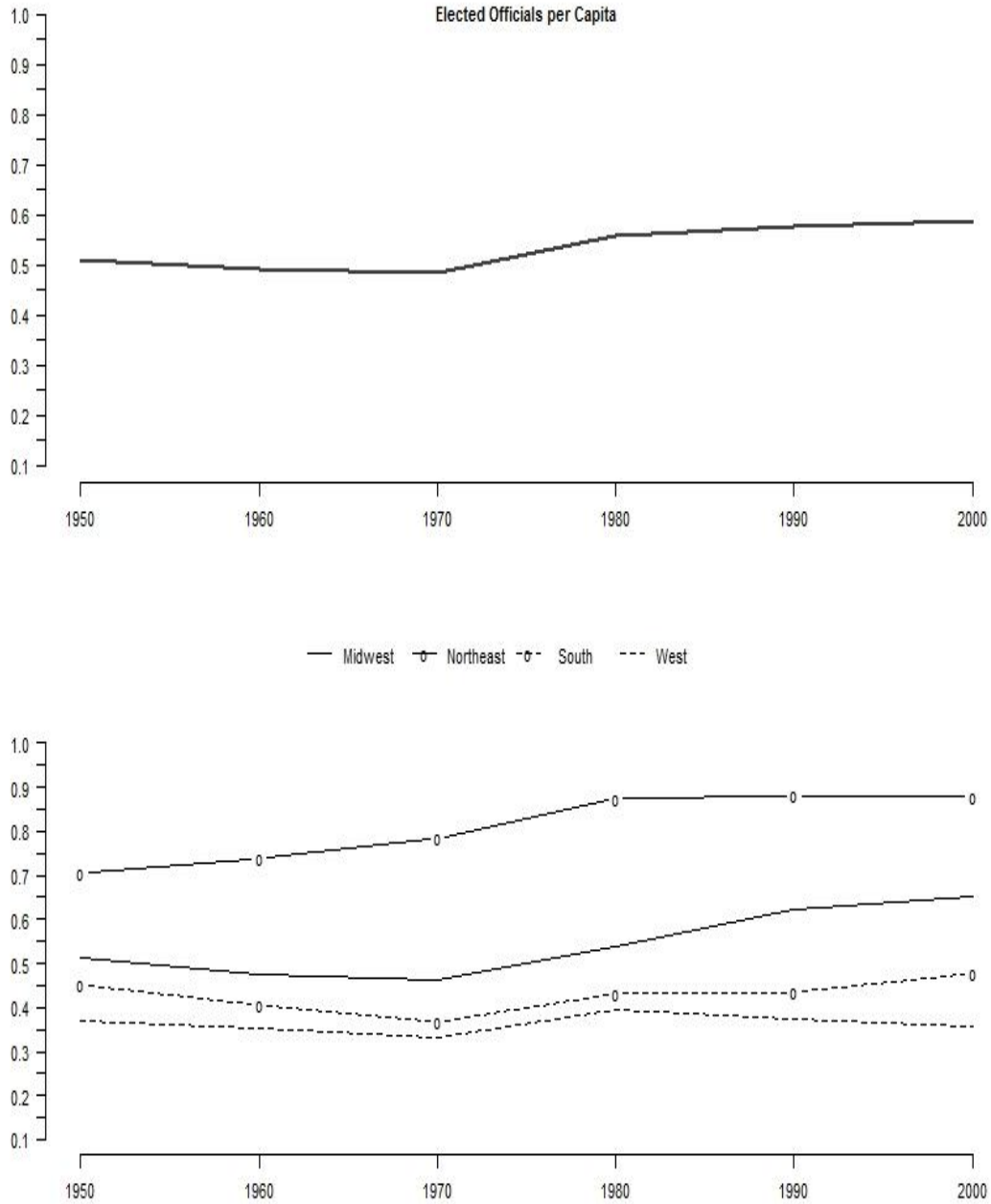
Summary. Internal fragmentation measured as the number of elected officials per capita in central cities represents a potentially understudied component of fragmentation. While the number of elected officials in central cities has not changed dramatically over time, it has been gradually increasing. Regionally, the number of elected officials per capita varies widely with the Northeast having the highest and Western cities the fewest. This pattern of fragmentation is not unexpected given scholarly work that tends to characterize Western cities as more progressive and reformed whereas Northeastern cities may still have carry over from when government was run by political machines. The amount of internal fragmentation also seems to be growing over the time period but part of this growth could be driven by the decline of population in central cities, which may artificially inflate the number of elected officials per capita.

Central City Outcomes

There are three aspects of city well-being against which the measures of fragmentation will be modeled. While there are many ways to measure how well or poorly a city is faring, for the purposes of this study three basic indicators of central city health will serve as dependent variables: the ratio of population change between census years, racial dissimilarity and isolation at the metropolitan level, and fiscal health. Factors of population, racial segregation and fiscal health represent very general but key indicators of urban decline and growth. Cities not well off are often hallmarked by near constant population loss, declining revenues and racial segregation, while cities that are considered more successful have growing population densities, revenues, and declining segregation over time. Each of these outcome measures are discussed and their expected relationship to the cadre of fragmentation measures.

Population Change. Population is one of the most basic indicators of a city's well-being. Population drives national and state standing and ranking among metropolitan areas and for individual cities is a key determinant in funding decisions by the state and federal government. It is also a fundamental component in redistricting of voting districts. Shifts in population can effect a city's political representation in state government dramatically. Every municipality is concerned about its numbers and while coping with population loss is a common concern for many central cities, not all of the principal cities have declining populations. Cities in the South, after having experienced some population loss around 1970, have seen their average levels of population grow since then. Western cities have had periods of slow growth but overall these cities have experienced growing population.

Population change is measured by taking the total population of the current year and dividing by the previous census year population central city. This gives a ratio of population change where values less than one indicate population loss and values greater than one indicate population growth from the previous census year. Figure 4.12 shows the distribution of population change by time period in a series of box plots. The dispersion of this ratio is shown by drawing a box around the first through third quartile with a bold horizontal line at the median value. The whiskers extending from the boxes denote relative extreme values and the individual cities listed are outliers. The general picture is that over time, median population change values hover around one with half of the cities losing population and half gaining population between census years. What emerges in this plot is a pattern of cities with extreme values over one, indicating leaps in population growth from the previous census year, which is somewhat unexpected given

the focus of the literature on cities that have suffered dramatic population decline. This

growth is regionally concentrated in the South and West. The plot is useful in that it gives

a visual representation of population shifts that focus on growth rather than decline.

Figure 4.12: Box plot of Central City Ratio of Population Change (log) 1950 - 2000.
The distribution of population change is shown by drawing a box around the first through
third quartile with a bold horizontal line at the median value. The whiskers extending
from the boxes denote relative extreme values and the individual cities listed are outliers.
The general picture over the time period is that the average population change has
remained relatively stable over time. Most cities in 1950 had ratios of population change
greater than 1 meaning they had gained population since 1940, but population ratios shift
down in later decades. While cities in the first quartile tend to fall below one, indicating
population loss, many cities in the South and West had dramatic gains in population.
Source: U.S. Census.
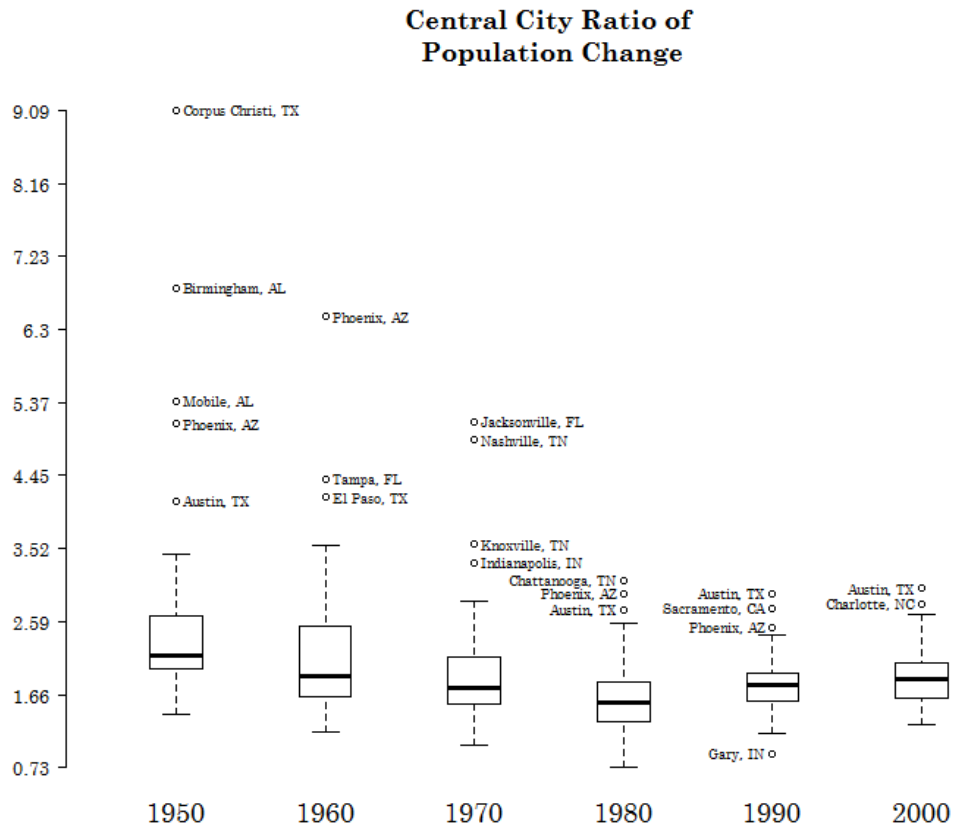
Racial Dissimilarity. A common charge leveled against the growth of political fragmentation is the role it has played in separating urban populations by race within a metropolitan area. In order to test for segregation and racial separation across the metropolitan area, I used the black-white dissimilarity and isolation indexes from the American Communities Project located at Brown University. The index is based on census tract level information and ranges from 0 to 1, where one is perfect integration and zero is perfect segregation.

The Index of Dissimilarity conveys an idea of how integrated a metropolitan area is by measuring what percent of African-Americans would need to move in order to achieve complete racial integration. As shown in Figure 4.13, the average dissimilarity score over the time period is 0.71 indicating that nearly three-fourths of the African-American population would need to change areas in order to be evenly distributed across a typical metropolitan region. The dissimilarity index rose to its peak in 1970 and has tapered to a low of 0.62 in 2000. By Cutler, Glaeser and Vigdor's (1999) standard, any score over 0.6 is considered high. For the cities and metro areas included in this study, the levels of segregation are not only high but persistent.

Figure 4.13: Racial Dissimilarity and Isolation for Metropolitan Areas, 1950-2000.
The average dissimilarity score over the time period is 0.71 indicating that nearly three-fourths of the African-American population would need to change areas in order to be evenly distributed across the metropolitan region. The dissimilarity index rose to its peak in 1970 and has tapered to a low of 0.62 in 2000. The average isolation index score is 0.45 and indicates that 45% of blacks in the metro area are not exposed to whites. The isolation index follows a similar pattern to dissimilarity, rising in 1970 to a high of 0.52 and then declining to a low of 0.35 in 2000. Source: American Communities Project.
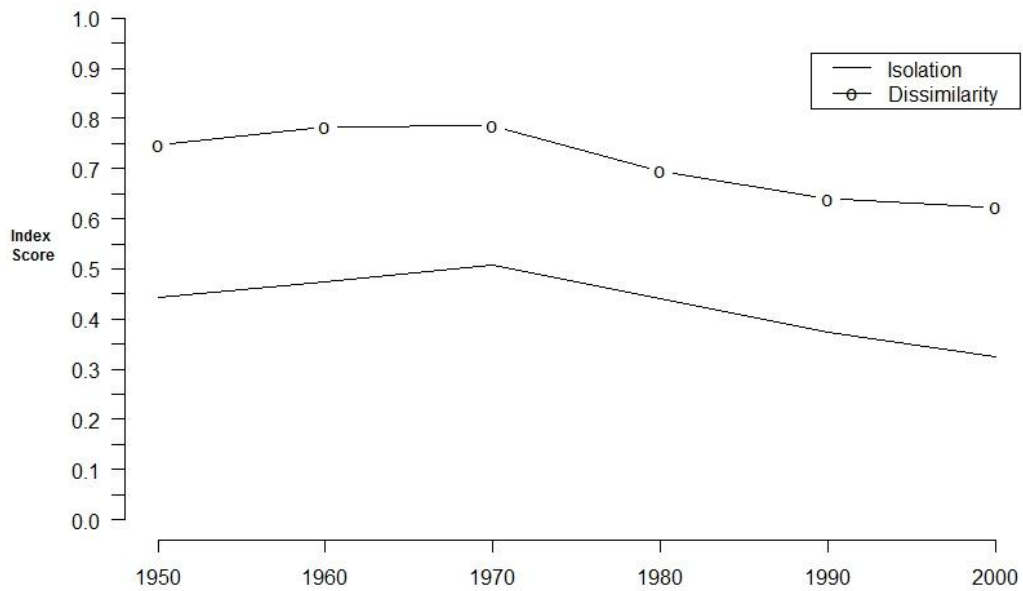
Figure 4.14 also shows the average levels of racial isolation which is a measure that indicates the likelihood of seeing or interacting with someone of another race. The black-white isolation index values reflect exposure of African-American to white individuals across the metro area. The index also ranges from 0 to 1 and the average isolation index score is 0.45 and indicates that 45% of blacks in the metro area are not exposed to whites. The isolation index follows a similar pattern to dissimilarity, rising in 1970 to a high of 0.52 and then declining to a low of 0.35 in 2000. Cutler, Glaeser and Vigdor characterize a city as having a ghetto if dissimilarity scores are over 0.6 and isolation greater than 0.3 (1999, 459). This study utilizes these indexes to approximate segregation levels at the metropolitan level and while unable to identify at this level if individual cities meet this criteria, it is reasonable to use the 0.6 dissimilarity score and 0.3 isolation score as a threshold of evidence for geographic segregation.

The index scores for isolation and dissimilarity also vary by region. Average dissimilarity index scores for the Midwest are 0.78, in the Northeast 0.71, in the South 0.69 and 0.67 in the West. Average isolation scores in Midwestern metros are 0.53, in the Northeast 0.38, in the South 0.51 and 0.28 in the West. In general the regional pattern matches the overall picture of segregation, as levels increase though 1970 and then begin declining. Looking at geographic regions, evidence of segregation is evident here too. Western metropolitan areas have higher levels of exposure of black to whites, but dissimiliarty and isolation scores indicate the existence of systematic spatial segregation.

Figure 4.14: Racial Dissimilarity and Isolation in Metropolitan Areas by Region, 1950-2000. Average dissimilarity index scores for the Midwest are 0.78, in the Northeast 0.71, in the South 0.69 and 0.67 in the West. Average isolation scores in Midwestern metros are 0.53, in the Northeast 0.38, in the South 0.51 and 0.28 in the West. In general the regional pattern matches the overall picture of segregation, levels increase though 1970 and then begin declining. Source: American Communities Project.
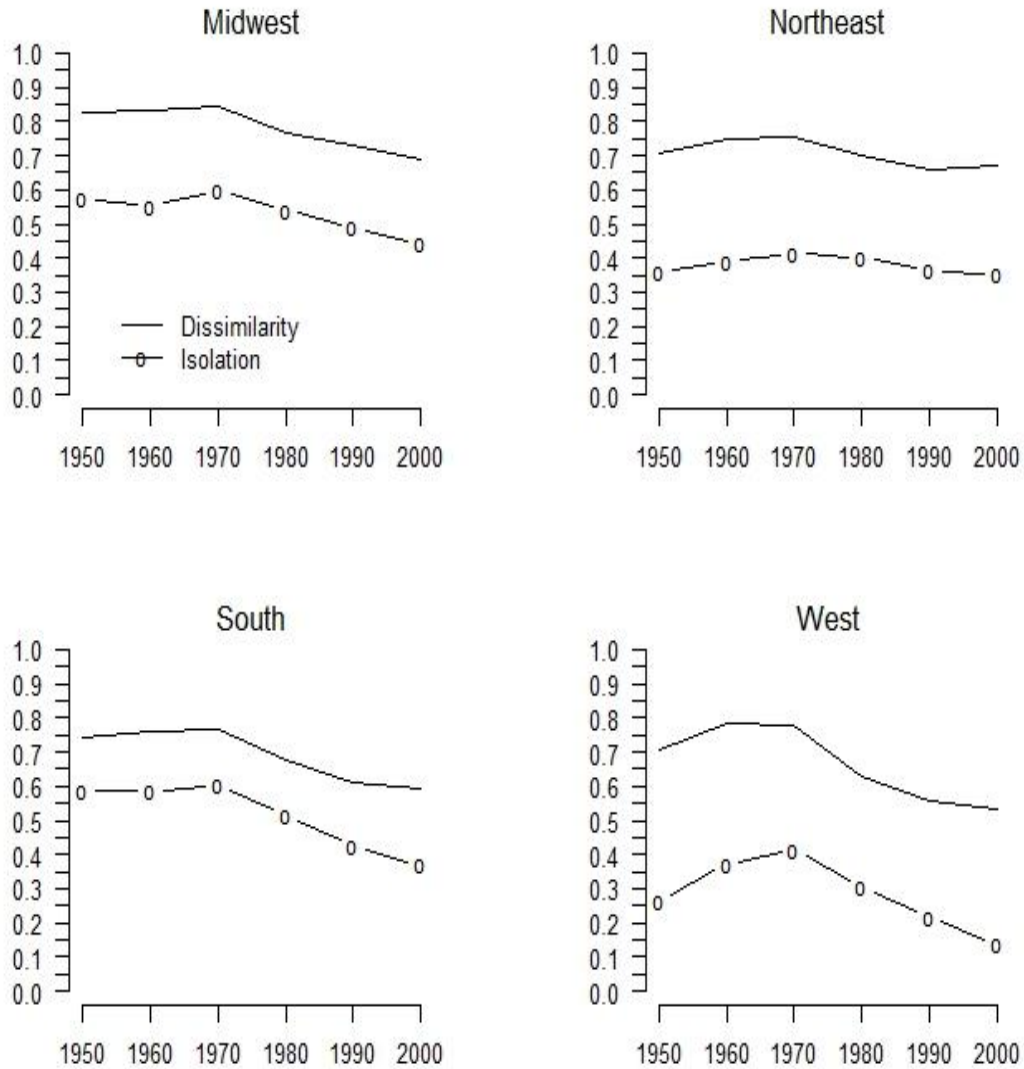
Fiscal Health. The financial health of a city is an important benchmark of overall well-being. The quality and diversity of services offered by city governments ranges from maintaining streets and parks, trash pickup, police and fire protection, public schools, and even some health services. The ability of city officials to hire adequate staff, offer pensions and other benefits as well as contract out services depends on its financial standing. Cities do not share the ability of the federal government to take on debt and so economic downturns can have a direct impact on a city's financial stability. The most recent economic recession has left cities such as Harrisburg, Pennsylvania, Chicago, Illinois, Washington D.C. and New York City facing large budget deficits that must be reconciled. This can ultimately mean cuts in government services, employee layoffs and pension negotiations. Detroit, Michigan filed for bankruptcy in 2013 and this represents an extreme case both in terms of the contributing factors to its financial descent. It is the largest city to date to file for bankruptcy.[6] Suburban growth may also be a contributing factor as outlying municipalities offer more choices of exit to households and firms. Over the last century, the tax bases of many cities, particularly within the Rustbelt, have eroded while the demands for services have increased. Sunbelt cities have remained attractive to households and businesses and typically have experienced revenue growth over the last sixty years.

City governments take in revenue through taxes, fee for service, intergovernmental transfers and state and federal aid. For the purposes of this study, each city's own-source revenue is measured because it represents what capital a city is able to bring in through taxes on residents and firms. Own-source revenue can also be a rough representation of the tax burden in the city. Following Berry (2009)'s investigation of

fragmentation on own-source revenue, I operationalize this measure by taking the sum of all revenues raised by each city, excluding intergovernmental transfers, as well as state and federal aid, and divide by the city population. Figure 4.15 shows the average own-source revenue from 1950 through 2000. The average amount of own-source revenue collected by central cities is $1,220 per capita and has been increasing over the time period from a low of $438 in 1950 to a high just over $1,800 in 1990. Regionally the Northeast has had higher averages ($1,598) that have risen steadily but appear to be leveling off between 1990 and 2000. The South ($1,167) and West ($1,150) have almost identical trajectories of consistent growth and then leveling off between 1990 and 2000. The Midwest has also seen increases in average own-source revenue ($932) but the growth rate is slower and plateaus around 1980.

Figure 4.15: Average Own-Source Revenue per Capita (10,000) and by Region. The average amount of own-source revenue per capita collected by central cities is $1,220 and has been increasing over the time period from a low of $438 in 1950 to a high just over $1,800 in 1990. Regionally the Northeast has had higher averages ($1,598) that have risen steadily but appear to be leveling off between 1990 and 2000. The South ($1,167) and West ($1,150) have almost identical trajectories. The Midwest has also seen increases in average own-source revenue ($932) but the growth rate is slower and plateaus around 1980. All dollar values are CPI-adjusted to year 2000 dollars. Source: US Census of Government.
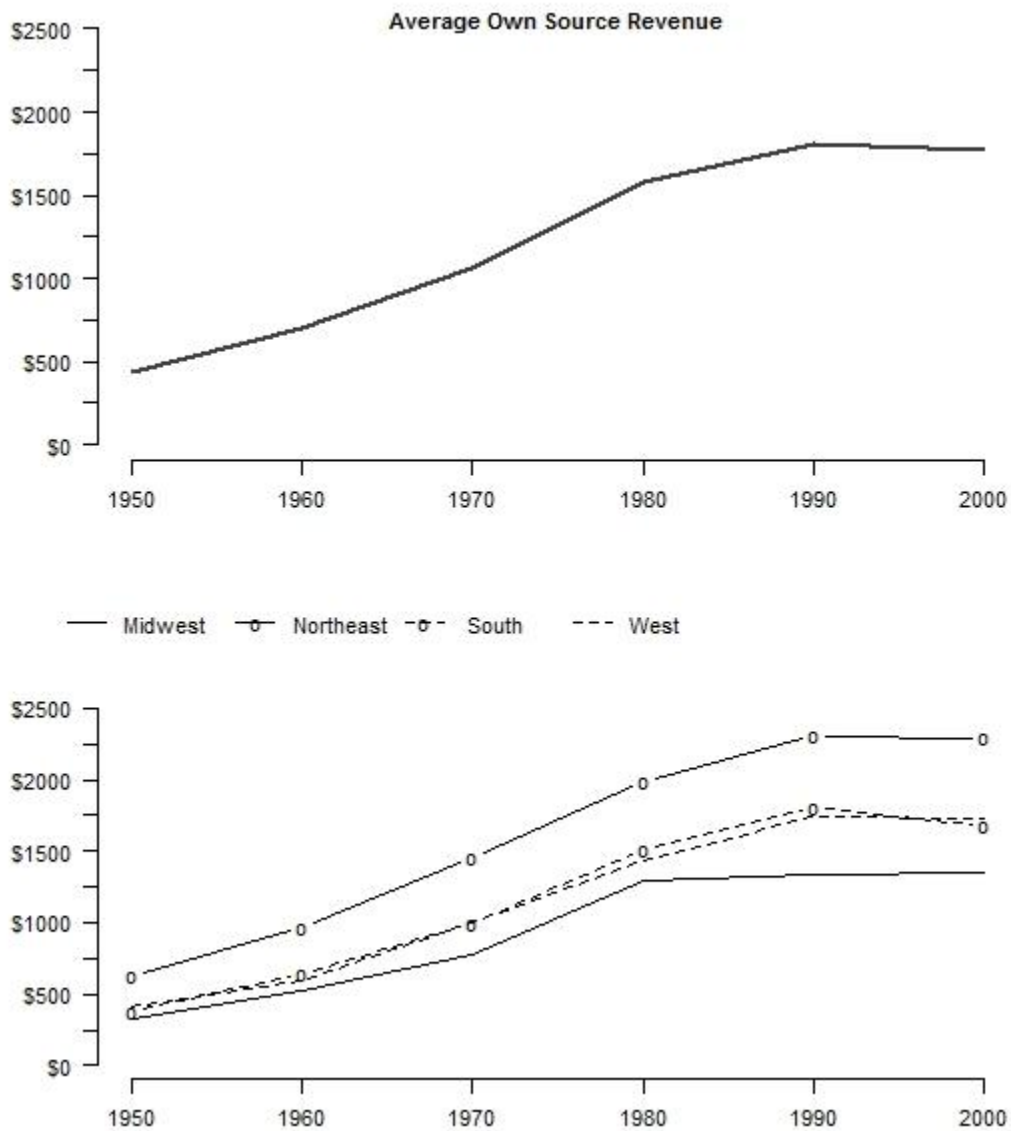
Additional Factors

In addition to the measures of fragmentation, several control variables are included in the models in order to reflect key variables that urban scholars have identified as critical to city growth or decline. There are many explanations for why cities have differing outcomes and while Chapter 2 covered in detail some of the common threads in this literature, the quantitative analysis must also include measurements that take into account the impact of factors like poverty, manufacturing, and household income.

Race. The first factor is the percent African-American of central city population. This measure attempts to capture the argument that central cities historically are home to minority populations that were typically kept out of higher-wage jobs due to discrimination. African-Americans also experienced discrimination in the housing market and were effectively barred from suburban home ownership until federal fair housing laws were passed in 1968. Figure 4.16 is a box plot of the percent African-American in central cities and shows how the median percentage has risen steadily during the six decades considered in this study. The box is drawn around the first and third quartile with a horizontal line showing the median value for that year. The typical percent of African-American population in central cities rose from a low of 13% in 1950 to 30% in 2000. The vertical lines give a sense of the dispersion and outlying values where it is evident that some cities have a much higher portion of their population that is African-American than the typical. In 1950 outliers were clustered in the South but Washington, D.C. and Gary, Indiana are notable outliers in later years.

Figure 4.16: Box plot of Percent African-American in Central Cities, 1950 - 2000.
The average percent of African-American population in central cities rose from a low of 13% in 1950 to 30% in 2000. The vertical lines give a sense of the dispersion and outlying values where it is evident that some cities have a much higher portion of their population that is African-American than the typical. In 1950 outliers were clustered in the South but Washington, D.C. and Gary, Indiana are notable outliers in later years. Source: U.S. Census.
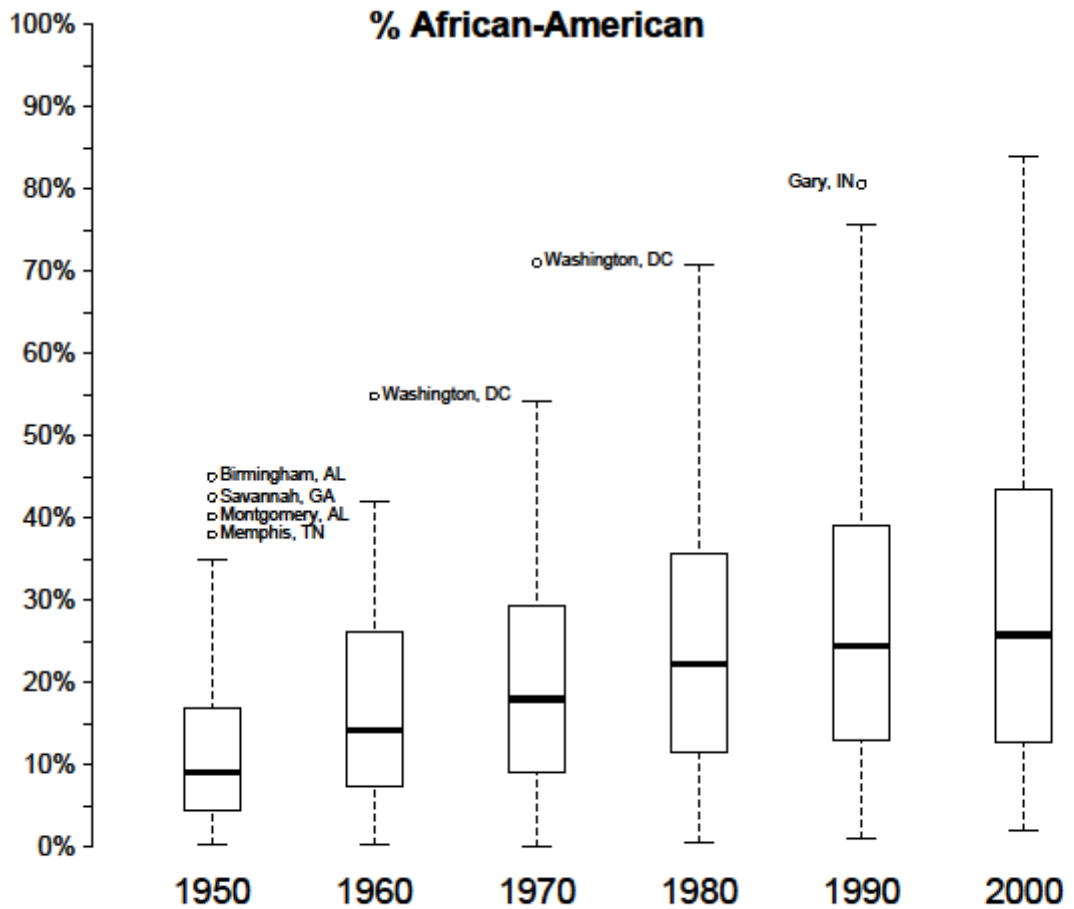
Manufacturing. Manufacturing jobs were an attraction that drew many new households to cities well into the 1950s until industries began moving facilities and processes to other areas of the country and overseas. Cities located in the Rustbelt felt these changes keenly, particularly those in which the auto and steel plants that had been the cornerstone of the local economy. Figure 4.17 shows a box plot of the percent employed in manufacturing industries in central cities. The average percent employed in manufacturing has fallen from a high of 28% in 1950 to a low of 15% in 2000. The inter-quartile range between the first and third quartile has been steadily shrinking as well indicating that as a whole, fewer cities have less of their workforce employed by manufacturers. The vertical whiskers, however, indicate that there are still some cities with over 30% of the workforce in manufacturing. Rustbelt cities of Fall River, Massachusetts, Rochester, New York, and Reading, Pennsylvania are notable outliers and demonstrate that even while the sector as a whole has pulled back from central cities, there are still some that rely on manufacturing jobs.

Figure 4.17: Box plot of the Percent Employed in Manufacturing Industries in Central Cities, 1950 - 2000. The average percent employed in manufacturing has fallen from a high of 28% in 1950 to a low of 15% in 2000. The inter-quartile range between the first and third quartile has been steadily shrinking as well indicating that as a whole, fewer cities have less of their workforce employed by manufacturers. The vertical whiskers however indicate that there are still some cities with over 30% of the workforce in manufacturing. Rustbelt cities of Fall River, Massachusetts, Rochester, New York, and Reading, Pennsylvania are notable outliers. Source: U.S. Census.
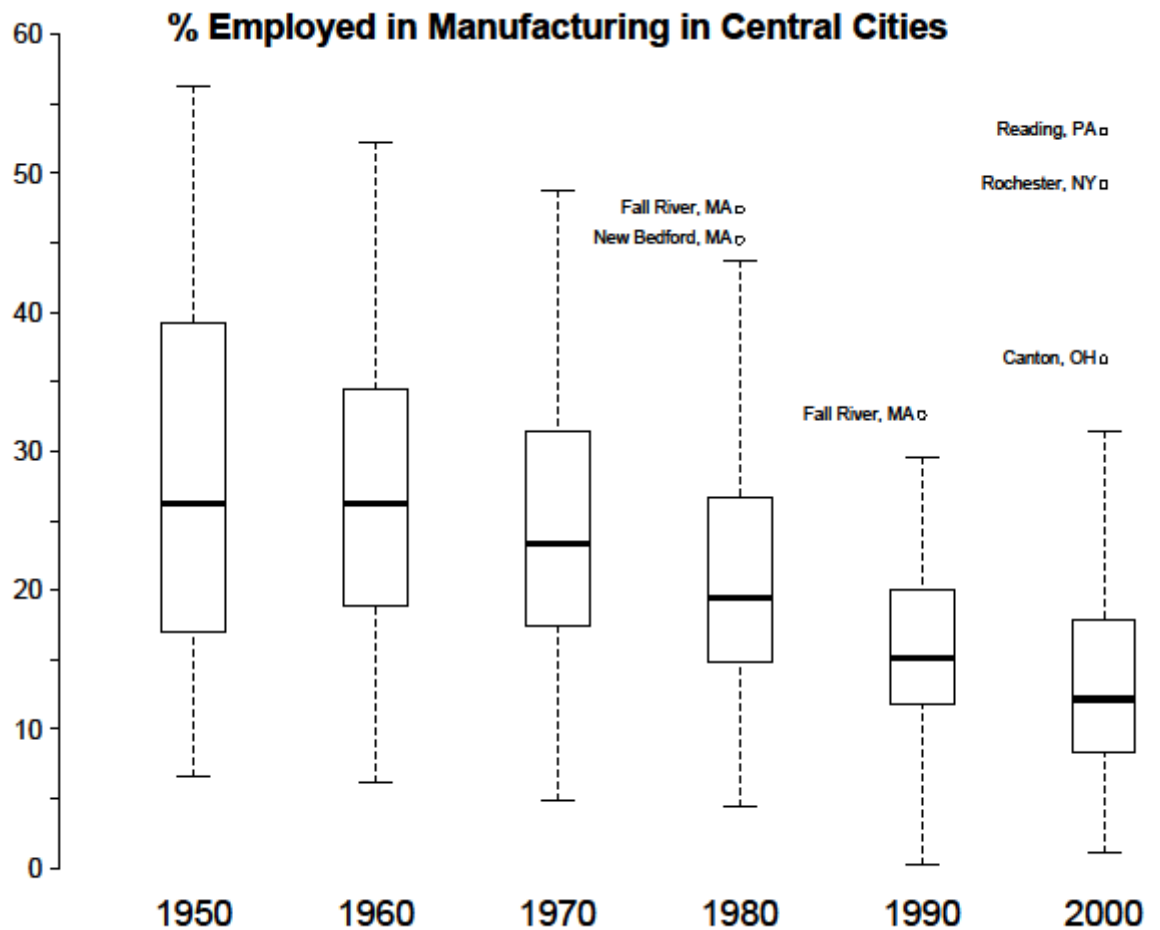
Income. In a similar vein as declining employment, the variability of household income of city residents can also play a role in overall city health. When households are faced with job loss or other income reduction, some will choose to move out of the city to find other work. At the aggregate level, when whole sectors of the economy suffer and are located in central cities, this can have a disproportionate effect on residents and ultimately city budgets as tax revenues fall. Figure 4.18 shows a box plot of median family income in core cities between 1950 and 2000. The income values have been adjusted to 2000 dollars and the average ranges from a low of $23,981 in 1950 to $40,687 in 2000. Income reached a high of $41,055 in 1970 but declined quickly between 1970 and 1980. The vertical lines show the dispersion of the measure beyond the first and third quartile and indicate that in later years some cities remain stubbornly at the bottom for average family income while cities like Seattle, Washington and Berkeley, California are wealthy outliers. This reflects the regional component of economic success and family wealth in cities. Cities home to industries that grew during the time period, such as defense, aeronautics and technology, have see median family incomes grow and reaped the benefits of being home to these industries.

Figure 4.18: Median Family Income in Central Cities 1950 - 2000. Income is adjusted to 2000 dollars and the average ranges from a low of $23,981 in 1950 to $40,687 in 2000. Income reached a high of $41,055 in 1970 but declined quickly between 1970 and 1980. The vertical lines show the dispersion of the measure beyond the first and third quartile and indicate that in later years some cities remain stubbornly at the bottom for average family income while cities like Seattle, Washington and Berkeley, California are wealthy outliers. Source: U.S. Census.
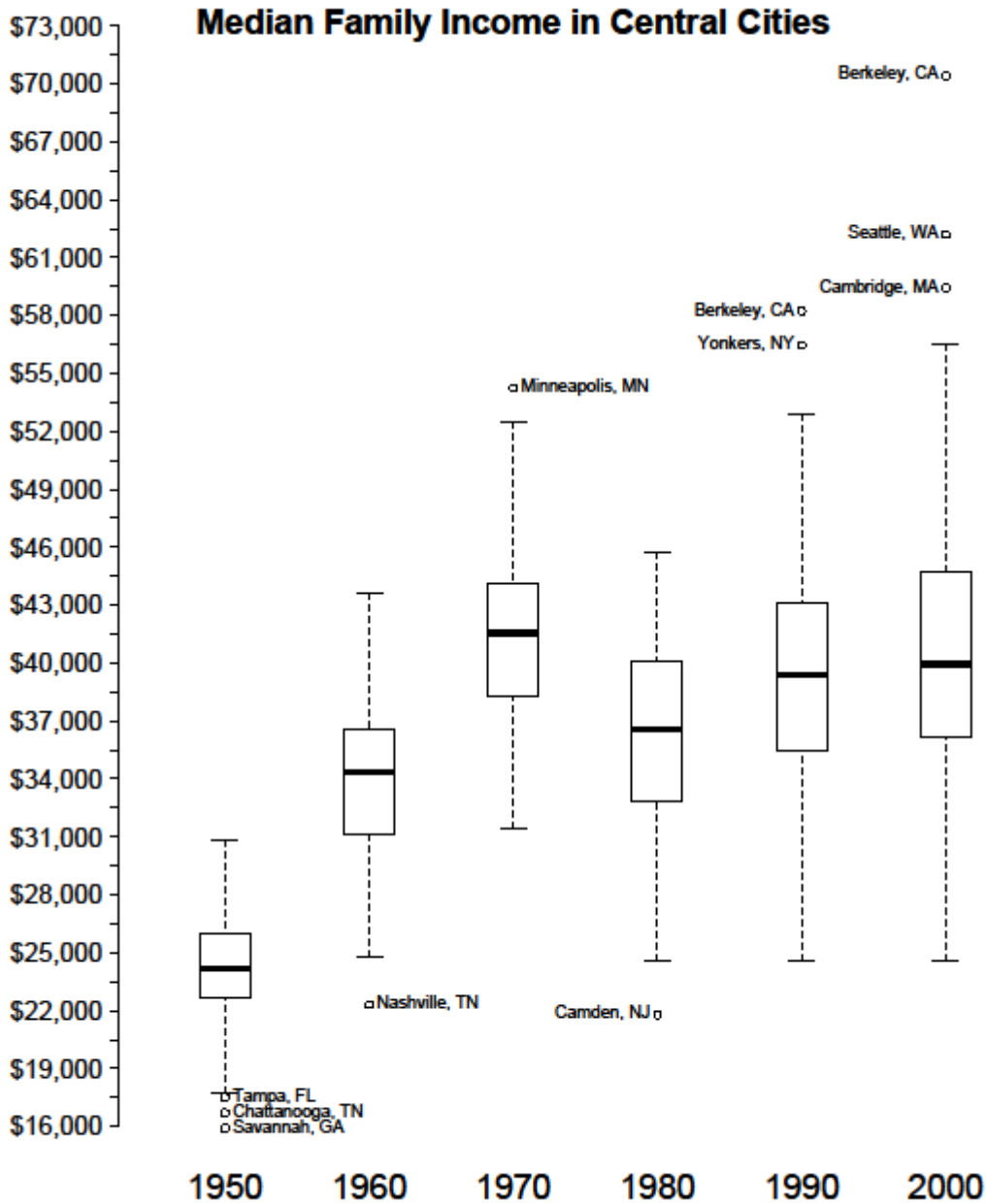
Poverty. Another common thread running through the urban politics literature is that

cities historically have a concentration of poor households which cost more to provide

services for and contribute less to overall revenues. Cities which experienced white flight

and the decline of manufacturing industries were also home to residents unable to move

to suburbia and disproportionately impacted by economic disinvestment. Figure 4.19

shows the percent of families in poverty in central cities between 1950 and 2000. The

median percent of families considered in poverty by the U.S. Census declines from a high

of 20% to a low of 11% in 1970 and then rises again to a high of 19% in 2000. The

dispersion of the measure gradually tapers off indicating fewer extreme values. Outliers

switch in 1980 from concentrating in Southern cities to Rustbelt cities, notably Camden,

New Jersey and Detroit, Michigan which were hard hit by manufacturing decline and

white flight.

Figure 4.19: Percent of Families in Poverty in Central Cities, 1950 - 2000. The median percent of families considered in poverty by the U.S. Census declines from a high of 20% to a low of 11% in 1970 and then rises again to a high of 19% in 2000. The dispersion of the measure gradually tapers off indicating fewer extreme values. Outliers switch in 1980 from concentrating in Southern cities to Rustbelt cities. Source: U.S. Census.
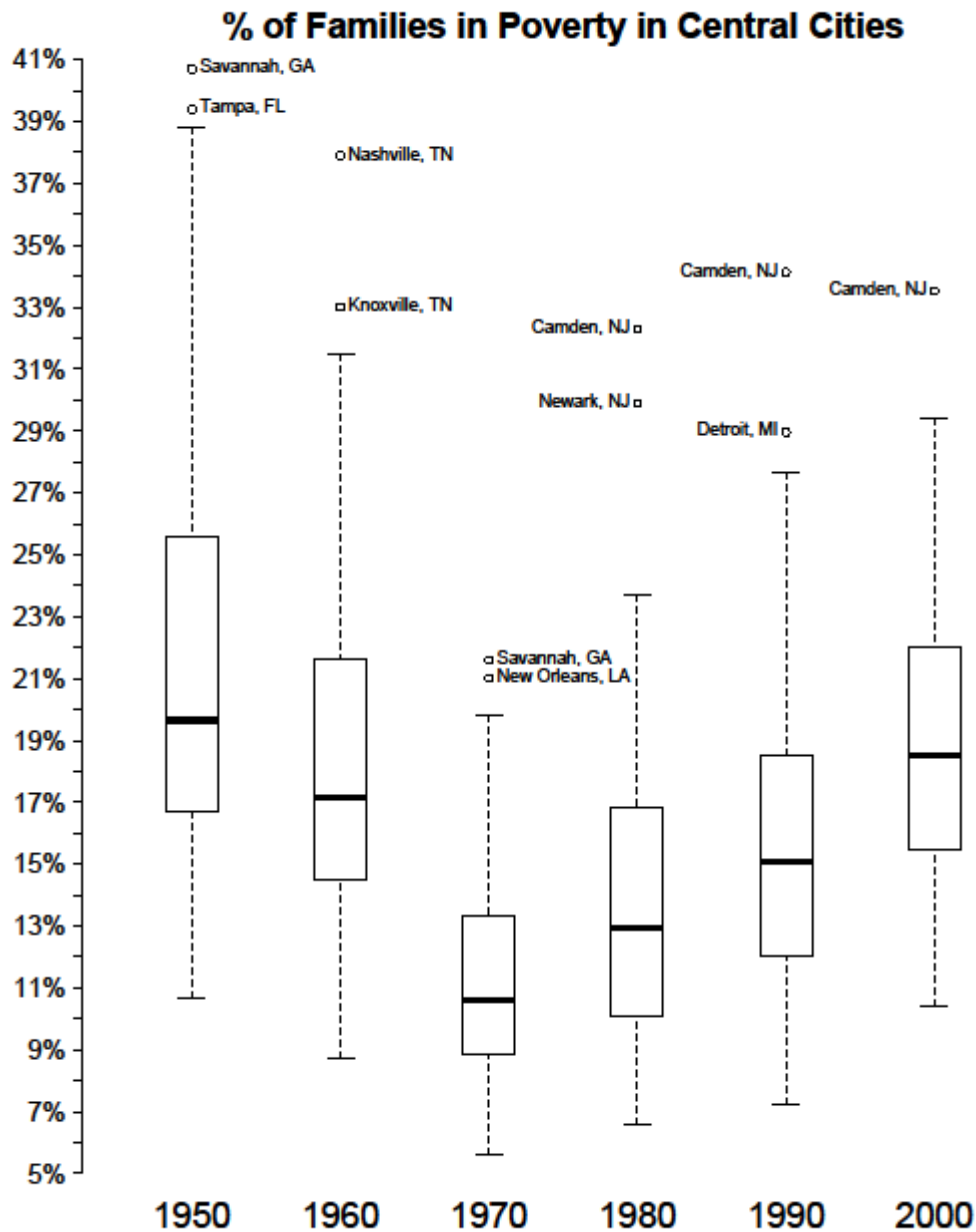
Unemployment. During the time period of this study, cities changed dramatically and while some did decline in the face of economic disinvestment, white flight and increased poverty, other cities grew and were prosperous while having success in technology and service industries and a growing population. Including the percent of the labor force that is unemployed for each city will help show where cities have done well and that others have struggled with persistent unemployment. Figure 4.20 shows the percent of civilian labor force unemployed in central cities. The box plot shows that the typical city has relatively low unemployment percentages until the 1980 and 1990s. Unemployment in central cities declines from 1950 through 1970 to a low of 4.5% but rises significantly to a high of 8.3% in 1990, and then declines again in 2000. There are many outliers however where cities such as Detroit, Michigan and Camden, New Jersey who have felt job losses over time acutely, and then unemployment remains persistently higher than median levels of unemployment.

Figure 4.20: Percent of Civilian Labor Force Unemployed in Central Cities, 1950 - 2000. The box plot shows the dispersion of unemployment but drawing a box around the first and third quartile, the horizontal lines shows the median value, and the extending vertical lines indicate extreme values. Unemployment in central cities declines from 1950 through 1970 to a low of 4.5% but rises significantly to a high of 8.3% in 1990, and then declines again in 2000. There are many outliers denoting cities such as Detroit, Michigan and Camden, New Jersey who have felt job losses over time acutely. Source: U.S. Census.
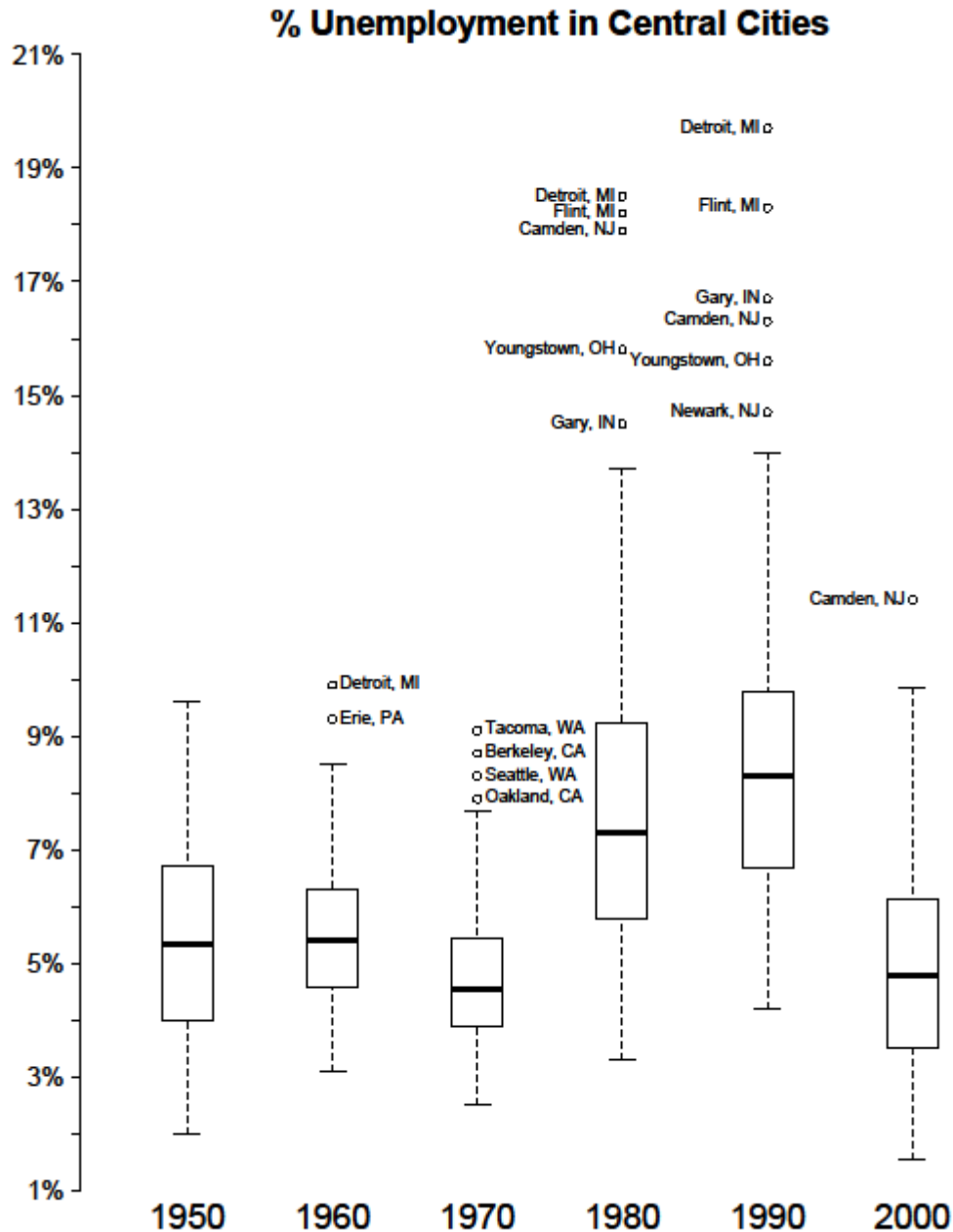
Region. The last control variable included in the models takes into account the impact

that geography plays on city outcomes. As mentioned already, there are key features of

cities in the Northeast and Midwest, such as decline of the manufacturing industry, that

make these cities different than cities in other regions. In that same vein, cities in the

South and Southwest have seen industries relocate to their region and in some cases have

also experienced rapid population growth. While the Census breaks the continent into

four regions (Northeast, Midwest, South and West) for the purposes of this study I have

chosen to control for cities located in the Sunbelt or Rustbelt.[1] Figure 4.21 is a U.S. map

with Rustbelt states shaded light blue and Sunbelt states shaded light yellow. Rustbelt

cities are located in the Northeast and upper Midwest where manufacturing, iron and steel

works, and other heavy industries were concentrated. Of the 100 cities analyzed in this

study 52% of the cities are located in the Rustbelt. Sunbelt cities are located in the South

and West and are characterized by mild weather and rarely have had hard freezes. These

cities rose in prominence between 1950 and 2000 and represent 27% of the cities.

Figure 4.21: Regional Map of Rustbelt and Sunbelt Cities 1950 - 2000. Rustbelt cities are located in the Northeast and upper Midwest where manufacturing, iron and steel works, and other heavy industries were concentrated. Of the 100 cities analyzed in this study 52% of the cities are located in the Rustbelt. Sunbelt cities are located in the South and West and are characterized by mild weather and rarely have a hard freeze. These cities rose in prominence between 1950 and 2000 and represent 27% of the cities.
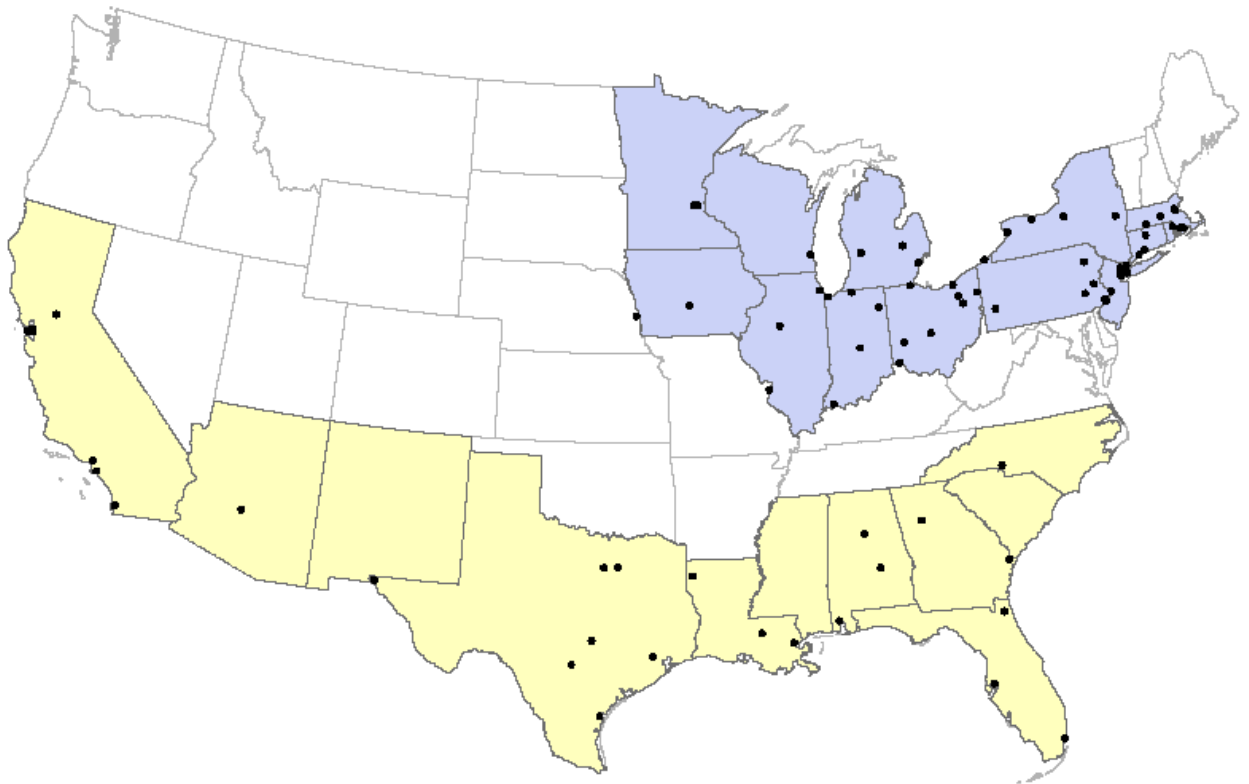
Summary

Chapter 4 has identified eight measures of political fragmentation to test its impact on cities' population change, own-source revenue and metropolitan wide racial segregation. Political fragmentation is classified into three types, horizontal, vertical and internal fragmentation. Measures of horizontal fragmentation include an indexed variable for the number of governments per capita (10,000) and the number of governments per square mile which declined through 1960 before increasing steadily to levels similar to 1950. Measures looking at the proportion of municipal governments as well as the proportion of school districts to other governments have also increased, particularly between the decades of 1970 and 1980. Vertical fragmentation has been decreasing over time. However, there are stark regional differences notably in the West where jurisdictional overlap has been historically much higher. Internal fragmentation has remained steady over the time period but regionally the Northeast and Midwest have higher levels and this appears to be increasing. In general the levels of city population have been steady, while the tax burden and segregation levels have been increasing. Whether this is related to the amount and types of political fragmentation is the question at the heart of this study. Chapter 5 formally models these expected relationships with four separate time series regression analyses with six periods of panel data from 1950 through 2000.

Notes: Chapter 4

[1] The US Census of Government is not entirely accurate in its counts of governments.

[2] Definitions for metropolitan areas, principle cities, combined metropolitan statistical areas as well as micro and macro statistical areas are taken from the United States General Accounting Office "Report to the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census, Committee on Government Reform, House of Representatives," *Metropolitan Statistical Areas: New Standards and Their Impact on Selected Federal Programs*, 2004: GAO.
URL: http://www.gao.gov/new.items/d04758.pdf

[3] Regional definitions follow the state designations of the US Census which is broken into four divisions (Northeast: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York and Pennsylvania; Midwest: Indiana, Illinois, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota; South: Delaware, DC, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma and Texas; West: Arizona, Colorado, Idaho, New Mexico, Montana, Utah, Nevada, Wyoming, California, Oregon and Washington).
URL: http://www.census.gov/geo/maps-data/maps/pdfs/reference/us_regdiv.pdf

[4] Only 20 states have a government classification of towns or townships and in some states they act much like a municipality and do not overlap (Maine, Massachusetts, New Hampshire, New Jersey, North Dakota, Pennsylvania, Rhode Island, South Dakota and Wisconsin). But in the other states, towns act more like a special district and may overlap municipalities (Connecticut, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, New York, Ohio and Vermont). I include the 11 states with overlapping towns as part of the numerator for jurisdictional overlap and the remaining 9 states with territorially exclusive townships as part of the denominator.

[5] For example the City of St Louis has had the same number of aldermen/alderwomen for decades, despite continual losses in population. During the 2012 election, Proposition R passed by 61.5% to decrease the number of aldermen from 28 to 14 in 2020 to fit the current dynamics. There is a racial component to this proposition, in the northern predominately African-American areas of the city a majority of residents voted against Proposition R. Aldermen in this area were unconvinced that reducing elected officials would save money and they feared that residents would lose direct connections to city government.
URL: http://nextstl.com/2012/11/understanding-st-louis-proposition-r-ward-by-ward/

[6] Information about cities on the brink of financial collapse and Detroit's filing for Chapter 9 bankruptcy are taken from Governing.com.
URL: http://www.governing.com/gov-data/municipal-cities-counties-bankruptcies-and-defaults.html

Chapter 5

The Effects of Political Fragmentation

The relationship between political fragmentation and central city outcome measures is expected to be complex and vary by type of fragmentation - horizontal, vertical and internal - as well as by outcome, population density, racial dissimilarity and isolation and own-source revenue. Before presenting the models and analysis of the results, the reasoning for certain expected relationships between fragmentation and city outcome are stated.

Horizontal fragmentation is expected to have a negative impact on central city population density. As the number of residential choices increases across an urban area, households are more likely to choose to exit the core city by selecting a suburban residence over a city neighborhood. Central city population is predicted to be negatively associated with vertical fragmentation. Jurisdictional overlap is an indication of overspending by special districts as they seek to provide increased service and protect special interests. Theoretically, increases in services would only serve to further attract residents reducing the population pool for the core city. Internal fragmentation is expected to have a negative impact on city population. The assumption here is that more elected officials represent cities that have less reformed governance, more bureaucracy and internal politicking and will be disadvantaged in comparison to streamlined suburban governments.

Higher levels of horizontal and vertical fragmentation are also expected to increase the amount of racial separation and isolation between the city and the metro area. Historically racial sorting has been facilitated through restrictive covenants and racially biased financial incentives. Though many minority households have left racially

homogenous city neighborhoods for suburban ones, metropolitan areas are hardly a picture of integration and diversity. It is expected that higher levels of political fragmentation in terms of the multiplicity and stratification of governments have effectively allowed for increased segregation and isolation between white and African-American households. Cities surrounded by higher levels of horizontal and vertical fragmentation will likely have more households that would need to move in order to have racially integrated communities and travel farther to be exposed to individuals of a different race.

The fiscal stability of central cities is predicted to be adversely affected by horizontal fragmentation. A city's ability to increase its own-source revenue stream is tied to residents and property values. The tax base of cities shrinks as residents opt for suburban communities and this process is more pronounced as the numbers of municipal and special district governments increase. Cities are also more likely to produce services in house or to spend more on redistributive policies and other services, putting them at a further financial disadvantage. The amount of jurisdictional overlap in a metro area is expected to have a positive impact on central cities' fiscal health. The city represents one more potential participant dipping into in the common fiscal pool and increases in jurisdictional overlap could increase the tax burden of city residents.

In order to determine the impact of political fragmentation on central city outcomes I utilize panel regression models fitted to four aspects of outcome: population change, racial dissimilarity, racial isolation and own-source revenue. Using data on the 100 largest cities in 1950 and following their progress over five decades the influence of

fragmentation is presented and described at the horizontal, vertical and internal level. This chapter discusses the hypotheses, methodology, and the results of the four models.

Quantitative Analysis

One of the central motivations for conducting an analysis with a historical lens is the argument that political fragmentation is not well illustrated in cross-sectional data. Utilizing a pooled time series regression analysis allows the combination of multiple cross-sections to capture variation between different cities as well as differences over time (Sayrs 1989). In order to achieve coefficient estimates that are efficient and unbiased specific consideration is given to the behavior of error in the model. In a cross-section time series regression error variance occurs within observations for each year and also between years. For instance, changes in the city outcome variable in 1960 may influence the estimates for that variable in 1970. There are three major concerns about the behavior of the error term in cross-sectional time series: to determine whether differences in the error term is across entities (*i*'s) given the vector of betas matter (selecting either fixed effects or random effects), to determine whether the error variance within each group is constant (assumed to be homoskedastic), and to check that errors across time are not correlated (assumed to have no serial correlation) (Wooldridge 2002). The Hausman test is commonly used to decide between random and fixed effects, and methods exist to calculate errors that are robust to heteroskedasticity and serial correlation if either assumption is violated.

A key difference between using a random versus fixed effect regression to estimate the parameters is that random effects are assumed to come from one normal distribution whereas fixed effects assumes there are time invariant qualities (Wooldridge

2002). The advantage of the random effects model is that it is efficient, only one degree of freedom is used up when estimating the constant, which is the mean random effect. This means that differences between entities do not matter because if it is a normal distribution and 95% of the observations fall within two standard deviations of the mean, the vector of explanatory variables added to this random draw for any *i* will yield very similar predictions (Wooldridge 2002). On the other hand, for fixed effects each *i*'s constant is drawn from its very own distribution, which adds (*i*-1) parameters, eating up degrees of freedom and giving each *i* its own constant. Fixed effect panel OLS is equal to OLS with a dummy for each *i*. While this allows the unique attributes of each city, at each point in time, to be in a sense accounted for, its primary disadvantage is the additional parameters eat up degrees of freedom and the standard errors of the parameters are subject to bias (Wooldridge 2002). The loss in efficiency is traded for less omitted variable bias in parameter standard errors. Fixed effects would theoretically account for unobserved, unobservable and even unmeasurable city idiosyncrasies. In other words, there may be unique attributes to a city such as Detroit that make it different from the other cities included in the sample. If fixed effects estimates are statistically significant different from the random, these time invariant characteristics must be controlled for, according to convention and the Hausman test.

Population Change and Political Fragmentation

The first model examines at the impact of political fragmentation on the ratio of population change in the central city. The distribution of population change is skewed right and so the natural log was taken so the functional form would approximate a normal distribution. Political fragmentation measures attempt to model the three aspects of fragmentation (horizontal, vertical and internal) previously discussed. Horizontal

fragmentation was measured using the percent of the metropolitan area's population residing in the central city, the proportion of school districts to total governments in the metro area, and an indexed variable of the ratio of total governments per capita (10,000) and the number of municipalities per capita (10,000). The index, referred to as density of governments, is also skewed right and so the natural log was used in the model. Vertical fragmentation is measured using Berry's (2009) measure of jurisdictional overlap and internal fragmentation is measured as the number of elected officials within the central city per capita (10,000). A measure for spatial fragmentation is also included as a general measure of fragmentation and as it was also skewed right, the natural log was used in the model. Measures in the central city for the percent African-American, percent employed in manufacturing, the percent unemployed, the percent of families in poverty and location in the Sunbelt and Rustbelt are included as controls.

Table 5.1 shows the model diagnostics that informed my selection of the best fitting model. The Hausman, which checks for the presence of statistically significant, city-specific time-invariant fixed effects not captured in the model (Wooldrige 2002) is the first diagnostic test. The null hypothesis of no city-specific effects is not rejected which means that the more efficient random effects model performs better than fixed effects. The second and third tests are designed to test assumptions about the behavior of residuals in longitudinal models. The Breusch-Pagan null hypothesis tests for constant error variance or homoskedasticity in the residuals. In this model the assumption of homoskedasticity was violated indicating that there is group-wise heteroskedasticity, meaning that the non-constant error variance is within cities which can cause the standard errors for the coefficients to be biased downwards, and ascribing statistical significance

to variables that are not significant (Wooldridge 2002). In the third test, the Breusch-Godfrey/Wooldridge test for serial correlation, the null hypothesis was also rejected meaning that the residuals are correlated across time within cities. For any given city in the sample, the best predictor for the value of its residual at time t is the value of its residual in the previous time period (time $= t$-1). The result of the violation is that the estimates for the coefficients are inefficient. To correct for violations of serial correlation and heteroskedasticity a variance covariance matrix with robust standard errors was used to estimate the model in order to make the estimates more efficient and unbiased.

Table 5.1: Central City Population Change Model Diagnostics

Test	H_o	Statistics	Result: H_o
Hausman	Random over Fixed Effects	$X^2_{(15)} = 18.35$ $p = 0.24$	Not Rejected
Breusch-Pagan	Homoskedasticity	$X^2_{(17)} = 37.22$ $p = 0.003$	Rejected
Breusch-Godfrey/Wooldridge	No Serial Correlation	$X^2_{(1)} = 4.3$ $p = 0.04$	Rejected
LaGrange Multiplier	Significant Time-Fixed Effects	$F_{(5, 474)} = 6.69$ $p = 0.000$	Rejected
Pesaran	Cross-Sectional Dependence	$Z = 3.44$ $p = 0.001$	Rejected

The fourth and fifth diagnostic tests look for significant time-fixed effects and cross-sectional dependence. The Lagrange Multiplier tests the statistical significance of time, essentially looking to see if there are fixed effects in population change between 1950 and 1960 that are different than between 1970 and 1980. The null hypothesis that there are no time-fixed effects was not rejected and so time-fixed effects are included in the model. Population change may trend upwards or downwards simply with the passage

of time and including the time-fixed effects wards off the impact of omitted variable bias and gives a degree of confidence that the explanatory power of variables in the model are wrongly assigned. The final diagnostic test, the Pesaran test for cross-sectional dependence looks to see if residuals are correlated within time periods across cities. For example there may have been significant events such as highway construction or riots in cities between 1960 and 1970 that cause residuals to be significantly lower or higher than in other time periods. The inclusion of time-fixed effects helps to avoid cross-sectional dependence and the null hypothesis was not rejected so it is not necessary to address.

The results of the population change model reveal an interesting though modest relationship with political fragmentation which can be seen in Figure 5.1 and Table A5.1 in the appendix. Figure 5.1 plots the estimated coefficients with 95% confidence intervals extending in horizontal lines through each point. The lines that do not cross the vertical zero line indicate the variable is statistically significant in the estimated model. The percent of the metropolitan area living in the central city and the proportion of school districts to total governments in the metro area were statistically significant fragmentation measures. Percent African-American in central cities and location within the Sunbelt were the significant control variables.

Figure 5.1: Central Cities Ratio of Population Change Random Effects Model Results, Census Years 1940-2000.

Results from Random Effects Panel Regression

(Dependent Variable: Logged City Population Change)

Estimates with 95% Confidence Intervals
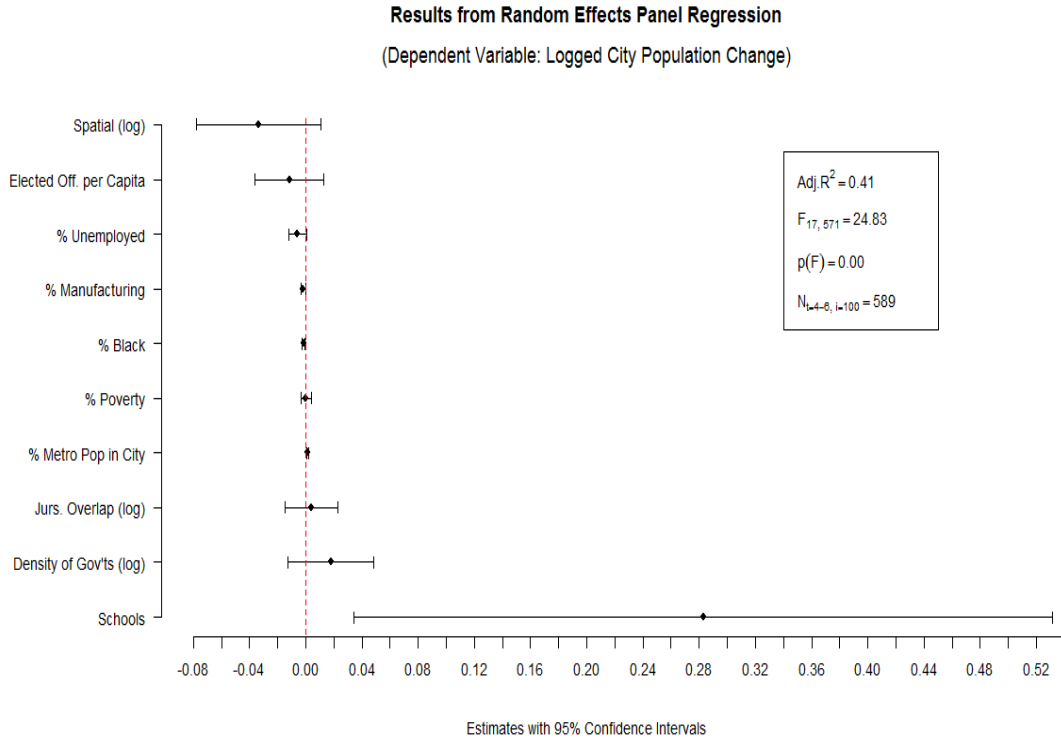
To further explore the size and meaning of the significant variables, their predicted effect on population change is graphed. Figure 5.2 is a layered plot that shows the distribution of the percent of a metro area living in the central city in the shaded histogram with the first and third quartiles noted with vertical white lines. Plotted over the histogram is the predicted change in cities population ratio across the range of the cities' share of the metro population. The actual values of the ratio of population change variable are shown and indicate that while holding all other variables at their median and year to 1970, as the percentage of a metropolitan area's population living in the central city increases the model predicts the population change ratio would be greater than one, indicating a city's population is increasing from the previous census year. The model

predicts that all else equal, cities in the first quartile which are cities that hold 16% of

metro area population or less, would lose population from the previous census year. As

cities remain population centers in their regions, their population tends to keep growing.

Figure 5.2: Predicted Change in Population across the Range of the Percent Metropolitan Area Population Located in the Central City. The distribution of the percent of a metro area living in the central city is shown in the shaded histogram with the first and third quartiles noted with vertical white lines. Plotted over the histogram is the predicted change in cities population ratio across the range of the cities' share of the metro population. The actual values of the ratio of population change variable are shown and indicate that while holding all other variables at their median and year to 1970, as the percentage of a metropolitan area's population living in the central city increases the model predicts the population change ratio would be greater than one, indicating a city's population is increasing from the previous census year.
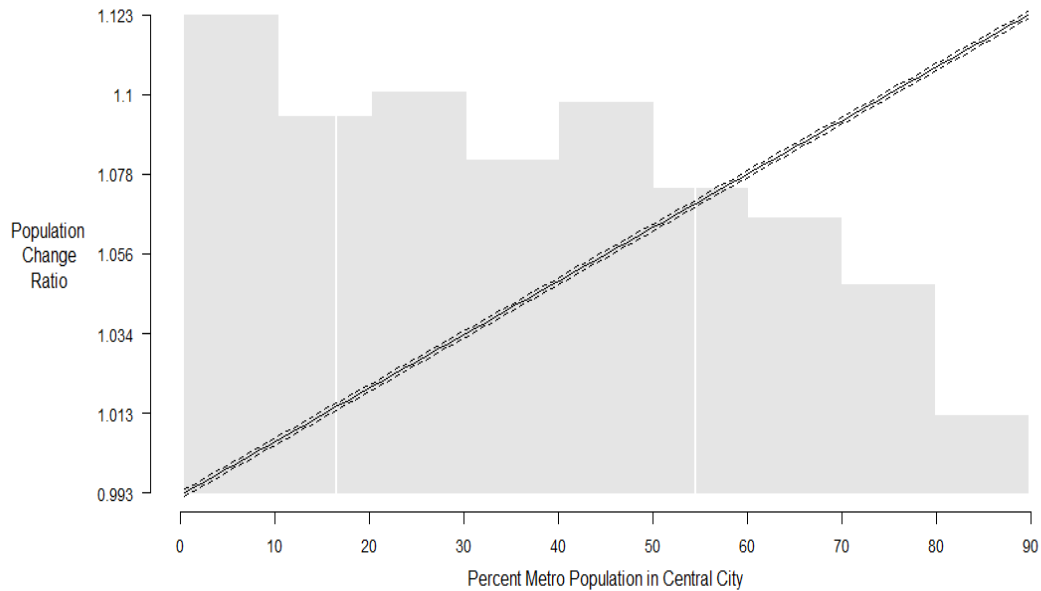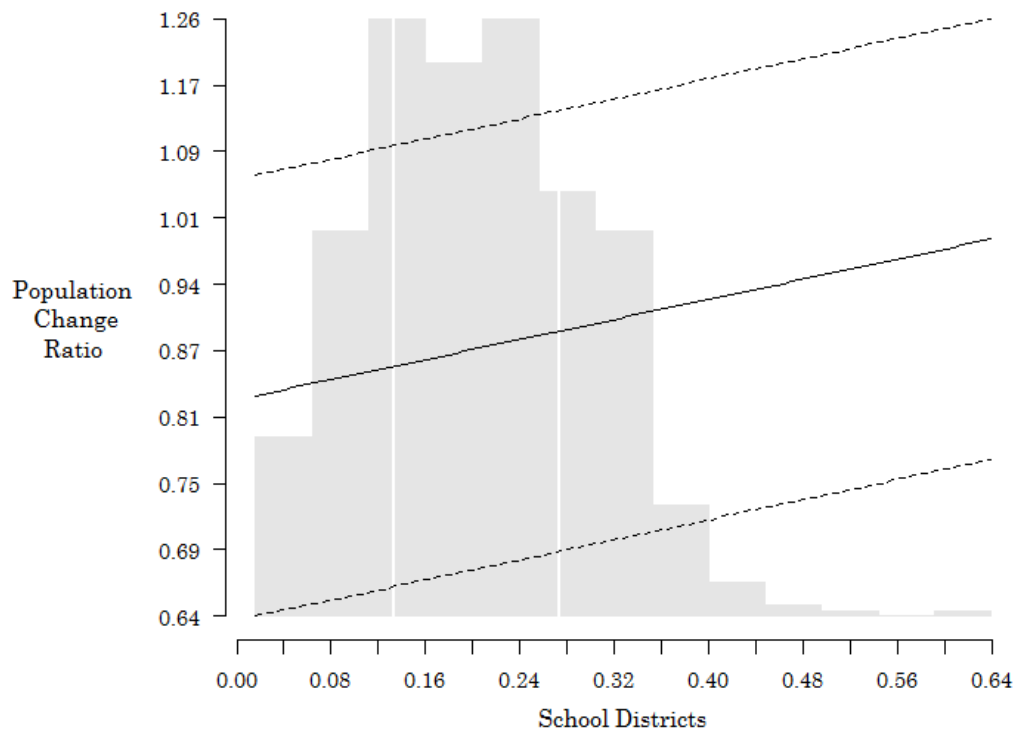
The second significant fragmentation measure on population change is the proportion of governments that are school districts. The predicted effect on population across the range of school district proportion is shown in Figure 5.3. This plot shows the distribution of proportion of total governments that are school districts in a metropolitan area in gray with the first and third quartiles marked with vertical white lines. The predicted population change ratio is superimposed with the 95% confidence interval across the range of the proportion school districts values. While the logged population change ratio is modeled, the actual values are shown in the plot to make interpretation more straightforward. With all other variables held at their median and the year set to 1970, increasing the proportion of governments that are school districts is predicted to decrease central city population from the previous census year. While the slope of the line is positive, it does not cross the 1.0 threshold which would indicate population growth from the previous decade. Having a greater number of public school choices seems to be something that encourages families to leave central cities.

Figure 5.3: Predicted Population Change Ratio across the Range of Proportion School Districts of Total Governments in Metropolitan Areas. The distribution of the proportion of total governments that are school districts in a metropolitan area is shown in gray with the first and third quartiles marked with vertical white lines. The predicted population change ratio is superimposed with the 95% confidence interval across the range of the proportion school districts values. While the logged population change ratio is modeled, the actual values are shown in the plot to make interpretation more straightforward. With all other variables held at their median and the year set to 1970, increasing the proportion of governments that are school districts is predicted to decrease central city population from the previous census year. While the slope of the line is positive, it does not cross the 1.0 threshold which would indicate population growth from the previous decade.

While fragmentation has a moderate impact on population change, it is significant and meaningful. A population change ratio presents a general picture of population, indicating only whether there is growth or decline and little information beyond that. For measures of horizontal fragmentation to be significant demonstrates that there is a relationship between the governing arrangements in a metropolitan area and city outcomes. The population change model also hints at the complexity of the relationship since not all measures of fragmentation reveal harmful effects on cities. This model finds that cities with greater shares of metropolitan area population are predicted to keep gaining population over time. However school districts have a harmful effect on central cities and as they represent a greater proportion of the governing mix, population is likely to decline.

Dissimilarity and Political Fragmentation

The second model utilizes the Index of Dissimilarity between African-Americans and whites in the metropolitan area as the dependent variable. The index ranges from 0 to 1 and values indicate the proportion of the population which would need to move in order for the metro area to achieve integration. The model is built on the same fragmentation and control variables as the population change model. Horizontal fragmentation was measured using the natural log of the percent of the metropolitan area's population residing in the central city, the proportion of school districts to total governments in the metro area, and the log of an indexed variable, the density of governments. Vertical fragmentation is measured using Berry's (2009) measure of jurisdictional overlap and internal fragmentation is measured as the number of elected officials within the central city per capita (10,000). The natural log of spatial fragmentation is also included as a

general measure of fragmentation. Measures in the central city for the percent African-American, percent employed in manufacturing, the percent unemployed, and the percent of families in poverty are included as controls.

Table 5.2 shows the model diagnostics that informed my selection of the best fitting model for racial dissimilarity. The results of the Hausman test, which checks for the presence of statistically significant, city-specific time-invariant fixed effects not captured in the model (Wooldrige 2002) tests a null hypothesis of no city-specific effects. The null hypothesis was not rejected which means that a fixed-effects model is recommended. Using the fixed-effect model means that an estimated effect is figured for each city and included as a control in the model. The downside of including each city as control is the loss of degrees of freedom due to estimating an additional 100 coefficients. The upside is that this controls for statistically significant time-invariant differences between cities, i.e., institutionalized racism and segregation, history that matter more for the Index of Dissimilarity than for population density.

Table 5.2: Black-White Dissimilarity Index Model Diagnostics

Test	H_o	Statistics	Result: H_o
Hausman	Random over Fixed Effects	$X^2_{(15)} = 2,422.59$ $p = 0.000$	Rejected
Breusch-Pagan	Homoskedasticity	$X^2_{(17)} = 57.63$ $p = 0.000$	Rejected
Breusch-Godfrey/Wooldridge	No Serial Correlation	$X^2_{(1)} = 9.5$ $p = 0.002$	Rejected
LaGrange Multiplier	Significant Time-Fixed Effects	$F_{(5,440)} = 55.75$ $p = 0.00$	Rejected

In this model the assumption of homoskedasticity was violated indicating that there was heteroskedasticity. The null hypothesis of constant error variance was not rejected. The test for serial correlation was also violated and the null hypothesis was not rejected, meaning that the residuals are correlated across time within cities. For any given city in the sample, the best predictor for the value of its residual at time *t* is the value of its residual in the previous time period (time = *t*-1). The result of the violation is that the estimates for the coefficients are inefficient. To correct for violations of serial correlation and group-wise heteroskedasticity, a variance covariance matrix with robust standard errors was used to estimate the model in order to make the estimates more efficient. The Lagrange Multiplier tests a null hypothesis that there are no time-fixed effects was not accepted and so time-fixed effects are included in the model.

The results of the dissimilarity model are displayed in Figure 5.4 and are also shown in Table A5.2 in the appendix. The figure shows a plot of the coefficients with their confidence intervals as well as a vertical line at zero. Any variable whose confidence interval crosses through zero is not statistically significant. The percent of the metropolitan population in the central city, density of governments, proportion of school districts and percent African-American in the central city all have a positive and significant predicted effect on dissimilarity and percent employed in manufacturing in central cities has a significant negative effect on dissimilarity.

Figure 5.4: Black-White Dissimilarity Index Fixed-Effects Model Results.
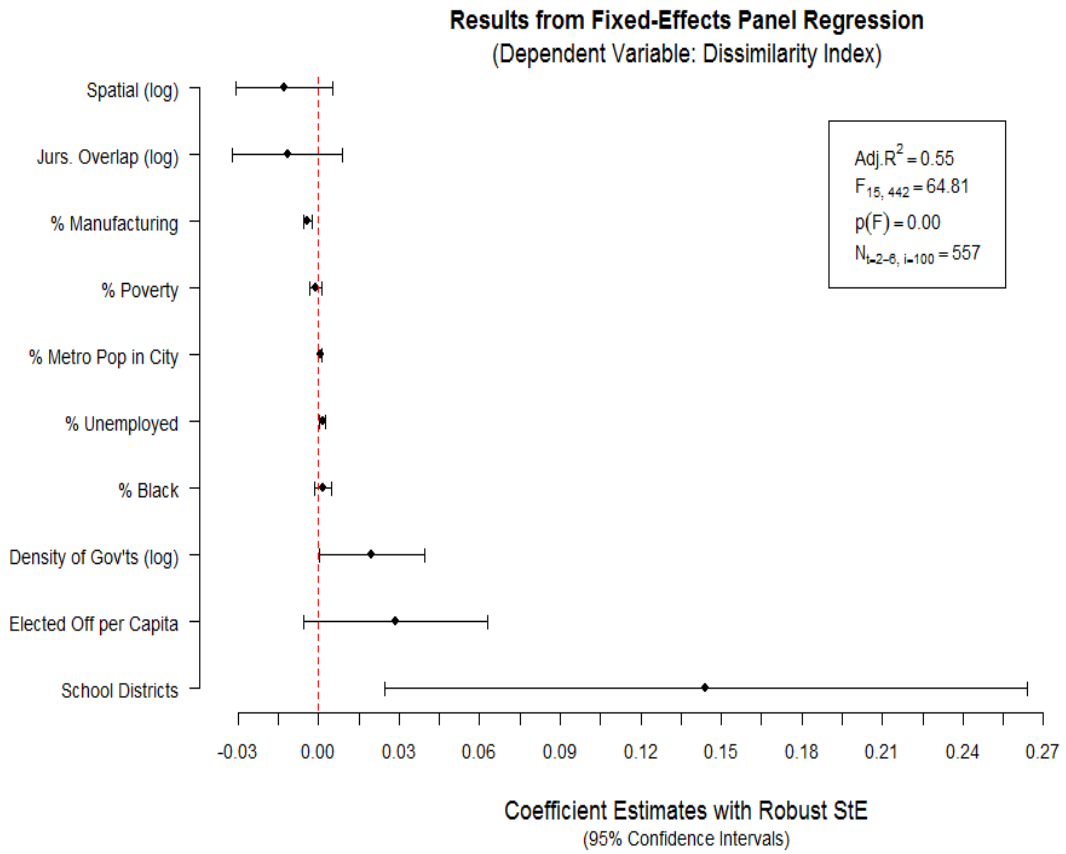
To further explore the effect size and substantive interpretation of the significant fragmentation measures have on dissimilarity, a series of plots are used to examine the predicted effects. The impact of density of governments, which is an index of the number of governments per capita and the number of municipalities per capita, is the first significant variable to be examined. Figure 5.5 shows a plot of the distribution of the density of governments in metropolitan areas and the first and third quartiles of government density are shown with vertical white lines. Plotted over the histogram is the predicted dissimilarity score across the range of government density while holding all other variables at their median and the year set to 1970. All else equal, increasing the governments around a central city is predicted to increase the dissimilarity score for the entire metropolitan area. As density of governments increases from the 25th to 75th percentile, racial dissimilarity increases from 0.80 to 0.82. While the size of the effect may seem small, what is implied is that according to this model, the typical metropolitan area would need for 80% of its residents to move in order to achieve racial integration. Having a greater number of governments, particularly municipal governments seems to increase segregation in metropolitan areas.

Figure 5.5: Predicted Metropolitan Area Dissimilarity Index Score Across the Range of Government Density. Plotted is the distribution of the density of governments in metropolitan areas which is an indexed variable comprised of the number of governments per capita (10,000) and the number of municipalities per capita (10,000). The natural log of government density is modeled but the actual values are shown along with the first and third quartiles which are indicated by the vertical white lines. Plotted over the histogram is the predicted dissimilarity score across the range of government density while holding all other variables at their median and the year set to 1970. All else equal, increasing the governments around a central city is predicted to increase the dissimilarity score for the entire metropolitan area.
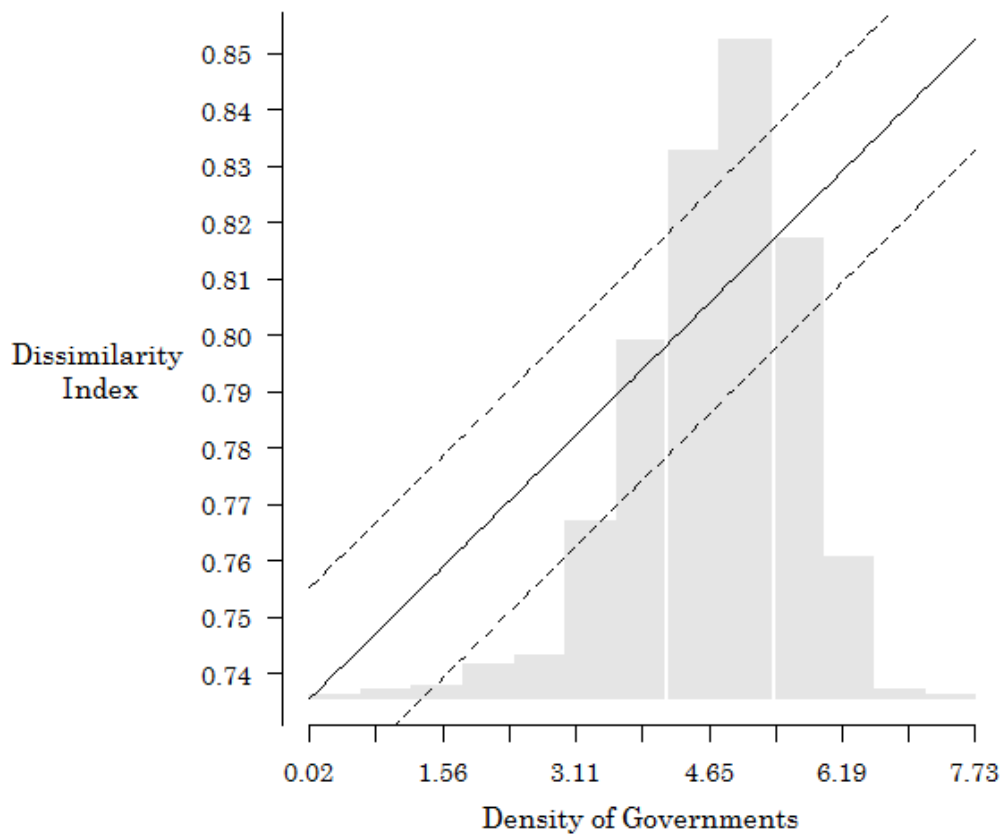
The second significant fragmentation measure, the percent of a metropolitan area living in the central city, is also an indication of horizontal fragmentation and was significant in the population change model. Figure 5.6 shows a histogram of the percent metro area population living in the central city in gray with the first and third quartiles marked by vertical white lines. Plotted over the histogram is the predicted dissimilarity score across the range of the percent of metropolitan population living in the central city. All things equal, as a city's share of the metropolitan area population increases, the predicted dissimilarity index score also increases. As the city's share of metropolitan area population increases from the 25th percentile to the 75th percentile, 16% to 54% of metro area population, dissimilarity increases from 0.80 to 0.82. As with governing density, this implies that the typical metropolitan area would need 80% of its population to move in order to achieve racial integration between African-American and white residents. Also noteworthy is that while holding all things constant, *the model predicts metropolitan areas to be highly segregated as indicated by the range of dissimilarity* in Figure 5.6 (0.79 - 0.85) and this is consistent with the effect of governing density on dissimilarity. Since the data is aggregated at the metropolitan level it is not possible to say where within the region minorities are residing but studies such as those done by Orfield (2002) suggest that in a typical metro area minorities reside primarily in the central city and inner-ring suburbs. Cities which have a greater share of metropolitan population seem to have more regional segregation .

Figure 5.6: Predicted Metropolitan Area Dissimilarity Score Across the Range of the Percent of a Metropolitan Area in Central City. A histogram of the percent metro area population living in the central city is shown in gray with the first and third quartiles marked by vertical white lines. Plotted over the histogram is the predicted dissimilarity score across the range of the percent of metropolitan population living in the central city. All things equal, as a city's share of the metropolitan area population increases, the predicted dissimilarity index score also increases.
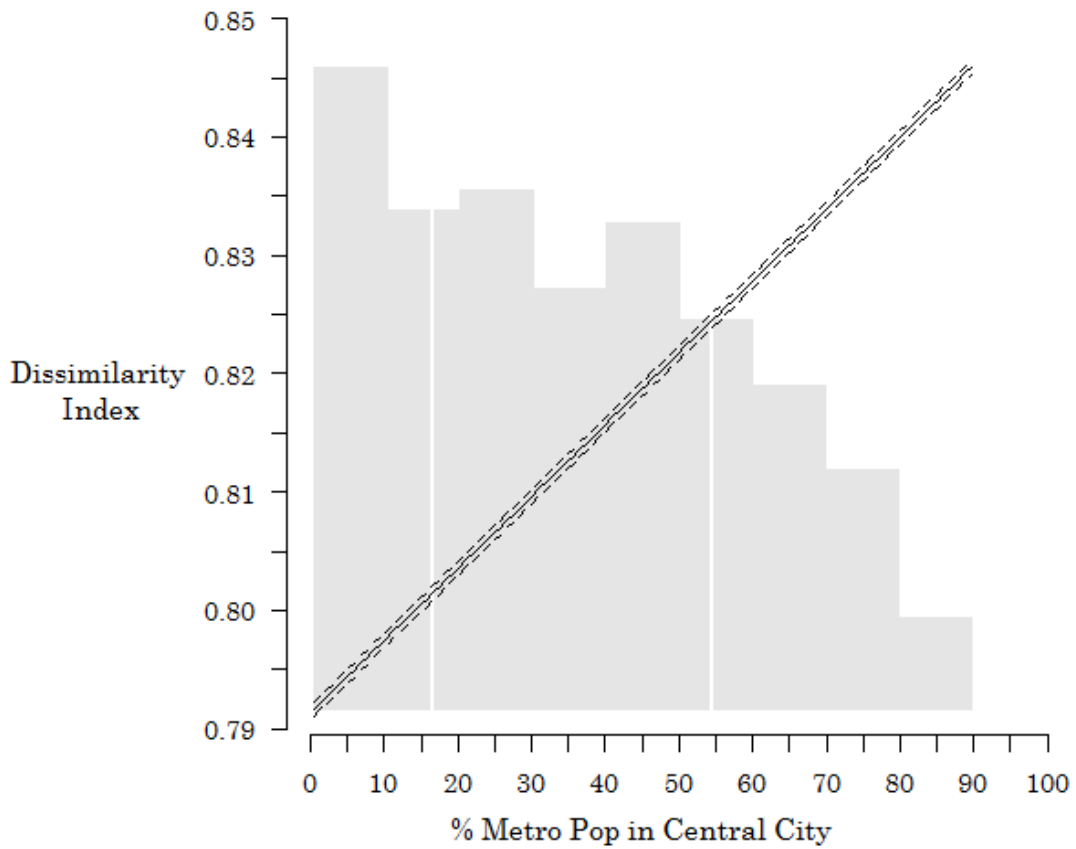
The third and final significant fragmentation measure on dissimilarity is the proportion of school districts of total governments in a metropolitan area. Figure 5.7 shows a histogram of proportion of school districts of total governments in metropolitan areas with the first and third quartiles denoted with vertical white lines. Overlaid the histogram is the predicted dissimilarity score across the range of proportion school districts holding all other variables at their medians and year set to 1970. The 95% confidence interval is shown by the dashed lines. All things equal, increasing the proportion of school districts in a metropolitan area is predicted to increase the dissimilarity index score for the metro area. As the proportion of governments in a metro area that are school districts increases from the 25th (0.12) to the 75th percentile (0.28), dissimilarity increases from 0.80 to 0.82 across the metro. The impact of school districts on racial segregation suggests that it is not just the number of governments in a metropolitan area that matters, but also the types of government. In this case of this model, having more school districts in relation to other governments, increases segregation which is troubling given evidence that school segregation drives disparate outcomes in student achievement (Condron, Tope, Steidl, Freeman 2013). Having more school districts in a metropolitan area increases the amount of segregation in that region.

Figure 5.7: Predicted Metropolitan Area Dissimilarity Index Score Across the Range of the Proportion of School Districts to Total Governments. Plotted is a histogram of proportion of school districts of total governments in metropolitan areas with the first and third quartiles denoted with vertical white lines. Overlaid the histogram is the predicted dissimilarity score across the range of proportion school districts holding all other variables at their medians and year set to 1970. The 95% confidence interval is shown by the dashed lines. All things equal, increasing the proportion of school districts in a metropolitan area is predicted to increase the dissimilarity index score for the metro area.
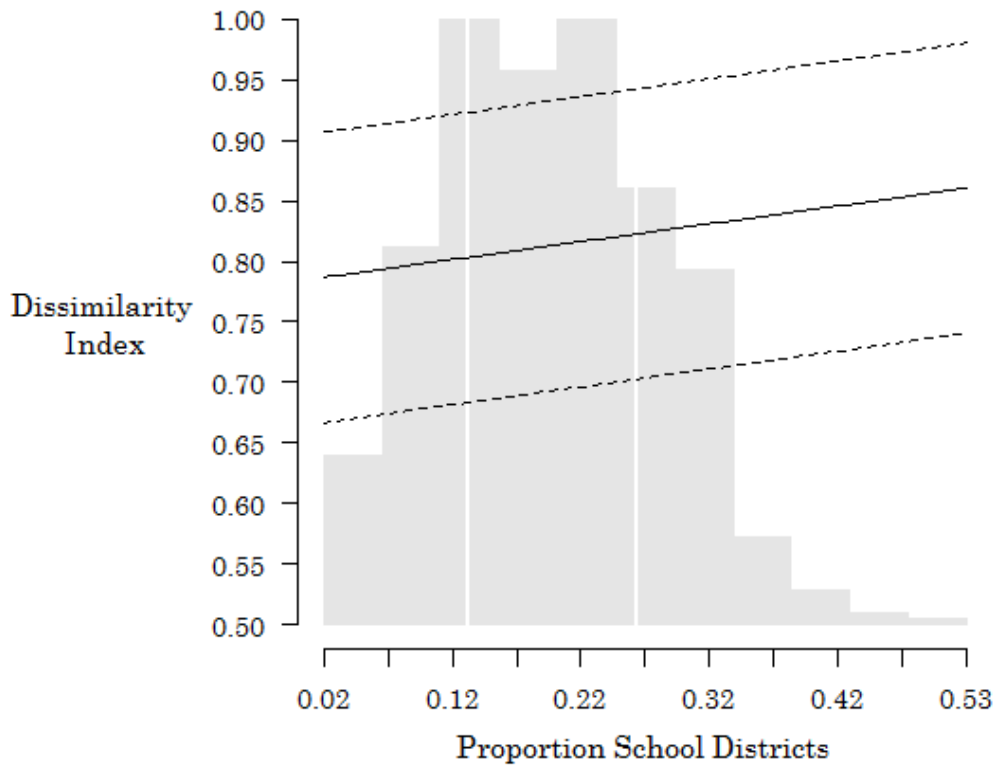
Own-Source Revenue and Political Fragmentation

The third model considered the impact of political fragmentation on own-source revenue in central cities. Own-source revenue is an indication of the revenue generating power of cities from their own tax and fee collection and reflects the general tax burden born by residents. The values are per capita and CPI adjusted to year 2000 dollars, the median value is $984 but the standard deviation is $1,006. The data is skewed right which is common for income measures. The natural log of own-source revenue was used as the dependent variable in this model and the transformation created a normalized distribution with a mean value of 6.85 and a standard deviation of 0.7. Determining the best model fit was the same for the previous models and the results of the tests are shown in Table 5.3. The first diagnostic test was the Hausman and the results supported using the fixed-effects model over the random effects. The Breusch-Pagan test looks for homoskedasticity and in this model the null hypothesis was not rejected, meaning that this model did not violate the assumption of constant variance in the standard errors.

Table 5.3: Own-Source Revenue Model Diagnostics

Test	H_o	Statistics	Result: H_o
Hausman	Random over Fixed Effects	$X^2_{(17)} = 107.37$ $p = 0.000$	Rejected
Breusch-Pagan	Homoskedasticity	$X^2_{(19)} = 29.03$ $p = 0.07$	Not Rejected
Breusch-Godfrey/Wooldridge	No Serial Correlation	$X^2_{(1)} = 0.17.86$ $p = 0.00$	Rejected
LaGrange Multiplier	Significant Time-Fixed Effects	$F_{(5,469)} = 45.81$ $p = 0.00$	Rejected
Pesaran	No Cross-Sectional Dependence	$Z = -0.9$ $p = 0.37$	Not Rejected

The third diagnostic test, the Breusch-Godfrey/Wooldridge test looks for serial correlation in the residuals and for this model the null hypothesis was not accepted meaning that for any given city, the best predictor for its residual at time t is the residual in the previous time period (time $= t-1$). To improve the statistical efficiency of the estimated coefficients a variance covariance matrix was estimated to make the estimates more efficient. The last two diagnostic tests consider the effects of time and in the case of the Lagrange Multiplier test the effect is significant. This indicates there are significant differences across the time periods and so time-fixed effects are included in the own-source revenue model. The final diagnostic, the Pesaran test, looks for cross-sectional dependence which if present would mean that the residuals are correlated within time periods across the cities. The null hypothesis of no cross-sectional dependence was not rejected so within time correlations are not a problem at this time.

The results of political fragmentation and own-source revenue are presented in Figure 5.8 and also shown in Table A5.3. Figure 5.14 plots the coefficients as points with their 95 percent confidence intervals as horizontal lines extending through them. In this model the statistically significant variables are ones that do not cross the vertical line at zero. The percent of the metropolitan area residing in the city limits has a negative effect on own-source revenue whereas jurisdictional overlap, the proportion of the metropolitan area that is municipalities, the elected official per capita in central cities, the percent African-American, the percent employed in manufacturing, and median family income in central cities are all positive.

Figure 5.8: Own-Source Revenue Fixed-Effects Model Results
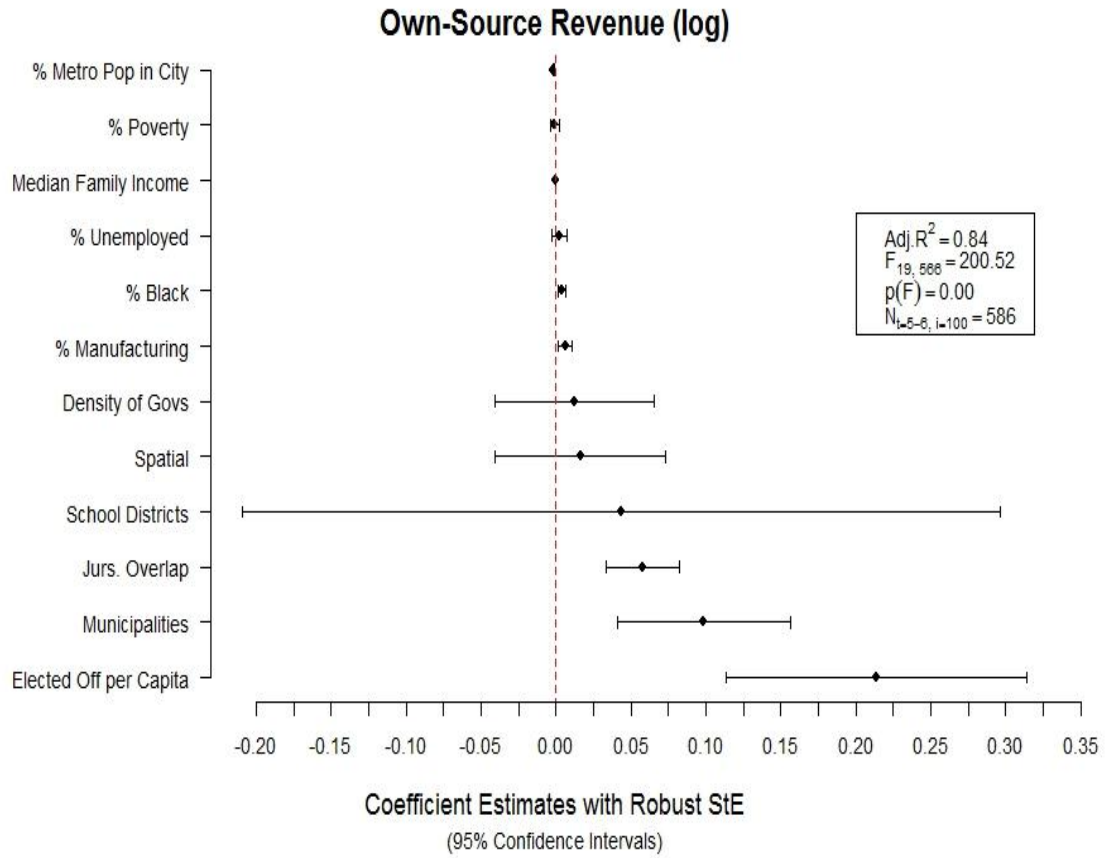
Own-Source Revenue (log)

To further explore the effect size and substantive interpretation of the significant

fragmentation measures on own-source revenue, a series of plots are used to examine the

predicted effects. Figure 5.9 is the first of the four significant fragmentation measures and

shows the distribution of the percent of metropolitan areas living in central city with the

first and third quartiles noted with white vertical lines. Plotted over the histogram is the

predicted own-source revenue score for the metropolitan area across the range of percent

metropolitan area in the central city. The 95% confidence interval is shown by the dashed

lines. All things equal, increasing the city's share of the metropolitan area population

decreases the own-source revenue for the central city. As the city's share of population

moves from the 25th to the 75th percentile, 16% to 54% of metro area population own-

source revenue is predicted to decrease from $846 dollars per capita to $799. Essentially

the more individuals who live in the central city, the model predicts would experience

less of a tax burden than cities with a smaller share of the population. Cities that have a

greater share of the metropolitan population have a smaller own-source revenue per

capita, meaning that city residents pay less in taxes.

Figure 5.9: Predicted Own-Source Revenue Across the Range of Percent of Metropolitan Area in Central City. The graph shows the distribution of the percent of metropolitan areas living in central city with the first and third quartiles noted with white vertical lines. Plotted over the histogram is the predicted own-source revenue score for the metropolitan area across the range of percent metropolitan area in the central city. The 95% confidence interval is shown by the dashed lines. The log of own-source revenue is used in the model but actual dollar values are shown. All things equal, increasing the city's share of the metropolitan area population decreases the own-source revenue for the central city.
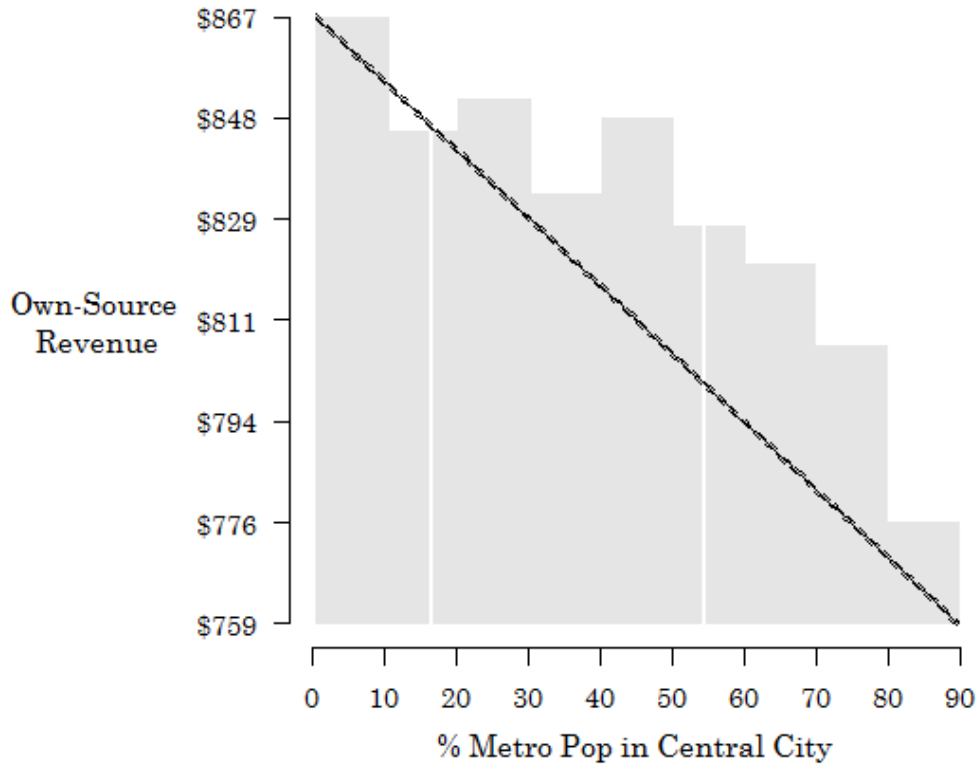
The next significant fragmentation measure considered is the proportion of total governments in a metro area which are municipalities. Figure 5.10 shows in gray a histogram of the proportion of municipal governments of total governments in the metro area with the first and third quartiles marked with vertical white lines. Drawn over this is the predicted own-source revenue across the range of the municipality's proportion of total governments while holding all other variables at their medians and year set to 1970. In the model both own-source revenue and municipalities are logged but what is shown is actual values. All things equal increasing the proportion of municipal governments to all other governments in a metropolitan area increases the central city's own-source revenue. As the proportion of municipalities increases from the 25th percentile (0.11) to the 75th percentile (0.27) revenues are predicted to increase from $784 to $855 per capita. This is evidence that the governing arrangements around a central city, particularly at the municipal level, have a direct impact on the city. What is suggested by the relationship here, is that it costs more for city residents - they bear a higher tax burden - when the surrounding metropolitan area has a higher proportion of municipalities to total governments. Cities surrounded by more municipal governments may need to levy higher taxes to increase their own-source revenues.

Figure 5.10: Predicted Central City Own-Source Revenue Across the Range of the Proportion Municipal Governments of Total Governments in Metropolitan Areas.
The plot shows in gray a histogram of the proportion of municipal governments of total governments in the metro area with the first and third quartiles marked with vertical white lines. Drawn over this is the predicted own-source revenue across the range of the municipality's proportion of total governments while holding all other variables at their medians and year set to 1970. In the model both own-source revenue and municipalities are logged but what is shown is the actual values. shown are actual values. All things equal increasing the proportion of municipal governments to all other governments in a metropolitan area increases the central city's own-source revenue.
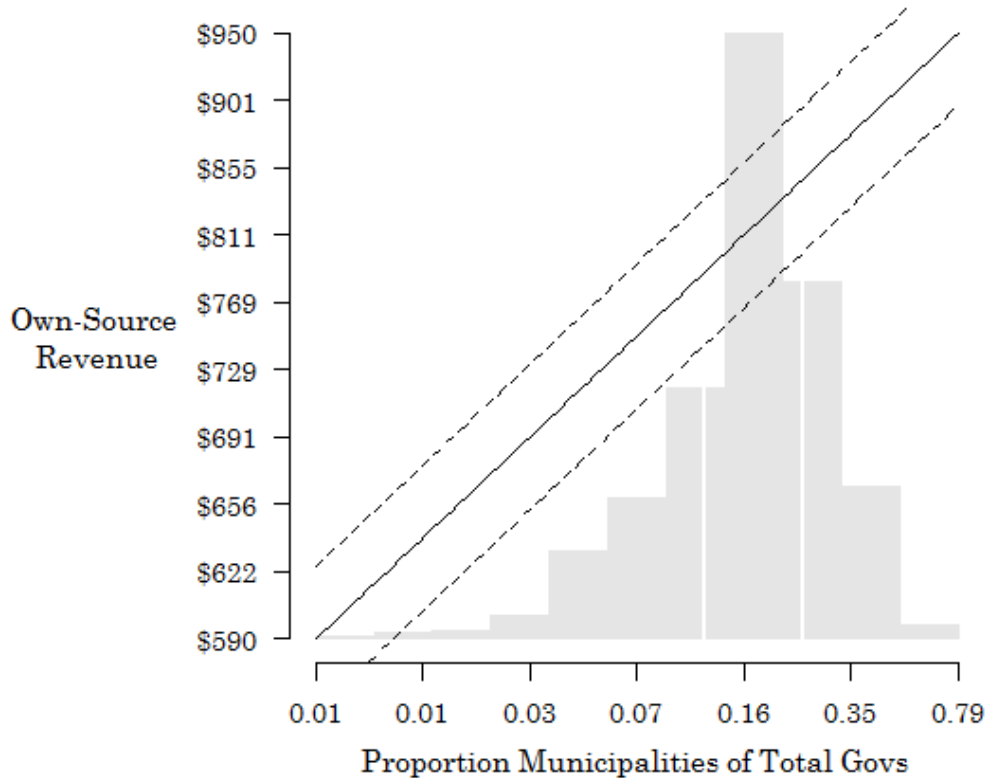
The next fragmentation measure to have a significant relationship with own-source revenue is the number of elected officials per capita in the central city. This is the first and only model where this variable was significant. Figure 5.11 shows a histogram of the distribution of the number of elected officials per capita in gray with the first and third quartiles noted by the vertical white lines. Overlaid is the predicted own-source revenue across the range of elected officials per capita with the 95% confidence interval. The log of city own-source revenue is modeled but the actual dollar values are shown. Holding all other variables at their medians and year set to 1970, increasing the number of elected officials per capita in the central city is predicted to increase its own-source revenue. Moving from the 25th to the 75th percentile in the number of elected officials per 10,000 residents is predicted to increase own-source revenue from $792 to $883 per capita. Implied here is that cities with fewer elected officials will have a lower tax burden. The impact of elected officials on city outcomes is a relatively understudied measure of fragmentation and this model suggests that it is an area worth further investigation. Cities with more elected officials seem to have a higher tax burden per capita.

Figure 5.11: Predicted Own-Source Revenue Across the Range of Elected Officials per Capita (10,000) in Central Cities. A histogram showing the distribution of the number of elected officials per capita is shown in gray with the first and third quartiles noted by the vertical white lines. Overlaid is the predicted own-source revenue across the range of elected officials per capita with the 95% confidence interval. The log of city own-source revenue is modeled but the actual dollar values are shown. Holding all other variables at their medians and year set to 1970, increasing the number of elected officials per capita in the central city is predicted to increase its own-source revenue.
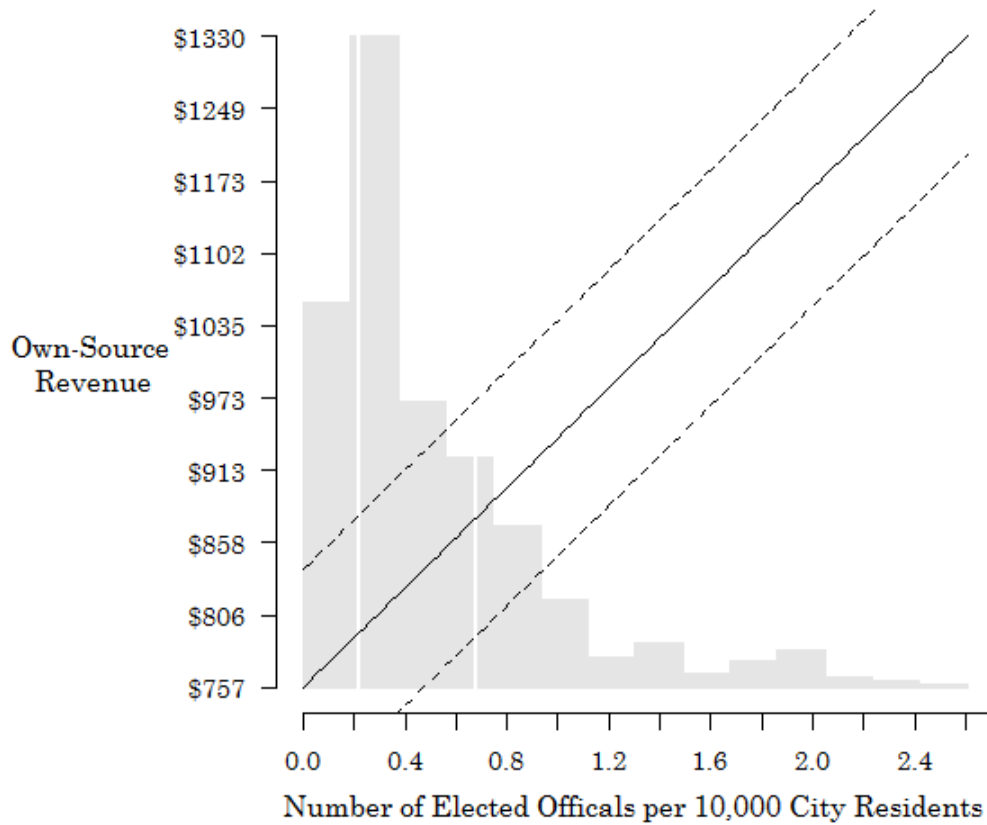
The final significant fragmentation measure is jurisdictional overlap which is the variable based off of the work of Berry (2009) and aims to isolate the impact of vertical fragmentation on own-source revenue. The plot in Figure 5.12 shows a histogram of the distribution of jurisdictional overlap in metro areas with its first and third quartiles noted by white vertical lines. Superimposed is the predicted own-source revenue across the range of jurisdictional overlap with the 95% confidence interval. Own-source revenue and jurisdictional overlap are both modeled using their natural log but actual values for these variables are shown in the graph. Holding all other variables to their medians and year set to 1970 increasing the amount of jurisdictional overlap in a metropolitan area increases the own-source revenue for the central city. As jurisdictional overlap increases from the 25th (1.6) to the 75th (4.2) percentile, own-source revenue is predicted to increase from $802 to $850 per capita. This finding is in-line with Berry's, though his work was at the county level, and this further suggests that the governing arrangements and the levels and types of fragmentation that exist in a metropolitan area matter and have a direct impact on the central city. In this case, the model suggests that all else equal, city residents have a higher tax burden in regions where there is greater levels of vertical fragmentation. Residents appear to have to pay more in taxes for living in the central city when there is greater amounts of vertical fragmentation in the region.

Figure 5.12: Predicted Own-Source Revenue in Central Cities Across the Range of Jurisdictional Overlap in Metropolitan Areas. The plot shows a histogram of the distribution of jurisdictional overlap in metro areas with its first and third quartiles noted by white vertical lines. Superimposed is the predicted own-source revenue across the range of jurisdictional overlap with the 95% confidence interval. Own-source revenue and jurisdictional overlap are both modeled using their natural log but actual values for these variables are shown in the graph. Holding all other variables to their medians and year set to 1970 increasing the amount of jurisdictional overlap in a metropolitan area increases the own-source revenue for the central city.
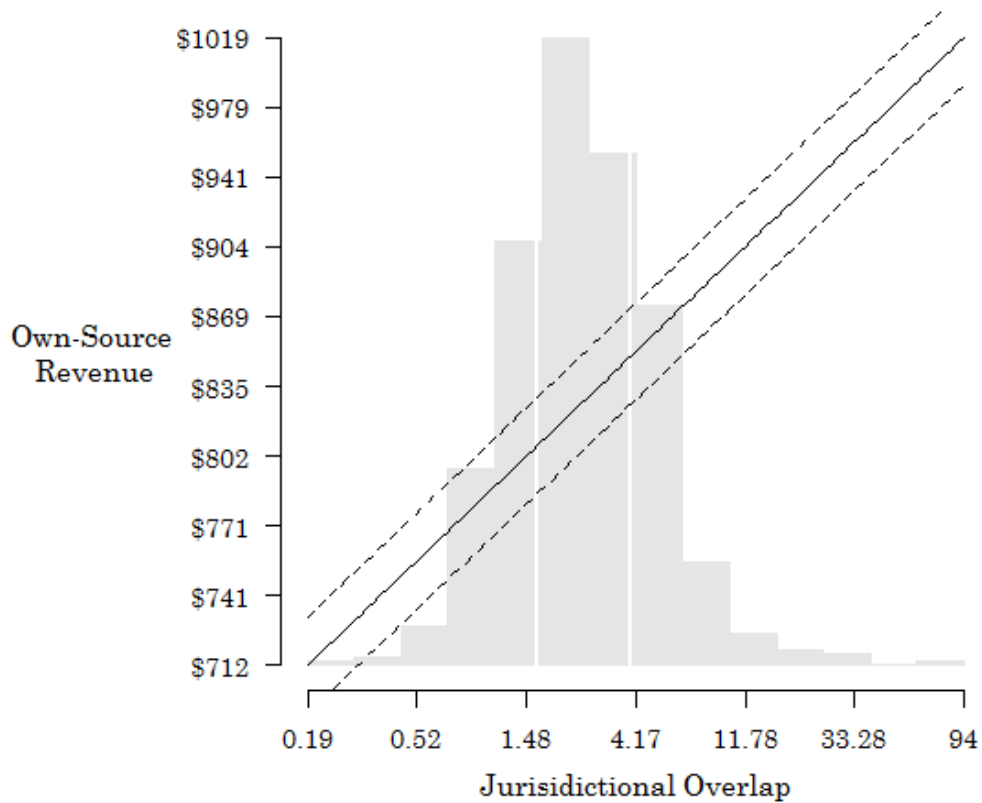
Summary

Overall the model results are in line with many of the hypotheses proposed at the start of the chapter, but there were also some unexpected results. Three models were estimated to investigate the impact of political fragmentation (horizontal, vertical and internal) on central city population change, black-white dissimilarity across the metropolitan area and own-source revenue for the central city. A fourth model was also estimated for black-white isolation across the metro area but the results were minimal and are presented in the following appendix.

The first hypothesis considered the impact of horizontal fragmentation on population change in central cities over time. Though most of the fragmentation indicators were not significant, the proportion of school districts of total governments in a metropolitan area and the percent of the metro population in the central city did impact whether city populations change. Cities that had a larger share of the region's population were predicted to grow in population from the previous census year. The proportion of school districts to other governments has a negative effect on population change. The model predicts that cities would lose population between census years as the proportion of school districts increases. This supports the hypothesis and is evidence that horizontal fragmentation in the metropolitan area does impact the central city.

The second hypothesis considered the impact of segregation and political fragmentation. Horizontal fragmentation was expected to increase segregation between African-Americans and whites within metropolitan areas and the model estimated confirmed this. The government density index and the proportion school districts are two

measures of horizontal fragmentation that had a significant and positive impact on segregation. Metropolitan areas where there were more governments and where school districts made up a higher proportion of total governments also had higher levels of segregation. These results are troubling because, while minorities are no longer only concentrated in a region's core city, the results indicate that at least for the metropolitan areas in this sample, governments, particularly school districts are racial dividing lines.

The third hypothesis considered the impact of vertical fragmentation, measured as jurisdictional overlap, on central city own-source revenue. The results of the own-source revenue model are in line with work by Berry (2009) and reveal that the governing arrangements surrounding a central city do have an impact on the tax burden borne by city residents. Jurisdictional overlap was a positive and significant factor in own-source revenue, which is the income brought in to city coffers through taxes and fees. An unexpected finding was the relationship between the proportion of municipal governments in the metropolitan area and central city own-source revenues. Cities which have higher numbers of municipalities relative to other governments were shown to have higher own-source revenue. In other words, city residents are predicted to have a higher tax burden as the proportion of municipal governments increases. This shows that not only does horizontal fragmentation impact the central city, but vertical fragmentation in metropolitan areas does as well.

The last hypothesis looked at the role of internal fragmentation on city outcomes. In the population change and segregation models internal fragmentation was not significant. However, the own-source revenue model did show a significant relationship. As the number of elected officials increases in the central city, so too does the tax burden

for city residents. The role of elected officials on city revenues has not been widely examined but fits within a broader narrative that better, more efficient governments have fewer elected officials per capita and that older, less progressive city governments would have more elected officials. The findings in this model suggest that there is a direct and perhaps understudied, link between elected officials and the tax burden borne by city residents.

Appendix: Chapter 5

Racial Isolation and Political Fragmentation

A fourth model examining the relationship between political fragmentation and racial isolation was also estimated but the results did not yield much and so are presented here within the Appendix. The Isolation Index between African-Americans and whites at the metropolitan level (and unlike the dissimilarity index which considers the degree to separation between the races), the Isolation Index measures the amount of exposure one group has to only members of the same group (Massey and Denton 1988, 288). The index ranges from 0 - 1 where 0 is no exposure to others outside of your racial group and 1 is perfect exposure to others of another race. The exposure of African-Americans to white residents considers the degree of possible contact or interaction between the racial groups and the same group of political fragmentation variables are modeled to estimate their ability to predict levels of isolation. In addition variables controlling for the percent African-American, percent employed in manufacturing, percent unemployed, percent of families in poverty, median family income in central cities and the proportion of municipalities to other governments are included.[16]

The same cadre of diagnostic tests are used to evaluate model fit for racial isolation. Table A5.1 shows the model diagnostics that informed my selection of the best fitting model for racial isolation. The null hypothesis for the Hausman test was not accepted which means that a fixed-effects model is recommended. Using the fixed-effect model means that an estimated effect for each city is included as a control in the model. The second and third tests are designed to test assumptions about the behavior of

residuals in longitudinal models. The Breusch-Pagan null hypothesis tests for constant

error variance or homoskedasticity in the residuals. In this model the assumption of

homoskedasticity was violated indicating that there was heteroskedasticity which means

the standard errors for the coefficients are biased downwards, leading to ascribing

statistical significance to variables that are not significant (Wooldridge 2002). In the third

test, the Breusch-Godfrey/Wooldridge test for serial correlation, the null hypothesis was

not rejected meaning that the residuals are not correlated across time within cities. To

correct for violations of heteroskedasticity a variance covariance matrix with robust

standard errors was used to estimate the model in order to make the estimates more

efficient.

Table A5.1: Isolation Index Model Diagnostics

Test	H_o	Statistics	Result: H_o
Hausman	Random over Fixed Effects	$X^2_{(16)} = 85.75$ $p = 0.000$	Rejected
Breusch-Pagan	Homoskedasticity	$X^2_{(18)} = 51.37$ $p = 0.000$	Rejected
Breusch-Godfrey/Wooldridge	No Serial Correlation	$X^2_{(1)} = 1.31$ $p = 0.25$	Not Rejected
LaGrange Multiplier	Significant Time-Fixed Effects	$F_{(-)} = --$ $p = --$	--
Pesaran	No Cross-Sectional Dependence	$Z = --$ $p = --$	--

The fourth diagnostic tests look for significant time-fixed effects. The Lagrange

Multiplier's null hypothesis is that there are no time-fixed effects and this was not

rejected. To account for time-fixed effects dummy a factor variable for time is included

in the model. The final diagnostic test, the Pesaran test of cross-sectional dependence

looks to see if residuals are correlated within time periods across cities. The inclusion of time-fixed effects helps to avoid cross-sectional dependence and the null hypothesis for the Pesaran test was not rejected.

Figure A5.1 plots the estimated coefficients with their confidence intervals and Table A5.2 shows the coefficient values with their standard error and model fit statistics. Lagging the independent variables on racial isolation was found to produce the more efficient estimates and model fit. Using the lag of a variable allows us to see the predicted effect of racial isolation based off of the previous census decade's data. The downside to lagging variables is the loss of observations, in this case 100 observations are dropped and prediction for isolation begin with 1960 and go through 2000. Like dissimilarity, the isolation index is a residential measure and population shifts, such as racial sorting along residential boundaries, may take additional time before their effect is significant. For the coefficients plotted on Figure A5.1, any variable whose confidence interval crosses through zero is not statistically significant. In this model the lagged log of the density of governments and the lag for percent unemployed in the central city have a positive and significant impact on racial isolation. The lag for percent employed in manufacturing in central cities has a significant negative effect on isolation.

Figure A5.1: Fixed-Effects Model Results for Black-White Isolation Index with Lagged Independent Variables

Results from Fixed Effects Panel Regression
(Dependent Variable: Isolation Index)

Density of Govs (log)
% Manufacturing
% Metro Pop in City
Median Family Income
% Unemployed
% Black
% Poverty
Jurs. Overlap (log)
Elected Off per Capita
Spatial (log)
Municipalities (log)
School Districts

Adj.R^2 = 0.48
$F_{16,\,376}$ = 41.4
$p(F)$ = 0.00
$N_{t=2-5,\,i=100}$ = 492

-0.05   0.00   0.05   0.10   0.15   0.20   0.25   0.30

Coefficient Estimates with Robust StE
(95% Confidence Intervals)
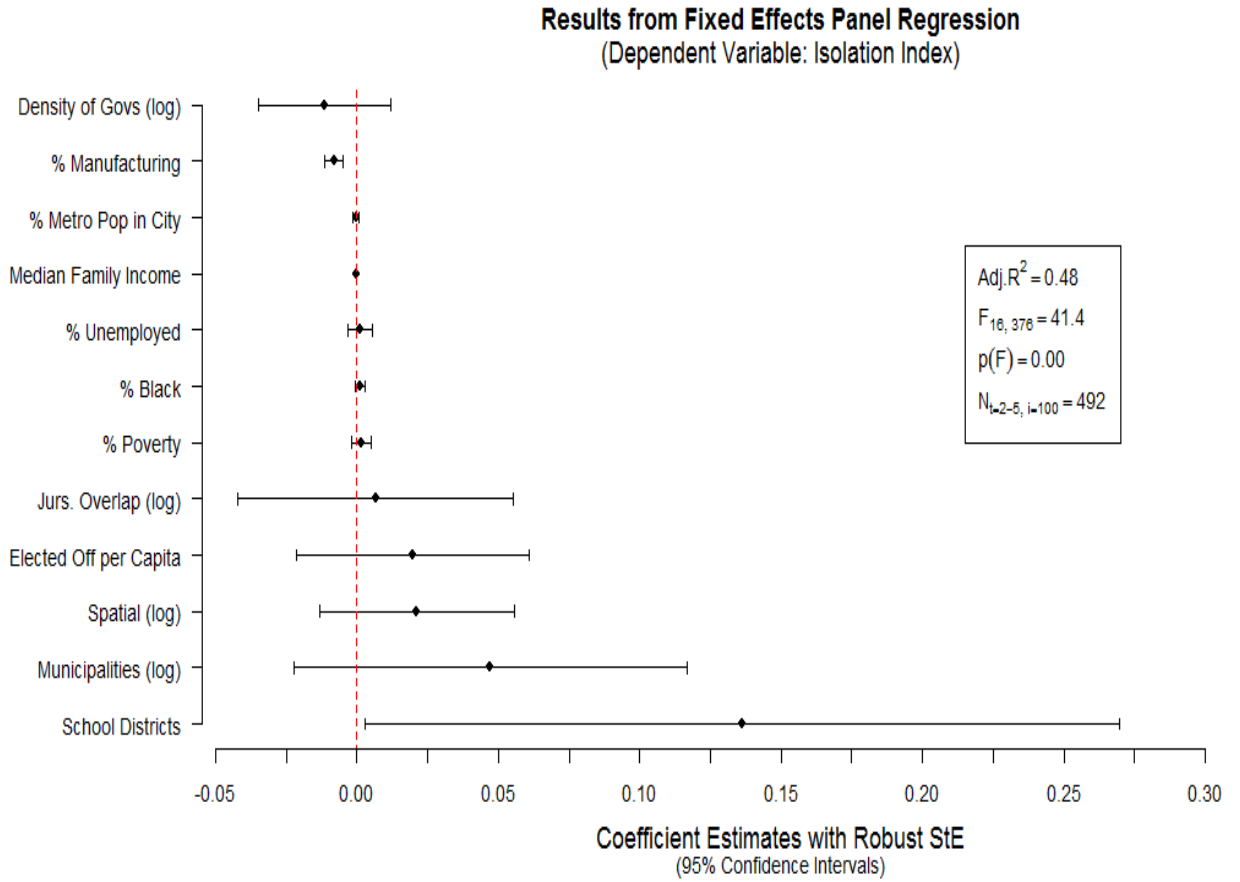
Table A5.2: Black-White Isolation Index with Lagged Independent Variables Fixed-Effects Model Results

(Dependent Variable = Black-White Isolation Index)	
Model	
Lagged % Metro Pop in City (log)	-0.001 (0.002)
Lagged Density of Governments (log)	**0.44***** (0.008)
Lagged School Districts	0.11 (0.4)
Lagged Jurisdictional Overlap (log)	0.152 (0.116)
Lagged Elected Officials per Capita	0.098 (0.091)
Lagged Spatial Fragmentation (log)	-0.013 (0.009)
Lagged % African-American	-0.002 (0.004)
Lagged % Manufacturing	**-.012*** (0.006)
Lagged % Unemployed	**0.045**** (0.014)
Lagged % Families in Poverty	-0.001 (0.001)
Lagged Median Family Income	0.000008 (0.000007)
Lagged Municipalities	-0.024 (0.15)
Adj. R^2	0.47
$F(15, 382)$	39.01
$p < F$	0.000
N	497 (i = 100, t = 4-5)

Time-fixed effects significant and negative (not shown).

*p < 0.05, ** p < 0.01, *** p < 0.001 Robust standard errors in parentheses.

Density of governments is measured by indexing the total number of governments per capita and the number of municipalities per capita for each metropolitan area. The coefficient value of 0.44 shows that increasing government density in year one is predicted to increase isolation between African-Americans and white residents in the following census year. This supports the hypothesis that racial isolation is residentially driven and that horizontal political fragmentation that increases residential choice decreases the exposure of African-Americans to whites. Increases in the number of governments has a positive and significant effect on segregation.

Table A5.3: Central City Population Change Model Results for Random Effects with Heteroskedasticity and Serial Correlation Robust Standard Errors

(Dependent Variable = Percent Population Change in Central Cities, natural log)	
Model	
Density of Governments (log)	0.02 (0.02)
% Metro Pop in City (log)	**0.001**** (0.0005)
School Districts	**0.28*** (0.13)
Jurisdictional Overlap (log)	0.004 (0.01)
Elected Officials per Capita	-0.012 (0.012)
Spatial Fragmentation (log)	**-0.034*** (0.016)
% African-American	**-0.002**** (0.001)
% Manufacturing	-0.002 (0.001)
% Unemployed	-0.01 (0.003)
% Families in Poverty	0.0003 (0.002)
Rustbelt	-0.035 (0.023)
Sunbelt	**0.123***** (0.02)
Adj. R^2	0.41
$F(17, 571)$	24.83
$p < F$	0.00
N	589 (i = 100, t = 4-6)

Time-fixed effects significant and negative (not shown).

$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ Robust standard errors in parentheses.

Table A5.4: Black-White Dissimilarity Index Fixed-Effects Model Results

(Dependent Variable = Black-White Dissimilarity Index)	
Model	
% Metro Pop in City (log)	**0.001***
	(0.0003)
Density of Governments (log)	**0.02***
	(0.01)
School Districts	**0.142***
	(0.061)
Jurisdictional Overlap (log)	-0.011
	(0.01)
Elected Officials per Capita	0.028
	(0.018)
Spatial Fragmentation (log)	-0.013
	(0.009)
% African-American	**0.002***
	(0.001)
% Manufacturing	**-0.004*****
	(0.001)
% Unemployed	0.001
	(0.001)
% Families in Poverty	-0.001
	(0.001)
Adj. R^2	0.55
$F(15, 442)$	64.81
$p < F$	0.000
N	557 (i = 100, t = 2-6)

Time-fixed effects significant 1960 and 1970 are positive; 1980-2000 are negative (not shown).

*p < 0.05, ** p < 0.01, *** p < 0.001 Robust standard errors in parentheses.

Table A5.5: Own-Source Revenue Fixed-Effects Model Results

(Dependent Variable = Own-Source Revenue, natural log)	
Model	
% Metro Pop in City (log)	**-0.001*****
	(0.0003)
Density of Governments (log)	0.01
	(0.03)
School Districts	0.04
	(0.4)
Jurisdictional Overlap (log)	**0.058*****
	(0.012)
Municipalities	**0.099*****
	(0.029)
Elected Officials per Capita	**0.214*****
	(0.051)
Spatial Fragmentation (log)	0.016
	(0.029)
% African-American	**0.004*****
	(0.001)
% Manufacturing	**0.006***
	(0.002)
% Unemployed	0.002
	(0.002)
% Families in Poverty	-0.0008
	(0.001)
Median Family Income	**0.000009***
	(0.000003)
Adj. R^2	0.84
$F(19, 566)$	200.52
$p < F$	0.000
N	586 (i = 100, t = 5-6)

Time-fixed effects significant and positive (not shown).
$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ Robust standard errors in parentheses.

Figure A5.2: Variance Inflation Factor for Population Density, Dissimilarity Index, Racial Isolation Index and Own-Source Revenue Models. The dotted line represents a VIF score of 4 and in each of the models, all of the independent variables are below the limit.

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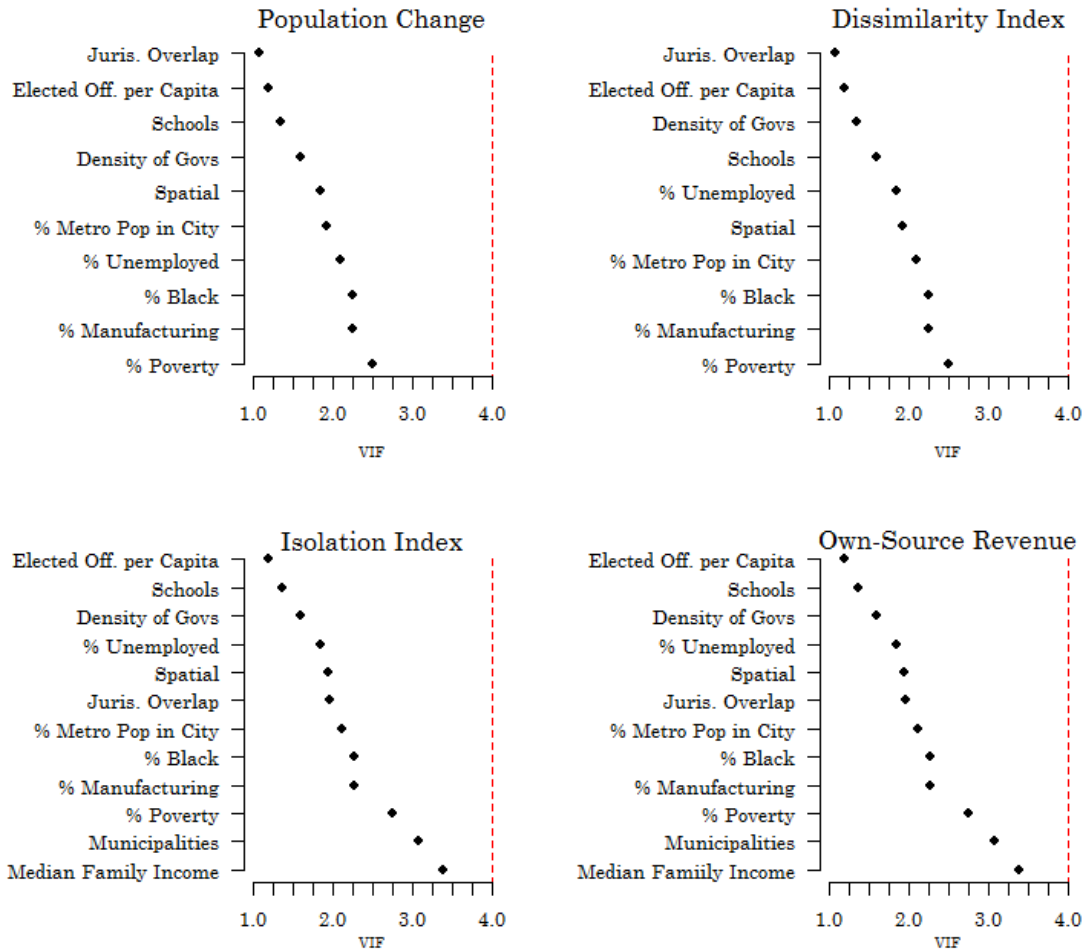
[16] The measurements of median family income and proportion of municipalities of total government were not included in the population density and racial dissimilarity models due to high variance inflation factor scores. Figure 5.5 shows the spread of VIF scores across all four models.

Notes for Chapter 5

[1] Rustbelt cities and states: Bridgeport, Connecticut; Hartford, CT; New Haven, CT; Chicago, Illinois; Peoria, IL; Evansville, Indiana; Fort Wayne, IN; Gary, IN; Indianapolis, IN; South Bend, IN; Des Moines, Iowa; Boston, Massachusetts; Cambridge, MA; Fall River, MA; New Bedford, MA; Springfield, MA; Worcester, MA; Detroit, Michigan; Flint, MI; Grand Rapids, MI; Minneapolis, Minnesota; St. Paul, MN; St. Louis, Missouri; Omaha, Nebraska; Camden, New Jersey; Elizabeth, NJ; Newark, NJ; Paterson, NJ; Trenton, NJ; Albany, New York; Buffalo, NY; New York, NY; Rochester, NY; Syracuse, NY; Yonkers, NY; Akron, Ohio; Canton, OH; Cincinnati, OH; Cleveland, OH; Columbus, OH; Dayton, OH; Toledo, OH; Youngstown, OH; Allentown, Pennsylvania; Erie, PA; Philadelphia, PA; Pittsburgh, PA; Reading, PA; Scranton, PA; Providence, Rhode Island; Milwaukee, Wisconsin. Sunbelt cities and states: Birmingham, Alabama; Mobile, AL; Montgomery, AL; Phoenix, Arizona; Berkeley, California; Long Beach, CA; Los Angeles, CA; Oakland, CA; Sacramento, CA; San Diego, CA; San Francisco, CA; Jacksonville, Florida; Miami, FL; Tampa, FL; Atlanta, Georgia; Savannah, GA; Baton Rouge, Louisiana; New Orleans, LA; Shreveport, LA; Charlotte, North Carolina; Austin, Texas; Corpus Christi, TX; Dallas, TX; El Paso, TX; Fort Worth, TX; Houston, TX; San Antonio, TX.

Chapter 6

Metropolitan Areas as Communities

Metropolitan growth in America means that cities have developed multiple identities over the last century. For example Houston is a municipality that covers roughly 580 square miles and has a population of 1.9 million as of the 2000 U.S. Census, but it is also a metropolitan area spanning 7,700 square miles and is home to over 4.7 million people residing in 130 municipalities. Sixty years ago if a resident of Houston told someone he was from Houston, Texas that person would probably assume he meant the *city* of Houston, a place with a specific municipal boundary. Today it is common to state the city as the place one is from, while not actually living within the city boundaries. For instance, a person may say he is from Houston but live in the community of Katy, Texas, a municipality with over 13,000 residents, its own fire and police departments, grocery stores, public schools, a mall, animal control, a publically elected mayor, and city government; a complete city in its own right. While Katy, Texas is legally its own city because of its proximity to the City of Houston, both in terms of distance and economic activity, it belongs to the metropolitan area of Houston and its fortunes are tied to the successes and failures of both the city of Houston as well as the greater region.

Suburban communities like Katy represent what is deplorable in the eyes of critics like Lowi (1979), who argue that they approach cities as a good to be consumed. However Katy, Texas lauds itself as the best of both worlds, offering small town charm with big city convenience. This represents something that is highly desirable to residential consumers, a chance to escape some of the perceived worst aspects of city living, like poverty, congested streets, dirt, noise, pollution, crime and live in a single-

family detached home, in a safe, clean neighborhood in a good school district. In order to create idyllic suburban communities the geographic space is divided into distinct political entities which manage and oversee service delivery. In other words, across metropolitan areas, political fragmentation is the *modus operandi* to create governments and areas like Katy, Texas.

Scholars of urban America are divided over whether the governing arrangements in metropolitan areas represent a success story of democratic choice of where to live and conduct business, or if they represent a type of exploitation of city resources that fosters myopic vision among elected leaders who may resist collaboration or regional problem solving. Among the multitude of reasons public officials, journalists and scholars point to for why cities or regions struggle, political fragmentation makes a regular appearance. There are sharp divisions over whether the numbers of governments in a region represent a potential threat to progress, or if municipal boundaries should be dissolved and as proponents of reform call for, a unified, metropolitan-wide regional government be established. Creating a regional government or even getting local actors to agree to a regional policy plan has been historically and currently difficult (Nelles 2013).

Recap of the Study

Whether or not political fragmentation is harmful to cities is an empirical question and the heart of this study. In order to answer this question political fragmentation was carefully defined and measured in 100 cities and their metropolitan areas from 1950 through 2000. Fragmentation is categorized in this study into three components: horizontal, vertical and internal fragmentation. Horizontal fragmentation is the proliferation of coterminous governments of the same type across the metropolitan area.

Municipal governments are a common manifestation of this as they do not overlap geographically. Vertical fragmentation occurs when governing units do intersect with other governments. This is common among special districts which may only cover certain portions of a metropolitan area and not align neatly with municipal borders. Internal fragmentation is the division of political power among elected officials within a unit of government and for the purposes of this study was limited to the central cities. These components of political fragmentation were modeled against three outcome measures, metropolitan-wide segregation, population change and own-source revenue. These outcomes were chosen based off scholarly evidence as critical factors for a city and its region's growth or decline.

The results of the analyses reveal that political fragmentation is a complex but influential component to city health and how cities and their regions relate to each other. Analysis of own-source revenue, which represents the tax burden of city residents, reveals that they pay more in taxes for living in the central city when there are greater amounts of vertical fragmentation in the region. Cities with more elected officials seem to have a higher tax burden per capita as well. It was also found that cities surrounded by more municipal governments may need to levy higher taxes to increase their own-source revenues. However, cities that have a greater share of the metropolitan population have smaller own-source revenue per capita, meaning that city residents pay less in taxes.

The analysis of racial segregation across the metropolitan area shows that having more school districts increases segregation in that region. Having a greater number of governments, particularly municipal governments, seems to increase segregation in metropolitan areas. Cities which have a greater share of metropolitan population seem to

have more regional segregation. The impact of political fragmentation on segregation is currently a somewhat understudied area of research and this project serves to continue the dialogue. The population change model reveals that having a greater number of public school choices seems to be something that encourages families to leave central cities. However, as cities remain population centers of their regions, their population tend to keep growing.

Future Research and Parting Thoughts

Over the course of this research, one of the striking aspects of metropolitan governance which came to light is the role political fragmentation plays in creating regions where local governments and local officials take on an individualistic point of view. I argue that this perspective is fostered by those who argue for government consolidation to be replaced with regional government and those who see the proliferation of government as a public good, offering greater variation in choice to residents. Both viewpoints cast issues of government and governance in an "us" versus "them" mindset where one side essentially calls for reform because of problems caused by what others have done, while the opposing side resists because cooperation or consolidation would risk loss of political identity and control of assets. These lines of argument create a seemingly large cavern between the sides. A possible bridge could be built by shifting the conversation away from "us" and "them" to nurturing a collective metropolitan consciousness.

The work of Elinor Ostrom demonstrates that communities with a common interest or use of a common resource can work together to solve scarcity issues even in the absence of formal, centralized governments. The collaboration can not only be

achieved across disparate actors but be maintained and nurtured over time (Ostrom 1990). Theoretically, collective action has potential to guide future research and policy for metropolitan areas. The population and economic activity of metropolitan areas can represent a collective good. The strains of this are already present in the approach of special district creation to capture potential tax revenue in order to provide services and in metropolitan planning organizations to craft policy solutions for transportation and environmental monitoring. What is lacking or underdeveloped, is the residential and business collective conscience, the idea that people belong to not just a local government but also to a region and their individual actions taken together have impacts that are felt far beyond their local border. Practically speaking raising the collective awareness of a region may improve chances for government consolidation, or it may provide political opportunities for governments to collaborate utilize governance to solve regional problems.

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