

WHY CITIES FAIL: LOCAL POLITICAL INSTITUTIONS AND THE FATES
OF METROPOLITAN ECONOMIES

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As anyone who has endeavored to write a dissertation knows, the process can at times turn polite conversation into a source of fear and self-loathing. Whether it's an old friend or a new acquaintance, you know every conversation will contain the dreaded question: "How's the dissertation going?" Some time ago, I decided the best response to this query was to turn it back on the person in the form of a joke. "Why do you ask such painful questions?" I'd say, with an uneasy mix of jocularly and sheepishness. From this day forward, I am immensely pleased to say that I have a new answer to this question: "It's done! On a related note, can you recommend a good therapist?"

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Dedication

For my family, biological and otherwise.

Abstract

What differentiates economically successful urban areas from those that fall into decline? This dissertation attempts to improve upon existing answers to this question by examining the relationship between metropolitan political institutions and local economic performance. The impetus for this focus is the significant role that political institutions have come to play in explaining the structure and long-term performance of national economies. To apply this line of reasoning to the urban level, I examine three metropolitan institutions with plausible links to the local economy's structure and performance. Rather than focusing on variation in local decision-making rules (the most common approach to studying political institutions), I focus on variation in the organizational avenues available for achieving policy outcomes. The three institutional avenues I analyze are: 1) the degree of territorial—or Tiebout—competition (representing the ability to obtain policy outcomes by leveraging intergovernmental competition); 2) the revenue capacity of the primary city government (representing the ability to obtain policy outcomes by lobbying a large-scale government); and 3) the prevalence of special district governments (representing the ability to obtain policy outcomes by creating independent, specialized governments). To examine the economic effects of these institutions, I consider their characteristics in light of a three-stage theory of urban economic development. Using this framework, I derive hypotheses linking the prevalence of each institution to the structure and performance of the metropolitan economy in each stage. Testing these hypotheses via panel regression analysis, I find that both a higher capacity primary city government and an increased prevalence of special districts consistently boost metropolitan economic performance across the stages (as measured by the metropolitan income level). In contrast, a higher degree of territorial competition has a more limited impact, improving a metropolitan area's international competitiveness (but not its income level) and doing so only during the second stage of development. I finish the dissertation by applying these insights to the decline of metropolitan Detroit, demonstrating how they improve a prominent explanation found in neoclassical urban economics.

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Chapter 1: Defining the Question

Introduction

On July 18, 2013, the city of Detroit filed the largest municipal bankruptcy in US history. After years of declining population, the city's ability to raise revenue finally overwhelmed its expenses in the spring of 2012. The following February, the state declared a financial emergency and removed the city government from power. After a lengthy (and highly contested) financial review, it was determined that the city was cash-flow insolvent, leading to the bankruptcy filing in July. The events were startling, but not unexpected or even unprecedented in the region. Less than five years earlier, the US auto industry (famously headquartered in the area) underwent a similarly massive bankruptcy, resulting in a significant downsizing. Each event was subject to a great deal of popular discussion and debate, often along ideological lines. Conservatives blamed the bankruptcies on corrupt leadership at traditionally liberal institutions—unions and big city governments—while liberals pointed the finger at unscrupulous corporate practices, associating the auto industry's emphasis on short-term profits with the abandonment of both the city and a concern for quality products. In the scramble to apportion blame, the basic empirical problems undermining each of these arguments seemed to go unnoticed. For example, many successful American cities have long-standing legacies of corruption and one-party rule (including the most relevant comparison for Detroit: Chicago), and numerous American businesses were able to negotiate less burdensome union contracts and/or reduce unionization in the decades prior to Detroit's decline. Similarly, tax-driven suburbanization, quarterly-profit obsession, and planned obsolescence have long been

features of many American industries. Even though these explanations were inadequate, the attempt each made to provide a unified explanation for the city and the auto industry's failure made sense. Cities are, after all, clusters of economic activity, and their political structures are therefore fundamentally shaped by the peculiarities of the local economy. Conversely, the major role that local governments play in infrastructure provision necessarily structures local economic activity. Despite the attempt to reckon with this fundamental reality, neither of the ideological explanations identified causal variables that could distinguish declining from successful urban political economies. This combination of the right approach with the wrong answer naturally raises the question: what are the political economic characteristics that differentiate economically successful urban areas from those that fall into decline?

A rigorous answer to this question requires two elements missing from the above efforts: 1) a clearly defined unit of analysis that contains both the city and its more sprawling industries (i.e., one that reflects the actual boundaries of the urban economy); and 2) explanatory factors that vary from one urban economy to another. While the first element is straightforward to address, the second presents a more difficult problem. In this dissertation, I seek to address the latter by drawing on a line of research where political institutions and economic outcomes have been successfully linked: the literature on national economic growth. Using the argument that political institutions are integral to the structure and long-term performance of national economies, I examine the local politics literature for research where urban political institutions have been linked to local economic outcomes. Identifying three institutions, I then consider their effects in light of

the literature on urban economic development, determining the local structure and performance variables with which they have plausible relationships. Finally, I use this information to derive precise hypotheses and test them on two original datasets.

In this introductory chapter, I address two preliminary issues and provide a chapter roadmap. In the first section, I describe the unit of analysis that meets the above qualifications. In the second section, I explain the proposed connection between the national literature on economic growth and urban political economies. Finally, in the third section, I lay out a chapter plan that unpacks the above summary in greater detail.

I. Cities as Metropolitan Areas

Linking city to industry failure highlights an often-overlooked aspect of the economic and political organization of the modern world: people tend to cluster into relatively compact areas of economic activity made up of multiple, overlapping political districts. As Paul Krugman (1991) notes, this is a particularly conspicuous feature of industrialized economies.

The facts of economic geography are surely among the most striking features of real-world economies. . . . For example, one of the most remarkable things about the United States is that in a generally sparsely populated country, much of whose land is fertile, the bulk of the population resides in a few clusters of metropolitan areas; a quarter of the inhabitants are crowded into a not especially inviting section of the East Coast. It has often been noted that nighttime satellite photos of Europe reveal little of political boundaries but clearly suggest a center-periphery pattern whose hub is somewhere in or near Belgium (483-4).

As this dotted-landscape makes clear, the realities of economic geography often strain the logic of political boundaries. This applies at the national as well as subnational level. For example, the Twin Cities metropolitan area contains multiple cities and counties, overlaps two states (Minnesota and Wisconsin), and is also under the authority of the US

federal government. While this complicates the link between local government and local industry, it also clarifies that the appropriate unit of analysis cannot be limited to a city: it must include the surrounding areas that form the city's functional economy. This is known, both in academic and popular parlance, as the metropolitan area.

Metropolitan areas are not merely incidental features of economic geography. According to the US Census Bureau (2015h) and the Bureau of Economic Analysis (2015b), in 2013 over 85% of the US population resided in metropolitan areas, and their economies accounted for approximately 90% of national GDP. Patterns are similar in other parts of the developed world, although less pronounced than for the US. In Western Europe, for example, the 186 metro areas with populations greater than 150,000 accounted for 64% of the region's GDP in 2010. In the developing world, metropolitan areas are now clearly the primary centers of growth, with metropolitan China accounting for 78% of GDP in 2010 and metropolitan Latin America 76% (Manyiuka et. al. 2012). Looking at the global economy as a whole, cities and their associated metropolitan areas are growing rapidly, transforming the landscape of the international economy. As noted in a report from the McKinsey Global Institute (Dobbs et. al. 2011), more than half of the world's population now lives in metropolitan areas that, combined, account for 80% of global GDP. Metropolitan economies are therefore a major and growing part of the global economy. Moreover, in the industrialized world, they are in many respects a more natural unit of economic geography than sovereign states.

In the United States (and increasingly other countries), this political economic reality is captured with the notion of a metropolitan statistical area (or MSA). An MSA is

defined conceptually as a geographic region with a relatively high population density at its core and close economic ties throughout the area (US Census Bureau 2012i).

Originally titled "standard metropolitan area," the MSA was created by the US Federal Bureau of the Budget (now Office of Management and Budget) in 1949 as a way to harmonize data on urban areas. It was the culmination of efforts dating back to 1905, when the US Census Bureau created the "industrial district" to capture parts of urban economies lying outside the city limits. By the time of the 1910 census, this idea had morphed into the "metropolitan district," a designation the bureau maintained until the development of the MSA in 1949. As its name suggests, the metropolitan district indeed captured the wider footprint of the industrialized urban economy, but it did so in a convoluted way. Specifically, boundaries were determined by looking for a drop-off in population density surrounding the primary city. While this procedure was logical, it was done at a fine grain level, with minor civil divisions (e.g., townships, electoral districts, etc.) serving as cutoff points. Government agencies other than the Census Bureau found this level of detail cumbersome. As a result, most relied on simple, in-house alternatives (usually aggregating counties) when the need for metropolitan data arose. By the 1940s, the Federal Bureau of the Budget realized its approach was not gaining acceptance. To remedy the issue, it decided to develop a new, county-only definition for the 1950 census. The result was the 1949 "standard metropolitan area," which was renamed metropolitan statistical area in 1983. The MSA is now in regular use across all levels of the US government, and has spread to other countries as well (US Census Bureau 2012g).

The technical definition of an MSA has been stable since its inception. The only

changes have been minor modifications, such as the minimum population size of core cities (US Census Bureau 2012g). For this study, the 2003 classification was used. In that year, an MSA was defined as "hav[ing] at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties" (Daniels 2003). As noted, the adjacent territories must be counties (or county equivalents). Put in these terms, an MSA is a collection of contiguous US counties with a core city (or cities) and close economic ties throughout the area.

As a unit of analysis defined by the measurable footprint of an urban economy, the MSA is strongly suited to the political economic reality of modern urban economies. In particular, by using measures like commuting ties to define boundaries, it offers an empirical approximation of the urban economy—making connections between entities like the city of Detroit and the more dispersed US auto industry explicable. By using counties as the primary units, it greatly eases the burden of data collection (both in the United States and abroad), allowing for more robust statistical analysis and easier cross-country comparison. Given these characteristics, the MSA is ideal for developing a more rigorous answer to the question here. It is therefore the primary unit of analysis in this study.

II. Institutions and Growth, an Urban Perspective

Since the 1970s, a growing body of research has developed around the notion that political institutions play a vital role in both the nature and performance of national economies (Williamson 2000; Menard and Shirley, 2008). Examining the social and legal foundations of capitalist economies, researchers in this tradition have argued that political

organizations like states are vital to capitalism's basic underpinnings: broad-based property rights, impartial contract enforcement, and public infrastructure (North 1991; Arrow and Kurz 1970; Barro 1990). Seeking to explain why some states are better able to provide these foundations than others, scholars have looked to the rules governing state decision-making. In particular, the means of obtaining office, the extent of suffrage, limits on state authority, and competition among state organizations have all been found to have some connection to a nation's ability to develop and sustain a capitalist economy. This, in turn, drives higher GDP growth (Weingast 1995; Przeworski 2004; Acemoglu, Johnson, and Robinson 2005). In sum, the findings from this research indicate that a significant part of what distinguishes rich from poor countries in the industrial era is their political institutions, specifically whether or not the state implements at least some practices that are associated with liberal democracy (Weil 2012; Acemoglu and Robinson 2012).

In addition to this finding, researchers have also investigated how political institutions form and change. Such issues are the primary concern of the "Historical Institutionalism" literature, which documents the origins and historical evolution of various institutions (Sanders, 2008). Findings from this research indicate that institutions are founded at so-called "critical junctures," or moments of significant change that allow for new practices to gain traction. Once established, these practices become "locked-in" via mechanisms like increasing returns, in which the benefits of maintaining established practices increase over time (or alternatively, the cost to changing them increase) (Pierson 2000; Page 2006). For political institutions, these findings mean that the

procedures, rules, and norms of collective decision-making they embody are products of historical context and change under relatively rare historical conditions. Furthermore, even when environmental conditions change in ways that make them obsolete or harmful, they usually remain intact. Combined with their role in underpinning the national economic system, this indicates that—once established—the economic impact of political institutions is enduring.

In helping to explain persistent differences in country growth rates, the national institutions literature represents impressive progress on a vexing issue. Given the similarity to the question here, it is also instructive. Specifically, it naturally raises the possibility that urban economic outcomes may be similarly tied to local political institutions. Combining this insight with the better-suited unit of analysis, a more tractable version of the original question can be formulated: do metropolitan political institutions differentiate economically successful metropolitan areas from those that fall into decline? If so, how?

The first step in answering this question is to understand the logic of the national institutions argument. At a general level, the national logic appears straightforward: political institutions first influence the structure of the economy (e.g., capitalist, socialist, mixed, etc.), and this in turn influences its performance. Put in diagram form, the argument is as follows:

Political Institutions —————> *Economic Structure* —————> *Economic Performance*

This is of course a drastic oversimplification. In particular, there is an active debate over what deserves causal priority in the "democracy-capitalism-growth" relationship, particularly at its inception (i.e., whether institutions precede or follow structure and

performance is not a settled question) (Glaeser et. al. 2004; Ansell and Samuels 2014; Boix 2015). While interesting, the precise nature of these mutually re-enforcing relationships is not a concern for this study. Instead, I am interested in establishing whether or not metropolitan versions of these relationships *exist*. Nonetheless, a makeshift causal path is useful for simplifying discussion and structuring the argument. I therefore adopt the above-diagrammed pathway as a provisional causal structure for the metropolitan level.

More important than the sequence, the national institutions literature reveals the empirical components necessary for developing a metropolitan analogue: variables for political institutions, economic structure, and economic performance. Identifying these variables, proposing hypotheses for how they are linked, and testing those relationships constitute the primary tasks of this dissertation.

III. Plan for the Dissertation

The remainder of this dissertation is broken into four chapters. Following this introduction, the second chapter focuses on identifying relevant metropolitan political institutions. The third chapter then situates these institutions in an economic theory that allows for the specification of economic variables and the derivation of hypotheses. The fourth chapter tests these hypotheses and interprets the results. Finally, the fifth chapter concludes the dissertation with an analysis of Detroit and a discussion of directions for future research.

In the second chapter, I identify political variables by reviewing three lines of research in which local institutions were linked to local economic outcomes: 1) Tiebout-

inspired studies of intergovernmental competition; 2) analyses of the economic and political nature of primary central cities; and 3) examinations of the rise of special-purpose local governments. Rather than focusing on the ways in which these structures constrain self-interested politicians (the dominant approach of national researchers), I argue that each literature reveals different avenues for obtaining desired local policies/services. The first highlights the use of territorial competition for leverage; the second lobbying the area's largest, most capable government; and the third creating a separate, specialized government. Once established in a region, these avenues provide distinct, enduring means for achieving political outcomes, marking them out as institutions. In each case, I find that the institution appears to have some relationship to local economic outcomes, but its precise nature has eluded researchers. Examining the three literatures as a whole, a possible explanation for this emerges: each institutional avenue imposes a trade-off on the local economy. Territorial competition moves local policy toward fiscal equivalence (i.e., matching beneficiaries of local public goods with those who pay for them), but does so via geographic fragmentation, thereby reducing the regional capacity for large-scale endeavors. Conversely, primary city governments provide the revenue and administrative capacity for large-scale and regional public goods, but compromise fiscal equivalence due to their centralized, broad-based nature. Finally, special-purpose governments sit in-between these options, combining geographic flexibility and limited functionality to produce a scalable means of fiscal equivalence. While innovative, special districts produce a proliferation of decision-making bodies with varying boundaries, raising the burden of citizen participation. Such reduced

accountability produces an incentive for their administrators to over-tax, undermining the fiscal benefits associated with their flexibility. If accurate, these trade-offs complicate the link that each institution has to the local economy, making it possible for the institutions to have different (even opposing) economic effects, depending on the context. Because prior researchers have not been attentive to this possibility (often because economic outcomes were not the central focus of their research), the economic import of each institution has yet to be understood.

All of this indicates that properly identifying local economic relationships requires variables and hypotheses that are attuned to the context in which an institution's link to the economy operates. This, in turn, requires a more detailed theoretical understanding of the local economy. That is the focus of the third chapter. In it, I consider the institutional trade-offs in light of the literature on urban economic development. Doing so reveals two useful pieces of information: 1) urban areas tend to grow in three stages, following a sequence rooted in national economic development; and 2) a significant body of research indicates that the second stage of this sequence is severely constrained in closed-economy settings.

The first finding is foundational to this study, providing the framework from which testable hypotheses are derived. Drawing on the three-sector model of national development, I divide the typical urban development path into three stages: 1) early industrialization, 2) mature industrialization, and 3) post-industrialization. In this stage, strong primary cities and special districts are the institutions most likely to be related to strong metropolitan economies—as both are compatible with high demand for

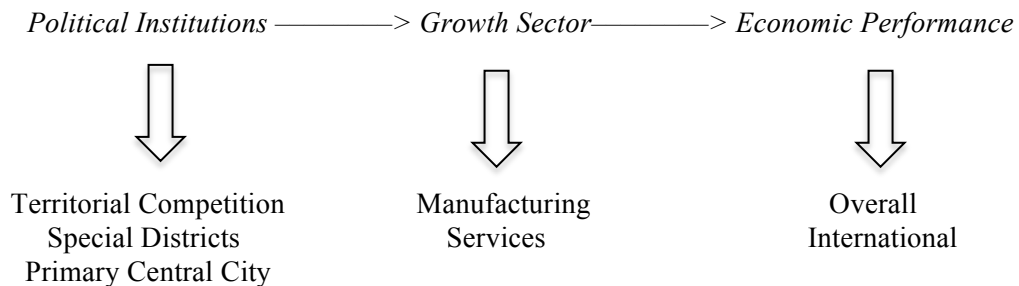
concentrated infrastructure—while territorial competition is likely to exhibit the opposite relationship due to the dispersed, redundant nature of the infrastructure it provides. In the second stage, capital accumulation combines with rising urban congestion costs to incentivize a de-concentration of the local economy. During this period, territorial competition is the institution that is logically related to economic strength, while strong primary cities are likely to function as a drain due to their connection with over-concentration. Special districts, meanwhile, are likely to exhibit either a much-reduced relationship to local economic outcomes or none at all. This is because even though their flexibility is useful for new infrastructure, the resulting over-taxation they produce will increasingly undercut this advantage (i.e., districts are accumulating as time goes on). Finally, in the third stage, physical goods industries are displaced by services, leading to renewed urban concentration as skilled service employers seek out knowledge externalities and displaced manufacturing workers follow in their wake. When this occurs, strong primary cities once again have the most plausible association with local economic success, while territorial competition is likely to return to a negative relationship. Special districts should now definitively exhibit a negative relationship, as over-taxation increasingly outweighs the benefit of new infrastructure and/or services.

In conjunction with this sequence, the second finding helps to illuminate the set of economic variables appropriate for testing the argument. Drawing on the analogy to the national literature, these can be separated into two types: structure and performance. At the national level, economic structure refers to the relative importance of private vs. state direction in the economy (i.e., capitalist, socialist, mixed, etc.). Local institutions do not

possess a similar capacity or propensity for intervention. As is evident in the stages, however, local institutions do possess plausible connections to the sectoral makeup of the local economy. That is, there is likely a relationship between a metropolitan area's relative strength in a particular institution and its capacity to host the dominant sector of each stage. If accurate, growth-related institutions in the first two stages should be related to measures for manufacturing, while in the third they should be associated with variables for the service sector. While variation in state intervention affects the incentives and behavioral patterns of an economy in far more fundamental ways, sectoral composition affects everything from prominent job locations (cities or suburbs) to educational incentives (good-paying, low-skill factory jobs reduce the need for skill investment). Viewed in this way, the relationship between local institutions and prominent sectors has a significant impact on local incentives and behavior, and is therefore an appropriate analogue to the national relationship. Turning to performance, the tie to economic openness reveals that the relationship between metropolitan institutions and growth has two distinct facets: overall and international. Overall performance is straightforward, referring to the urban equivalent of national GDP. International performance is more complicated. Because open trade appears to be a necessary condition for stage-two de-concentration, its role must be considered alongside the infrastructure and congestion cost forces described in the three-stage framework. Doing so reveals that import competition is a critical force in stage two. Importantly, incorporating import competition as a de-concentrating force highlights a previously unconsidered source of institutional variation: the degree of fiscal independence. Because territorial competition requires establishing

separate, multi-function governments (while special districts ultimately still depend on other units), it offers a greater degree of independence from other local governments. For industries facing significant import competition during stage two, this greater separation may be especially attractive because it represents total extrication from primary city taxes. If accurate, this indicates that the emergence and effectiveness of territorial competition is uniquely related to an urban area's international trade position. Because of this possibility, international performance merits inclusion as a separate variable.

Overall then, the three-stage sequence and open economy condition indicate that the three institutions have hypothetical relationships to four metropolitan economic variables: the size of the manufacturing sector, the size of the service sector, GDP, and international competitiveness. Augmenting the national institutions diagram to reflect this MSA-level version yields the following sequence. The down arrows relate each concept to its empirical components.



In the fourth chapter, I identify variables for the above components and use them to test the hypotheses derived from the stage theory. To do so, I analyze two panel datasets: one running from 1977-2005 and another from 1969-2005. The former uses data from 363 US MSAs, while the latter uses data from US states. Both datasets straddle the shift from stage two to stage three in the US economy (similar data is unavailable for the

transition from stage one to stage two). A state-level dataset is included because of the limited availability of MSA employment data, which has not yet been digitized prior to 1977. It is therefore a means of increasing the data coverage for stage two. What is gained in years, however, comes at the cost of satisfactory statistical inference. Specifically, because MSA-level variables are aggregated to the state level, the point estimates are no longer meaningful indicators of MSA-level changes. To account for this, I divide the independent variables in these models by the number of MSAs in their respective states (i.e., the coefficients indicate the effects of *per* MSA increases on state economic variables), and interpret the results as secondary evidence for findings identified with the MSA data.

In order to test for the presence of stage-driven changes with these datasets, it is first necessary to identify a cutoff year for the shift between stages two and three. Therefore, before running regression models, I examine data on both the sectoral contributions to growth (i.e., an indicator of the growth sector) and the trade position of the US economy as a whole. Looking at time-series plots, I find that 1986 is a reasonable year in which to test for a structural break in the data. Using this cutoff, I analyze three sets of models for each dataset: an overall model covering all years; a stage-two model that incorporates a dummy interaction that runs from the beginning of the dataset through 1986; and a stage-three model with a dummy interaction that runs from 1987-2005. Analyzing all six with a dynamic panel estimator, I am able to test for both the presence and direction of relationships among the variables, as well as any stage-based changes in those relationships. With the results from these tests, I finish the chapter by evaluating the

hypotheses from the stage theory and discussing their relevance to both the urban political economy sub-discipline and the broader field of political economy.

Finally, in the fifth chapter I apply the results from the data analysis to the decline of metropolitan Detroit before concluding the dissertation with a discussion of four ways in which future researchers could improve upon my overall efforts. To analyze Detroit, I first discuss how knowledge of local institutions is vital to identifying the critical decisions that precipitate decline. In particular, I do this by arguing that the "poor investments at critical junctures" explanation used by neoclassical urban economists falls short without this contextual information. Following this, I lay out a brief economic history of Detroit, structured around the development stages discussed in Chapter Three. I then couple this narrative with the data from Chapter Four to analyze how Detroit's institutional structure evolved between 1958 and 2005. Finally, I use this information to explain how the development of this structure severely limited Detroit's revitalization options after stage-two de-concentration. In particular, I argue that the only viable way to avoid decline—for the city and the metro area—was to lure the human capital-intensive operations of the Big Three to a downtown district. Absent this, all other efforts would suffer from the pull of a suburban economy that duplicated (without much success) the economic role of the city.

Following the discussion of Detroit, I offer four ways in which future researchers could improve upon my efforts. The first is to expand the metropolitan data. I suggest this could be done by inputting yet-to-be digitized US data, incorporating data on commuting ties, and/or using metropolitan data from other countries (via Eurostat and the OECD).

The second suggestion I make is to use more sophisticated econometric tests. In particular, I advocate using models that make better use of the temporal and spatial structure of the data. My third proposal is to expand the number of MSA case studies. For this task, I recommend splitting the dataset according to population groups and using regression analysis to identify relevant cases. Finally, my fourth suggestion is to further examine the economic impact of primary city governments. Specifically, I propose adding economic outcome variables to Richard Feiock's work on the relationship between city government type (e.g., mayoral or managerial) and urban development policies. Taking up any or all of these suggestions would not only improve this study, but add significantly to our understanding of the political economic characteristics that differentiate economically successful metropolitan areas from those that fall into decline.

Chapter 2: Political Variables

Introduction

The difficulty that popular commentators displayed in explaining Detroit may not be terribly surprising. Public intellectuals are, understandably, often more interested in provoking conversation than in providing rigorous explanations. If popular thinking is a poor guide, what about academic explanations? While there is no comprehensive theory of metropolitan decline, scholars have generally highlighted three causes: 1) excessive segregation, 2) capitalist depredation, and 3) poor investments at critical junctures. The first derives primarily from historians who study American cities. In these works, scholars have explored the role that housing policy (at all levels of government) played in facilitating racial segregation. Using these policies as a guide, they trace both the formation of inner-city ghettos and the resulting capital flight (Sugrue 1996). This view has proven widely influential, as is evidenced by the current popularity of immigrant dispersal policies in Europe (Musterd 2005). The second comes from the Marxist tradition. As best exemplified in the work of critical geographer David Harvey (2012), the Marxist explanation for metropolitan decline comes from the view that urban space is constantly turning over to absorb surplus capital. This has allowed some cities to continually thrive, while turning others into ghost towns. Finally, the third causal factor emanates from neoclassical economists. While noting the structural changes that force cities to adapt (e.g., the decline in manufacturing employment), these scholars have focused on the investment decisions that occur when cities start to experience population decline. In particular, they have argued that the major differentiator between cities that

rebound and those that continue to shrink is the decision to invest in educational institutions and small business incentives over against urban renewal projects (e.g., stadiums, high-rises, casinos, etc.). As urban economist Edward Glaeser (2012) put it, "Investing in buildings instead of people in places where prices were already low may have been the biggest mistake of urban policy over the past sixty years" (Kindle Locations 971-972).

Of these three causes, the final one has proven the most robust. Specifically, a growing number of studies indicate that variation in segregation levels is insufficient as a distinguishing characteristic (Logan and Parman 2015), and the churn of urban investment in capitalist society receives scant attention outside of Marxist circles (perhaps because it is too rudimentary a notion to test). In contrast, analyses of key investments are focused squarely on points of divergence among metropolitan areas and are gaining widespread attention among scholars and data-driven journalists (Glaeser 2012; Moretti 2012; Yglesias 2012). While the investments argument appears (at the moment) to be superior to the alternatives, it runs the risk of becoming idiosyncratic. That is, it identifies important investment decisions, but does not specify why those decisions are made in some places, but not others. To that end, the national institutions literature provides an excellent starting point for further developing the argument. In particular, institutions researchers differentiate rich from poor countries by identifying how the nexus between economic and political institutions affects investment incentives. By looking for similar relationships at the metropolitan level, more fundamental determinants of metropolitan investment decisions might be found. In this way, the

emphasis on critical investments can be absorbed into a more general, less idiosyncratic framework. The research in this dissertation can therefore be viewed as an attempt to build-out this neoclassical explanation of metropolitan decline.

As discussed in the introduction, developing this explanation requires specifying a metropolitan version of the national institutions argument. In simplified form, the national argument is as follows:

Political Institutions —————> *Economic Structure* —————> *Economic Performance*

The theory therefore contains three components, each of which requires a metropolitan analogue to form the lower-level version. Identifying these analogues and proposing hypothesis for how they are linked is the focus of the following two chapters. The first (chapter two of the dissertation) focuses on political institutions, while the second (chapter three) specifies economic variables and lays out hypotheses. In this, the second chapter, I identify political variables by reviewing three lines of research in which local institutions were linked to local economic outcomes: 1) Tiebout-inspired studies of intergovernmental competition; 2) analyses of the economic and political nature of primary central cities; and 3) examinations of the rise of special-purpose local governments. Each literature reveals a different avenue for obtaining desired local policies/services. The first highlights the use of territorial competition for leverage; the second draws attention to lobbying the primary city government; and the third looks at creating a separate, specialized government. Once established in a region, these avenues provide distinct, enduring means for achieving political outcomes, giving them institutional status. In each case, I find that the institution appears to have some relationship to local economic outcomes, but its precise nature is unclear in the existing

research. Examining the findings as a whole, a possible explanation for this emerges: each institutional avenue imposes a trade-off on the local economy. Territorial competition moves local policy toward fiscal equivalence (i.e., matching beneficiaries of local public goods with those who pay for them), but does so via geographic fragmentation, thereby reducing the regional capacity for large-scale endeavors. Conversely, primary city governments provide the revenue and administrative capacity for large-scale and regional public goods, but compromise fiscal equivalence due to their centralized, broad-based nature. Finally, special-purpose governments sit between these two options, combining geographic flexibility and limited functionality to produce a scalable means of fiscal equivalence. While innovative, special districts produce a proliferation of decision-making bodies with varying boundaries, raising the burden of citizen participation compared to the other options. Such reduced accountability produces an incentive for their administrators to over-tax, undermining the fiscal benefits associated with their flexibility. If accurate, these trade-offs complicate the link each has to economic outcomes, making it possible for the institutions to have different (even opposing) economic effects, depending on the context. This indicates that properly identifying local economic relationships requires variables and hypotheses that are attentive to the context in which the institution's link to the economy operates. This, in turn, requires a more detailed theoretical understanding of the local economy, a task that is taken up in chapter three.

In the following sections, I consider each local institution in turn. In the first section, I review territorial competition. In the second section, I discuss research on the

primary central city. In the third section, I look at the literature on special districts. Finally, I end the chapter with a brief summary and conclusion.

I. Territorial Competition

The first local institution with plausible economic implications is territorial competition. This avenue came to light with Charles Tiebout's (1956) *A Pure Theory of Local Expenditures*. In this seminal article, Tiebout argued that local political organizations operate in a significantly different environment than their national counterparts, one that mitigates the economic costs governments naturally impose. The source of this distinction is resident mobility. Specifically, Tiebout argued that because businesses and citizens can move among local government jurisdictions with relative ease, they are able to choose where they wish to reside based, in part, on the local tax-and-service bundle. This creates a scenario where local politicians have a heightened incentive to provide desired public goods at low cost, and residents are forced to reveal information about their preferred public goods and willingness to pay (i.e., it is harder to "free ride"). Put another way, the ability to "exit" forces local political institutions to compete like businesses, and local residents to choose among them like consumers, generating a market-like environment. Tiebout argued that such an environment would benefit the local economy by improving the efficiency of public spending.

Mancur Olson (1969) later developed a more general concept to explain these efficiency gains. Termed "fiscal equivalence," it explained outcomes like those described by Tiebout as a function of an institution's capacity to develop boundaries that better match the beneficiaries of a public good with those who pay for it. By thinking in such

terms, it becomes apparent that the inefficiencies identified by Tiebout emanate from two potential sources: providing public goods to constituents who could pay for them but do not (i.e., goods spilling over a boundary); and providing public goods to only a subset of constituents (i.e., goods that are paid for by the full set of constituents within a boundary, but only used by some). In either case, the problem can be fixed by altering the boundary so that beneficiaries and payers are aligned. Territorial competition is a substitute form of such boundary change. While the boundary remains fixed, the increased capacity for "exit" incentivizes a geographic sorting that has the same effect. The end result is not as stringent as flexible boundaries, but it pushes a local governance structure in the same direction, thereby increasing its efficiency. Thus, territorial competition can be viewed as a means of increasing the degree of fiscal equivalence in a metropolitan area. This framing will prove useful when comparing the trade-offs of the three institutions.

Tiebout's argument was well received at the time and continues to garner a good deal of scholarly attention (Singleton 2014). Given its age and stature, one would assume the model is by now a well-documented determinant of economic performance. However, the empirical validity of its economic claims remains uncertain. This is apparent both in studies that examine it at the local level, and those that apply it to higher levels of government. In this section, I provide an overview of each set of research, looking first at the local literature and then at the relatively larger collection of federalism studies. In both instances, it is apparent that a precise connection between the Tiebout model and economic outcomes has proven elusive. I finish by examining the research as a whole, ultimately concluding that Tiebout's notion of territorial competition merits further study.

Local examinations have centered on whether or not the model's analysis of local government fragmentation represents only one side of a trade-off. Drawing on the market failure literature, scholars have questioned whether the efficiency gains from competition outweigh the foregone benefits from scale and external economies. Scale economies in local government emanate from the gains to be had by pooling infrastructure. For example, if two communities each decide to build their own library, they will create two separate buildings, hire two sets of staff, and purchase two sets of books. By contrast, if they pool their resources to create one library, they will increase the output of the library by more than the combined inputs (i.e., they will produce more output with the same total input), creating a scale benefit. Benefits from external economies come from better managing both the positive and negative impacts of jurisdictional spillovers. In the case of positive externalities, greater centralization means that more resources can be put toward policies with known external benefits (e.g., public transportation), even if the benefits are unequally distributed across the region. For negative externalities, central authorities are better able to prevent attempts to pass on spillover costs by targeting the individuals and jurisdictions responsible for them (industrial pollution is the classic example) (Gerber and Gibson 2005). In fiscal equivalency terms, both the scale and externality arguments suggest that getting the boundaries "right" comes at the cost of administrative capacity, which has its own efficiency upside. If the benefits from this capacity outweigh the efficiency gains from greater fiscal equivalence, then the net economic result from an institution like territorial competition will be negative. All of

this indicates that fragmentation is not without its own efficiency costs, suggesting at the very least a trade-off between (territorial) competition and (administrative) centralization.

Despite a clear empirical focus, this debate has produced relatively few large-N studies. Those that have been published do not reveal a consistent relationship between fragmentation and the local economy. The earliest study was Bradbury et. al.'s (1982) examination of the effect of interjurisdictional competition on US central city growth, a study which found that a higher number of municipalities in a metropolitan area was associated with slower average central city population growth from 1970-1975. This, they argued, was detrimental to the central city economy and therefore indicative of a declining urban area. Kathryn A. Foster published the next study in 1993, extending the Bradbury et. al. analysis by examining the relationship between multiple measures of local government fragmentation and population growth, and increasing the data coverage to 129 US MSAs between 1962 and 1982. Foster's findings were inconclusive, with two fragmentation variables producing statistically significant but opposing effects on population growth, and three others evincing no relationship. The next large-N study, Nelson and Foster's 1999 examination of 287 US metropolitan areas from 1976-1996, made the advance of incorporating direct measures of the local economy. The results were again mixed, with increases in competition via MSA special districts coinciding with metropolitan-wide income decline, but higher population shares in suburban municipalities corresponding with income growth. Economist Dean Stansel conducted the next such study in 2005, expanding the empirical range to 314 US MSAs between 1960 and 1990 and using both population and (real) per capita income as dependent

variables. Unlike previous studies, Stansel found a clear economic benefit to local fragmentation. Specifically, his results showed that a higher central city share of the metro area population was associated with lower income growth (indicating that economic performance declines when more citizens reside under one local government), and that more municipality and county governments per 100,000 residents was associated with increasing MSA income. The next study, however, once again yielded ambiguous findings. Hammond and Tosun's 2011 analysis of US counties in the 48 contiguous states from 1970-2000 (including metropolitan and non-metropolitan areas) found that higher fragmentation via special district governments was associated with increasing population and employment in metropolitan counties, but had no relationship to income; while increasing municipality and county governments per capita were associated with declines in population and employment in non-metropolitan counties. The final and most recent study, Hatfield and Kosac's 2013 analysis of US MSA's from 1969-2006, found that increases in county governments per MSA were associated with higher growth in earnings per employee. While there is some variation in these studies, the collective message is the same: scholars studying largely the same country and time period have not found a consistent link between government fragmentation and the local economy.

Compared to local studies, analyses of competition at higher levels of political aggregation have been plentiful. This is primarily due to scholarly interest in Barry Weingast's (1995) theory of "Market-Preserving Federalism" (MPF). Weingast found resonance for Tiebout in a fundamental political economy dilemma: how can a central state be strong enough to protect property rights, yet credibly commit to not using this

authority to rent-seek? He hypothesized that federal political institutions resolve this predicament by reducing central government authority and promoting intergovernmental competition. Specifically, Weingast argued that when national institutions are designed so that sub-national governments are given primary authority over their economies, the ensuing competition among the provinces/states incentivizes politicians to opt for market-friendly rather than rent-friendly policies. "Primary authority" in Weingast's theory refers to the level of fiscal control. The reason for this is straightforward: the less responsible local authorities are for raising and spending revenue, the less control they have over the levers of economic policy, reducing the opportunity for meaningful competition. As a result of this, the theory is most strongly associated with the idea that fiscal decentralization improves economic performance.

Following his 1995 paper, a number of studies have analyzed the relationship between fiscal decentralization and economic performance at the state/province and national levels. Despite this, researchers have yet to move past a record similar to that of the local studies. Table 2.1 below provides a list of the large-N statistical studies conducted since 1998. Unless otherwise noted, all of the studies employ standard OLS regression. While not exhaustive, reading down the "Finding" column is sufficient to demonstrate that the empirical record for studies of fiscal decentralization is inconsistent.

Table 2.1: Empirical Studies of Fiscal Decentralization and Economic Performance

Author(s) & Year	Domain	Independent Variable	Dependent Variable	Finding
Zang and Zou, 1998	Chinese Provinces, 1980-1992	Ratio of provincial spending to central government spending	Provincial Income Growth	Negative Relationship
Davoodi and	46 Countries	Ratio of	National GDP	No

Author(s) & Year	Domain	Independent Variable	Dependent Variable	Finding
Zou, 1998	(18 developed), 1970-1989	subnational spending to total government spending	Growth	Relationship
Woller and Phillips, 1998	23 Countries (0 developed), 1974-1991	Ratio of subnational revenue and spending to total government revenue and spending	National GDP Growth	No Relationship
Yilmaz, 1999	46 Countries (20 developed), 1971-1990	Ratio of local government spending to total government spending	National Per Capita GDP Growth	Positive Relationship
Xie, Zou and Davoodi, 1999	US States, 1949-1994	Ratio of state and local spending to total government spending	State Per Capita Income Growth	No Relationship
Lin and Liu, 2000	Chinese Provinces, 1970-1993	Marginal retention rate of national revenues collected in the province	National Per Capita GDP Growth	Positive Relationship
Akai and Sakata, 2002	US States, 1992-1996	Ratio of local revenue to total state and local revenue	State GDP Growth	Positive Relationship
ThieBen, 2003	22 Countries (22 developed), 1973-1998	Ratio of subnational revenue and spending to total government revenue and spending	National Per Capita GDP Growth	Inverted-U Relationship (Positive when decentralizing from low initial levels, but eventually negative)
Iimi, 2005	51 Countries (22 developed), 1997-2001	Ratio of subnational spending to total government spending	National Per Capita GDP Growth	Positive Relationship
Feltenstein and Iwata, 2005	Chinese Local Governments, 1952-1996	Ratio of local government spending to total government spending	National GNP Growth	Positive Relationship

Author(s) & Year	Domain	Independent Variable	Dependent Variable	Finding
Thornton, 2007	19 Countries (19 developed), 1980-2000	Ratio of subnational own-source revenue to total government revenue	Average GDP Growth Across Countries	No Relationship
Bodman, Heaton, and Hodge, 2009	Australian States and Local Governments, 1972-2005	16 ratio measures of fiscal decentralization *	National Per Capita GDP Growth	Inconclusive
Rodriguez-Pose and Ezcurra, 2010	26 Countries (19 developed), 1990-2006	Ratio of subnational spending to total government spending	Subnational Disparities in GDP Per Capita	Negative Relationship
Asatryan, 2010	23 Countries (23 developed), 1975-2001	Ratio of subnational revenue and expenditure to total government spending and expenditure * †	National GDP Per Capita	Negative Relationship
Baskaran and Field, 2012	23 Countries (23 developed), 1975-2001	Ratio of subnational own-source revenue to total government revenue	National GDP Per Worker	No Relationship

* 'Bayesian Model Averaging' used to obtain aggregate result from multiple measures

† Own-source and total revenue analyzed separately

Thus, in both local and non-local settings, empirical tests do not reveal a consistent relationship between territorial (or Tiebout) competition and the economy.

Given both sets of findings, it is reasonable to ask: does Tiebout's notion of territorial competition merit inclusion as a local institution in this study? Two observations from this research are important to note when answering this question. First, an inconsistent track record is different from a series of null findings. In most instances, political competition has a statistically discernable relationship to economic performance; it simply does not exhibit a clear direction. Second, despite widespread recognition of the

trade-off between competition and centralization, researchers have yet to more precisely specify who wins and who loses from each side of this trade-off. Combined, these observations suggest that territorial competition is in fact related to economic outcomes, but understanding the direction of its effect (e.g., does it improve or hinder performance?) may require additional information about the economic context. Put another way, the trade-off between fiscal equivalence and administrative capacity may operate differently depending on certain features of the local economy. I address this issue in the next chapter via research on urban economic development. For now, it is enough to know that Tiebout competition generally displays some type of relationship with the economy, and examining its effect in light of some additional economic considerations may clarify it. Because of this, territorial competition remains a promising variable to consider when developing an explanation of metropolitan economic outcomes.

II. Primary Central Cities

The second institution worth examining for its economic implications is the relative strength of a locality's primary central city government. The term "primary central city" refers to the most populous city in a metropolitan region. It is generally the area's founding settlement and usually hosts its central business district (CBD). The word "primary" is added to distinguish between the region's most populated central city and secondary ones that also receive this classification "central city" in many government systems (including the US Census Bureau's). I single out the primary city because urban economic studies indicate that it is uniquely influential in metropolitan economies. In this section, I provide a brief overview of the economic literature demonstrating this,

followed by a similar sketch of the relevant political research. While the two follow the same historical trajectory in terms of research coverage, the political literature reveals noticeably less concern with primary central cities over time. As with the Tiebout literature, this has left a promising knowledge gap concerning the importance of these governments to MSA economies. Further considering the relationship between the two institutions reveals an even deeper connection. Primary city governments are the most plausible representatives for the opposing pole of territorial competition: local government centralization. As a result, they represent the opposite end of its trade-off with scale and regional capacity. If true, the same conclusion applies to both institutions: understanding the relationship to the local economy requires careful consideration of how this trade-off plays out in different local economic contexts.

The importance of primary central cities in modern economic understanding emerged with the monocentric city model. Originating with von Thunen (1826/2013) and modernized by William Alonso (1964), Edwin Mills (1972), and Richard Muth (1969), the monocentric model describes cities using a spatial model of land prices known as "bid rent theory." Under this approach, the demand for real estate is highest in the primary central city and decreases as a function of the distance from it. As a result, the amount land users are willing to "bid rent" falls in conjunction with access to the primary city and its central business district. The model's intuitiveness and simplicity quickly made it the dominant approach to understanding urban spatial structure (McMillen 2006, 128; O'Sullivan 2011). By the early 1980s, however, the household decision function at the center of it came into question. Of particular importance was economist Bruce W.

Hamilton's (1982) article "Wasteful Commuting." Hamilton noted that a household utility function resulting in higher land values near the city indicated that rational agents would minimize both their distance to the CBD and their commuting time. Given some degree of decentralized employment (i.e., jobs outside the CBD), this implied that no one would locate in an area that required commuting *across* the primary central city. To assess this claim, he calculated the mean commuting distances predicted by the model for several American and Japanese cities. He then compared these with the observed mean values, and found that the actual mean distances traveled were approximately 8 times longer than the model-based predictions (1041). This work, along with formal analyses by Masahisa Fujita, eventually resulted in the popularization of an alternative approach: the polycentric urban model (Mori 2006). In large part because of the developed world's increasingly suburbanized cities, the polycentric model appeared ascendant in the 1980s and 1990s (McMillen 2006; Mori 2006).

As the 1990s wore on, however, it became apparent that the monocentric model would not be displaced. This was not simply a matter of mathematical convenience, but instead reflected two empirical considerations. The first, and most important, was that the model's predictions regarding the spatial distribution of economic value were never invalidated. Even at the height of suburban sprawl, studies indicated that land values, housing prices, population density, and the capital-to-land ratio all declined relatively smoothly as a function of distance from the primary city business district (McMillen 2006; Paulson 2012). While the reason for this was not well explained by the model's household utility function, the emergence of viable suburban centers did not change this

general pattern. The second empirical factor resulted from a shift in the developed world's urban landscape. In particular, the growing suburbanization experienced during much of the twentieth century suddenly started to reverse itself in the early 1980s, producing an urban resurgence. Scholars seeking to explain this noticed that it corresponded to a larger structural change in developed economies, one that fit well with earlier generations of urban economic thought. Economists Edward Glaeser and Giacomo Ponzetto (2010) explain this connection as it relates to changes in the US.

Thirty years ago, every major northeastern and midwestern city looked troubled. America had twenty cities with more than 450,000 people in 1950. Every one of them lost population between 1950 and 1980, except for Los Angeles, Houston, and Seattle. The primary source of economic decline for these places was a decline in manufacturing, which first suburbanized...and then left metropolitan areas altogether. Improvements in information technology had made it quite easy for corporate leaders, who often remained in the older cities, to manage production in cheaper locales. But since 1980, a number of older cities, which had been declining, started once again to grow both in population and often more strikingly in incomes. Places like New York, San Francisco, Boston and Minneapolis have all thrived since the 1970s, generally in idea-intensive industries, like finance, professional services and new technology. Urban density that once served to connect manufacturers with railroads and boats now serves to facilitate contact of smart people in idea-producing sectors.... [T]hese idea-producing advantages appear to be more and more critical to the success of older, high-density cities (303-4).

The structural change chronicled by Glaeser and Ponzetto is the post-1980 rise in high-skilled services, and the idea-producing advantage of density refers to the urban information externality (Wren 2013). This externality was first theorized by economist Alfred Marshall in 1890, and subsequently expanded upon by Kenneth Arrow (1962), Jane Jacobs (1970), and Paul Romer (1986) (Glaeser et. al. 1992). While there are now multiple variants, the basic idea is that proximity leads to more frequent interactions among workers, and this increases the pace at which beneficial information spreads.

Noticing the resonance between this understanding and the increasing prominence of high-skill services in cities, urban scholars have naturally engaged in a re-appraisal of these idea-based externalities since the resurgence became apparent. This has resulted in a voluminous literature seeking to confirm the existence of the externality and study its impact on the expanding service economies of the Western world (Duranton and Puga 2004; Glaeser 2000; Glaeser and Saiz 2004; Glaeser and Gottlieb 2009; Moretti 2004; Rosenthal and Strange 2004). In conjunction with the findings on urban spatial distribution, this literature has helped the monocentric model to remain the standard in urban economics. In light of the massive growth of suburbs, the endurance of this approach is a testament to the primary central city's economic might.

Urban economic theory therefore finds a highly significant role for primary central cities, one that has endured through an era of significant economic change. What about their governments? Unsurprisingly, interest in central city governments has followed a trajectory similar to that of the economic literature. In the earliest studies of urban politics, the central city government played an important role. It was known for the infamous "urban political machine," a system of patronage that produced strict and enduring control of city governments for a small group of political leaders. The rise and fall of the urban machine was much studied, and a significant emphasis was placed on its economic origins and impact. The findings, however, were ambiguous. In the early studies, this ambiguity resulted from a fundamental trade-off with urban machines that qualitative researchers were ill equipped to assess. On the one hand, machines were responsible for an unseemly and (possibly) inefficient use of public funds. On the other

hand, machine networks provided a major benefit by integrating urban newcomers—especially immigrants—into the city's growing industrial economy (Reid Jr. and Kirth 1992). This tension was not resolved when it became possible to conduct statistical analyses. While local measures of wealth and economic activity have never been available for the machine time period (roughly 1870-1930), quantitative scholars were able to create corruption measures from the earlier qualitative work. To test hypotheses related to the economic effects of machines, they then examined these measures in relation to city population size and growth; the tax level; municipal wages; and spending on services. The results indicated that cities with increased corruption had higher values on all measures during the time period. This was interpreted as evidence that machine-run cities were indeed more expensive, but also better at providing public goods. The quantitative scholars concluded from this that politicians seeking to maximize graft also have an incentive to provide an optimal level of public goods (Menes 1999; Menes 2006). Thus, the efforts of both qualitative and quantitative researchers never clarified the local economic impact of urban machines.

With the slowdown in industrial dislocation and the advent of the Progressive reform movement, machine politics faded (Reid, Jr. and Kurth 1992). By the mid 1970s, urban machines were nearly extinct (427). Not coincidentally, these changes coincided with increasing suburbanization across the developed world and the publication of the Tiebout model. With this, scholarly attention naturally shifted from politics within central cities to politics among metropolitan governments. Like the monocentric model, however, central cities regained some of their former prominence after the urban

resurgence. In particular, scholarly interest grew in studying one of the main innovations of the anti-machine movement: the replacement of strong mayoral governments with manager-council systems. In the former, popularly elected mayors wielded a high degree of executive authority and worked with a democratically elected, but generally weaker, city council. In the latter, the mayor was replaced by an appointed city manager and the council was reduced to a small group of individuals selected via a citywide, non-partisan election. The goal behind this shift was to eliminate the machine and replace it with a technocratic system focused on the city as a whole. By the 1960s, the majority of American cities (and a number of cities abroad) had adopted a manager-council form of government, significantly reducing the reach of urban machines (Lubell, Feiock, and Ramirez de la Cruz 2009).

With the advent of the urban resurgence, researchers have become increasingly interested in the implications of this change. Unfortunately, most of this work has been unconcerned with its economic aspects. At best, a subset has focused on local development policy (i.e., using policies like loan incentives, tax breaks, and aesthetic improvements to grow the local economy). In particular, political scientist Richard C. Feiock has published several studies (with various co-authors) examining the relationship between local executive form and development policy. The first two used survey data on development policies enacted in 516 US cities in 1984 and 1989 to assess differences between manager and mayoral systems. The results indicated that the two executive forms were largely similar in their overall propensity to use such policies, but found that manager-council systems differed in two noteworthy respects: 1) they were less willing to

engage in seemingly opportunistic development policies (broadly, tax breaks financed with bonds); and 2) more reliant on long-term strategic plans to drive development decisions (Feiock and Kim 2001; Feiock, Jeong, and Kim 2003). Following a similar approach, Feiock and a new set of co-authors conducted a third study, this one analyzing the timing of development policy. Using the 1999 and 2004 versions of the same survey, they examined when mayoral and manager systems adopted various development policies, finding that managerial systems were more likely to be early adopters. This was taken as evidence that managers are more innovative and risk-acceptant in terms of development, while mayors wait for policy ideas that are proven (Kwon, Berry and Feiock 2009). A fourth study narrowed the focus, looking at 406 Florida cities from 1998-2003, and examining the local executive's impact on the balance between development policies and those intended to safeguard the environment. The findings here indicated that managers generally exhibited a pro-development bias, while mayors favored environmental protection with an exception for residential building permits. The authors interpreted this to mean that mayors represent the environmental and development preferences of wealthy urbanites, who combine a concern for environmental protection with a strong interest in residential development (Lubell, Feiock, and Ramirez de la Cruz 2009). Finally, a fifth study used a 2004 survey of 274 Florida cities to analyze differences in the use of cost-benefit and fiscal-impact analysis when determining development policies. The findings showed that cities with managerial systems were more likely to use these tools when making development decisions (Ha and Feiock 2011). Looking at these studies as a whole, the dominant finding appears to be that managerial systems pursue

central city growth in a manner true to their technocratic design, while mayoral systems are—for better or worse—more tied to the exigencies of the election cycle. How this affects the actual economic impact of development policies remains to be studied.

Considering the monocentric and urban government literatures as a whole, three relevant features are apparent. First, academic thinking about cities has generally followed the same pattern as urban living: starting in the center, it then moved to the suburbs for a period of time, and has now returned to the center. Second, while this pattern broadly applies to both literatures, post-resurgence studies of urban government have diverged from it in a noteworthy respect: they have evinced much less concern with primary central cities. Instead, the form of government, regardless of where it is being deployed, has become the focus. Thus, whereas primary central cities have more or less continually garnered a great deal of attention from economists, they have become only an indirect concern for political scientists. Third and finally, as evidenced by the mayor vs. manager research, even when central city government is (indirectly) studied, economic implications have been left out of the analysis. Consequently, it is apparent that the connection between primary city governments and economic outcomes examined in urban machine scholarship has yet to translate to modern metropolitan studies. Combined, these observations show that the current state of knowledge regarding primary central cities and the economy is similar to that for territorial competition: prior research reveals a likely connection, but has left its precise nature unclear.

The likelihood of a relationship is not the only point of connection between the two institutions. Primary city government is the most plausible representative of the

opposing pole of territorial competition: local government centralization. This is apparent when one considers its characteristics. Specifically, an urban area's primary central city is generally its founding settlement, most populated territory, and central business district. This gives it two features essential to achieving the efficiency gains associated with centralized government: 1) a large pool of revenue (usually the largest in the metropolitan area) and 2) an unrivaled administrative capacity. Using these tools, it can deal with large-scale projects and externalities better than any of its counterparts. Primary city governments also manifest the downsides of centralization. Because of its role as population center and business hub, the primary city is also an MSA's most broad-based government. This means that its politicians must build coalitions across a range of (often competing) interests. The compromises required to manage this naturally reduce the capacity to enforce the sort of strict public goods boundaries implied by fiscal equivalence. Thus, the primary city government embodies the inverse of the territorial competition trade-off: it has the funds and organizational capacity for large-scale and regional endeavors, but a diminished capacity for fiscal equivalence. As with territorial competition, disentangling how this generally impacts metropolitan economies will require a careful consideration of how the trade-off functions under various local economic conditions. When this relationship to territorial competition is considered alongside the above research, such an effort seems likely to yield significant insight into the fate of metropolitan economies.

III. Special-purpose Governments

The third institution with potential economic implications is a relatively recent innovation in local government: the special district. Special districts are specialized governments that exist alongside general-purpose units like cities, municipalities and townships, but are administratively and fiscally independent of them. They deliver services that are not supplied by these more general entities, and usually have a single function. Specific services provided range from basic social needs such as water and electric utilities, to obscure tasks like mosquito abatement (Burns 1994). While they are functionally specialized, districts are geographically flexible. In their early implementation, they were generally used to create metropolitan-wide services. Over time, however, more and more localized variants have become popular, down to the neighborhood level in some cases (Foster 1997, 15-6). This combination of features makes special districts a hybrid of territorial competition and primary central cities. Like territorial competition, districts offer a form of flexible boundaries (in their case, the boundaries actually are flexible, as opposed to functionally flexible because of citizen mobility). In combination with their limited scope (i.e., single-function), they approach the ideal of fiscal equivalence. Like primary central cities, however, they also have the capacity to provide large-scale and regional public goods, depending on their design. Given these characteristics, it is natural to ask: are special districts a supremely efficient form of local government? To answer this question—and to assess the relationship to local economic outcomes in general—in this section I review research on the economic implications of special districts. Rather than a set of articles, the special district literature

is dominated by three book-length studies: Nancy Burns' (1994), Kathryn A. Foster's (1997), and Christopher R. Berry's (2009). Each scholar is a political scientist working from a political economy perspective. As a result, the economic import of special districts is a prominent theoretical element in each. Despite this, tests that directly examine the relationship between districts and local economic outcomes are largely absent, and thus the precise nature of any empirical relationship to the economy is left unclear. While the studies do not answer that question, each documents a significant downside of using district governments: a severe lack of democratic accountability. As Christopher Berry's study demonstrates, this characteristic, when combined with the single function, results in a systematic tendency to over-tax. With this added information, districts are best understood as operating in a manner similar to the other two institutions, and should therefore be studied similarly (i.e., with careful consideration of the local economic conditions that plausibly explain when one side of the trade-off or the other dominates).

Compared to territorial competition, scholarly interest in special districts is fairly recent. The most widely cited study dealing with the subject was published in 1994: Nancy Burns' *The Formation of American Local Governments: Private Values in Public Institutions*. In it, Burns set out to understand why Americans form local governments. In surveying historical trends, she found that addressing this question meant accounting for three puzzling outcomes: 1) Americans created more local governments in the twentieth century than they had during the country's entire history; 2) while this increase applied to every type of local institution, special district formation was nearly twice that of traditional governments during this time; and finally, 3) the geographic pattern of

formations did not align with population increases or movements (4-6). Combining the patterns, Burns noted that the incongruence with population made an explanation based solely on service demand insufficient, while the change in institutional preferences suggested supply-side factors were at play. To deal with these issues, she proposed a two-part explanation premised first on the incentives and collective action capabilities of business interests, and secondarily on more diffuse social forces like class and racial preferences.

If the creation of local governments is not simply a mechanical response to population increases or shifts, what drives their formation? We can begin to answer this question if we recognize the process is a political one and if we consider that even after 350 years, efforts to form cities and special districts remain time-consuming, prone to failure, and expensive. Given these hurdles, only certain individuals and certain kinds of groups will have the interest and the resources necessary to succeed in these formation efforts. Businesses—developers and manufacturers—have led many of these efforts within the incentive structures defined by state and federal governments. In so doing, these businesses have created congenial regulatory climates, congenial tax climates, and mechanisms for increasing the value of land at slim cost to developers. In the process, these businesses have enabled middle- and upper-middle-class citizens to acquire services, to keep their taxes low, to wall out the poor, and to indulge their taste for racial exclusion (5).

To test her theory, Burns conducted a historical analysis of US local government formations and analyzed data on the number of general- and special-purpose governments in US counties.

The historical analysis tracked changes in the uses, form, and reasoning behind local government formations since the 1600s. The record showed a progression from entities established to limit access to territories (particularly for the poor and racial minorities), to vehicles for service provision and investment (44-58). Special districts entered into this process in the 1930s as a means of circumventing municipal bond limits.

A function of the rash of municipal bankruptcies in the late nineteenth century, bond limits became the source of a renewed outbreak of defaults with the onset of the Great Depression. To avoid this, the Roosevelt administration encouraged their formation as an alternative means of raising such revenue (53). Once established as an acceptable, less regulated alternative to general government services, land developers and businesses further encouraged their formation as a means of obtaining tailored services. This became especially prevalent after World War II, Burns notes, because the nature of manufacturing combined with new transportation infrastructure to create unprecedented locational freedom for American industry (54). The historical analysis therefore indicated that business interests were largely behind the continued growth in special districts, explaining a significant portion of the three puzzling outcomes that motivated her study.

Burns' data analysis focused on determining the relative importance of economic and cultural factors in government formations. Specifically, she ran Poisson regressions examining how the number of US municipalities and special districts (between 1950 and 1980) varied in relation to: population (proxy for service demand), taxes, and the degree of racial segregation. The results indicated that demands for services and lower taxes drove special district formation throughout the postwar period, while race only had a relationship to special districts in the 1950s. Municipalities displayed nearly the opposite relationships: citizens formed them in response to population shifts in the 1950s, but not in later decades, while a relationship to racial exclusion existed throughout the period (75-95). Taxes were the exception, as they were increasingly related to municipality formations after the 1960s. As Burns states, "By the 1980s, walling out higher taxes

appears to have been virtually the only reason citizens created news cities." (80). The statistical results therefore aligned with the historical analysis, showing that special district formation stood out in its relationship to business-oriented policies. Critical to this study, she did not take this further to examine the relationship between special districts and local economic outcomes.

Burns analysis proved enduring, producing what has been described as "...the political-economic framework that has become the dominant explanation for understanding the formation of local governments" (Carr 2006, 481). Such success has naturally engendered a good deal of response, much of it focused on the portion of the analysis related to special districts. The major follow-up study in this regard was Kathryn A. Foster's (1997) *The Political Economy of Special-Purpose Government*. Moving away from Burns' inductive approach, Foster analyzed the growth and impact of special districts from the perspective of four well-known urban political economy theories: 1) institutional reform; 2) public choice; 3) metropolitan ecology; and 4) structuralism.

The first theory examined by Foster was the institutional reform view. Scholars working from this perspective argue that metropolitan-wide governance structures are the key to efficient service provision and better economic performance. In particular, adherents to this view emphasize the regional nature of the local economy and derive from this a need for region-wide public goods. The economy is therefore hindered to the extent that services are insufficiently scaled and/or coordinated in response to regional demands. The impetus for special districts, according to reformers, comes largely from a demand-side recognition of this problem. Districts are therefore understood as the

outgrowth of metropolitan institutions failing to provide regional goods. Despite a sympathetic understanding of their formation, reformers view districts as obviating the need to develop a more capable and democratically responsive regional government. They therefore expect district growth to negatively impact local economies in the long run (28-33; 124-8).

The second perspective analyzed by Foster was public choice. Scholars from this school take a Tiebout-inspired approach to local government, highlighting the importance of interregional competition for local economic performance. According to Foster's reading, these theorists categorize special districts as competition—and therefore economy-enhancing, and view district growth as an efficient response to increasingly heterogeneous and sprawling services demands. Public choice theorists therefore see the proliferation of special districts as a boon for local economies (35-9; 124-8).

Foster's third theory was metropolitan ecology. These theorists explain the characteristics of metropolitan areas as a function social group competition over space, particularly in response to immigration. As Foster explains, "Ecologists observed that places undergoing invasion and succession experienced instability and social disorganization, manifested in high rates of crime, juvenile delinquency, and unemployment" (41). As a result of this view, ecologists argue that metropolitan areas thrive when the territory is governed such that group identities and niches are preserved, while resources are efficiently and fairly distributed. Scholars adopting this perspective are ambivalent about the economic impact of special districts, arguing that they are beneficial to the extent that they allow communities flexibility in meeting diverse service

needs, but criticizing their long-term impact to the extent that they shield public goods from the intergroup democratic process. Similar to the reformed view, ecologists view district formation as an attempt to circumvent metropolitan political structures that thwart group imperatives (i.e., they are a response to already failing institutions). These include laws that make it harder for new communities to alter or tailor their services, as well as regulations that hamper efforts to pursue these ends through more democratically accountable regional institutions (42-6; 124-8).

The final perspective discussed by Foster was "structuralist," a label she used to capture Marxist approaches to local governance. In this view, special districts are a means for capitalists to direct public resources to their ends. They therefore grow as a function of business demand, especially from property developers. Following the Marxist literature on the state, structuralists cast special districts as rentier institutions that produce short-term economic growth, but eventually lead to fiscal stress and decline (47-51; 124-8).

To test each approach's claims regarding the determinants of districts, Foster ran log-log regressions with the number of MSA special districts in the US as the dependent variable. In contrast to Burns, she only used data for the year 1987. The institutional reform view was tested by regressing this variable on measures for the number of municipal governments and the average population size per suburban municipality. This assessed the claim that districts form to deal with existing fragmentation. The public choice perspective was assessed using variables for metropolitan population growth since 1970, the percentage of the metropolitan population in unincorporated areas, and the

spread of the area's income distribution. These measures captured the notion that districts are a flexible means of providing services to a diverse and fast-changing population. Metropolitan ecology was examined with variables measuring the number and severity of state restrictions on municipal annexation, autonomy, and incorporation. These tested the claim that states where it is more difficult to join, form, or use municipalities incentivize special districts as alternative means of meeting group service demands. Finally, the structuralist perspective was analyzed with a variable for the number of developer firm equivalents per 10,000 in an MSA. This tested the view that special districts are primarily a means for businesses engaged in property development to obtain services outside of the democratic process (124-8). The results did not provide conclusive support for any of the theories. Specifically, districts increased in conjunction variables representing three of the four perspectives. Only the structuralist variable was statistically insignificant (142).

To examine claims regarding the effects of special districts, Foster looked at the relationship between district use and local government spending, both in terms of its level and substantive focus. For each, she again analyzed the 1987 cross-section, but this time also included a second cross-section where these results were compared to data from 1962. For the spending analysis, Foster conducted mean comparison tests demonstrating higher overall expenditures in metropolitan areas with a higher proportion of district spending (150-85). She then examined how well the four perspectives account for this finding. Specifically, Foster looked at how this finding holds up after controlling for: the proportion spent on capital-intensive spending projects (which are generally more expensive); district multiplicity (associating more special districts with more overhead);

and demand-side factors (spending increases due to population size and diversity) (165-74). She argued that a clear relationship to capital spending recommends a structuralist explanation, strong effects from district multiplicity point to the inefficiency arguments of reformers and ecologists, and increases associated with demand-side variables support the public choice perspective. Once again, the results did not indicate a clear winner. Variables representing each rendered the district-spending relationship spurious under different model specifications, but none did so consistently (183-4).

A similar method was used to analyze the relationship between district use and spending priorities. Specifically, Foster demonstrated a positive relationship between local spending via district and spending in service areas provided by districts. Examining this in relation to the four perspectives, she then analyzed how well this finding held up within three specific service categories: development (airports, water, sewer, etc.), housekeeping (fire protection, parks and recreation, sanitation, etc.), and social welfare (hospitals, subsidized housing, welfare assistance, etc.). In this case, however, the analysis was not meant to distinguish between each of the four theories. Instead, Foster argued that evidence of bias toward development and housekeeping (and against social welfare) would constitute support for the general spending priorities proffered in the ecological, reform, and structuralist theories. In particular, she reasoned that each of these theories characterizes districts as undermining broad-based spending priorities, like social welfare, and bolstering wealthy special interest priorities, like development. (In contrast, she argued that public choice proponents saw spending bias as merely reflective of democratic preferences, and therefore made no prediction one way or the other). Using

difference in proportion tests, Foster found that special districts do indeed bias local government spending toward development and housekeeping, and away from social welfare functions (203-14). Thus, the negative policy effects predicted by three of the four theories were found to have some empirical backing.

In the end, Foster concluded from her study that special districts could not be understood with a single theory. Rather, districts come in a variety of types and are formed for a variety of purposes. Two aspects of these findings are especially relevant to this study. First, Foster's examination of the effects of special districts was limited to the level of local taxation and the distribution of services. As with Burns, the relationship to the performance of the local economy was not directly assessed. Second, while clearly demonstrating the complexity of the causes underlying district formation, Foster's analysis of their after-effects ended up substantiating Burns' more simplified, business-based framework (e.g., districts channel funds to development and housekeeping services). Thus, while demonstrating that districts are more varied in their uses than Burns allowed, Foster's study did not similarly expand upon their economic implications.

The final study, Christopher R. Berry's (2009) *Imperfect Union: Representation and Taxation in Multilevel Governments*, also utilized a deductive approach, but stayed within a single theoretical perspective. Attempting to correct what he viewed as a long-standing misapplication of the Tiebout model to special districts, Berry developed an alternative public choice theory specifically designed to explain their role in local government. The motivating insight for his model came from a more realistic look at district geography.

I do not doubt that competition among local governments for mobile residents and capital is a powerful, efficiency-enhancing force. But I do doubt that the competitive model of government applies well to most special-purpose jurisdictions. In fact, I contend that the multiplication of single-function governments undermines, rather than enhances, interjurisdictional competition. The reality is that the proliferation of governments in the United States has resulted largely from the vertical layering of jurisdictions on top of one another rather than the partitioning of territory into competing units. Jurisdictions that share the same borders do not compete for mobile resources. Rather, they possess the authority to provide services to, and levy taxes on, the same people. Seen from this perspective, the two defining characteristics of single-function governments are territorial overlap and concurrent taxation (6-7).

Thus, rather than dynamic new entrants into the marketplace of service provision, Berry argued that special districts were better understood as additional layers on top of an already existing bureaucracy. As a result, he did not view their growth as a response to economic and social imperatives, but instead cast them as an outgrowth of special interests seeking to maximize their share of common-pool resources.

To provide such an account, Berry first laid out utility functions for both interest group members and politicians. The optimal outcome for each was straightforward: local group members seek to maximize funding for their pet service while minimizing the individual cost, and local politicians seek a distribution of services that will maximize their expected vote share given the bundles offered by alternative candidates (52-6). He then examined the results these functions produce in general vs. special district settings. Under a general-purpose government, politicians optimize votes by allocating funds across a number of services, each of which is a vote-determining issue to a particular set of constituents. To do this, he or she must calculate funding trade-offs over multiple service interest groups (i.e., how many votes are gained by spending 'x' dollars on service 'y' vs. how many are lost via foregone opportunities that rival candidates will champion).

In deciding what services to fund, candidates seek voter groups for whom they can maximize the difference between the utility they provide, and that on offer from rivals. These differences are also weighted by variables for turnout propensity and responsiveness, where responsiveness refers to the degree of policy change necessary to switch candidates at equilibrium. Higher levels of either increase the importance of that voter's utility difference in the candidate's optimization problem. The result is a model where candidates target likely voters, but also seek to maximize voter utility. Importantly, while uncertainty and changes in voter characteristics drive continual political competition, the model has a unique equilibrium in which the winning platform maximizes social utility (52-6).

Under a special-purpose government, the result is the same as long as the weights for voter participation and policy responsiveness remain unchanged. That is, if a general and special government serve the same set of voters, Berry's model predicts no difference in the policy outcomes from either institution. This is because candidates examine each interest group individually (i.e., dimension by dimension) and weigh meeting their demands as a function of votes won and lost from the entire electorate. If the policy/service decision is reduced to one dimension, the result is unaltered as long as the candidate's optimization function takes the same set of voters into account. Berry argues, however, that special districts and general governments generally serve different sets of voters. Citing evidence of low visibility and turnout (e.g., 2-14% of the electorate in one study), he claims that voter participation in district governance is exceptionally low

(Berry 2009, 64-5).¹ Applied to the model, this means that the electorate's turnout and responsiveness weights are systematically lower in special district elections. The result is what Berry terms selective participation, or a systematic over-representation of the pro-service interest group in special district elections. When this occurs, the candidate's optimization problem converges to that of the interest group, whose members experience the maximum individual benefit from the service while still paying the same price as all the other taxpayers. Because of this, candidates for special district office find that maximizing votes means spending more on the service than would otherwise be beneficial in a general-purpose setting, producing higher overall spending and a clear institutional preference for local interest groups (58-9; 86). Berry's account therefore casts special districts as instruments of increased spending and decreased accountability, consequences that are at odds with the Tiebout model and fiscal equivalence.

The central empirical prediction of Berry's model is that spending on any given service will be higher under a special-purpose government compared to a general-purpose government. To test this, he analyzed the impact of special districts on the level of per capita own-source revenue in US counties. Using data from 1972 to 2002 (in five-year intervals), Berry employed panel regressions with fixed-effects as well as instrumental variables to find the average within-county relationship. Rather than a pure

¹ Burns offers an instructive anecdote concerning district visibility: "My own search for special districts in the county where I lived when I began this study (Middlesex County, Massachusetts) was a complete failure. I spoke with all the local government offices in the "blue government pages" of the Boston area telephone book, none of whom could tell me the boundaries of special districts in Middlesex County and none of whom could even tell me the names of the districts that governed me. I spoke with the city planner, the county planner, and the state planner. All of the planners said that it would only take a few phone calls for me to learn the boundaries of the districts; it is unclear to me where else I should have called. The one bona fide special district government office with which I spoke denied being a government and assured me that it was only an agency" (12-3).

count of districts, he divided the number of special-purpose governments by the number of general governments in each county. This produced a measure he called "jurisdictional overlap," reflecting the notion that districts create additional bureaucratic layers rather than intergovernmental competition. The results showed a positive, statistically significant relationship between overlap and local tax revenue across multiple specifications. This was true with the basic overlap variable, as well as an instrumental variable measuring the number of permissible district types in each state (used to test for reverse-causation) (Berry 2009, 89-128).

Attempting to shed light on the meaning of this effect, Berry next compared the performance of special districts and general governments when providing library services. Using publicly available data from a survey taken between 1992 and 2004, he regressed measures for book collections and staffing on an indicator for whether or not the library was administered by special district or general government (along with various controls). The findings indicated that while special districts had a positive, statistically significant effect on employees per capita, they were associated with reduced: books per capita, employees with librarian credentials, and average wages (Berry 2009, 129-39). The negative impact on staffing filtered down to performance, where circulation and visits per capita were demonstrably lower, while cost per circulation and cost per visit were higher (144). Overall, Berry's empirical analysis not only verified the central claim of his model—that districts lead to increased taxation—it went a step further to show that, in at least one prominent service area, the extra revenue this creates does not result in higher quality services.

Compared to Burns and Foster, Berry's analysis of specialized governance provided the most developed theory. His model offered both a compelling story of their origination—interest groups seeking to maximize funding—and of their effects—higher revenue than would otherwise be obtained. His empirics were also the most thorough: using panel models to take advantage of data from multiple years, deploying an instrumental variable to check for reverse causation, and extending the analysis to examine service performance as well as funding. Most important for the this study, Berry shifted the ground from the business/developer approach suggested by Burns and Foster to an understanding based around special interests in general. This took the emphasis off the relationship between districts and the economic and social demands of the community, and placed it on the machinations of small groups of self-interested actors. Thus, relative to Burns and Foster, Berry's analysis is less ambiguous about the local economic implications of special districts: they should harm local economic performance by increasing taxes without enhancing the quality of the investment. Nonetheless, like his predecessors, he did not directly examine this relationship.

Collectively, these studies provide four pertinent pieces of information. First, special districts have significantly altered the landscape of local governance, particularly in the US. Second, because districts are relatively undemocratic, they provide their operators with both a high degree of control and a dangerous capacity to impose seemingly hidden taxes. Third, while it has proven difficult to explain the rise of districts, the analyses of Burns and Foster demonstrate noteworthy ties to business interests (e.g., Burns on postwar manufacturers, Foster on development and housekeeping services).

Fourth, despite these ties—and even stronger evidence that districts do indeed increase taxes—their overall impact on the local economy remains unknown and little studied. Given all of this, a link between special districts and the economy is probable, but is likely complicated by the same issue that confounds the other institutions: districts impose a trade-off on the local economy. While not stated as such, the positive side of this trade-off fits well within the fiscal equivalence framing. As the numerous attempts to link special districts to the Tiebout model indicate, districts represent a form of local government competition. Rather than establishing new, adjacent territories that incentivize citizens to sort by public goods preferences, districts use flexible boundaries that can (at their best) incorporate interested citizens wherever they reside. This capacity also allows them to provide large-scale and regional public goods to an extent that even primary cities cannot match. Furthermore, because they serve only one purpose, the need for compromise across a range of interests is eliminated. All of these features combine to make special districts a powerful tool for fiscal equivalence. As demonstrated by Berry, however, there is a downside. When this downside is considered alongside the benefits, the full trade-off becomes clear: special districts offer fiscal equivalence with geographic flexibility, limited compromise, and scalability; but due to lower democratic accountability, they threaten systematic over-taxation. Thus, they fit well with the other two institutions and should be studied with similar attention to the local economic features that tip the balance of this trade-off.

Conclusion

In this chapter, I surveyed prior research on three local political institutions that plausibly impact metropolitan economic outcomes: 1) territorial competition, 2) the primary central city government, and 3) special-purpose governments. Focusing on findings with economics implications, I found likely relationships between each institution and the local economy, but ambiguity regarding their nature. When the results were assessed as a whole, a possible explanation for this emerged: each institution appeared subject to a trade-off that rendered its most general economic impact indeterminate. Specifically: territorial competition enhances government efficiency by facilitating a sorting process that moves local governments toward fiscal equivalence, but compromises the ability to deal with large-scale and regional concerns; primary city governments have the revenue and administrative capacity to offer large-scale and regional public goods, but a diminished capacity for fiscal equivalence due to their centralized, broad-based nature; and finally, special-purpose governments provide fiscal equivalence with geographic flexibility, limited compromise, and scalability, but also lead to systematic over-taxation. Given these conditions, I argued that the ambiguity of prior research was not indicative of a red herring, but instead showed that a more detailed analysis of the local economic factors that affect these trade-offs may be necessary. I take up this task in the next chapter.

Chapter 3: Economic Variables and Hypotheses

Introduction

While the plight of Detroit's founding city stands out, the twentieth century was tumultuous for metropolitan areas across the developed world. At the outset, cities were thriving. With the continued growth in manufacturing and advances in waterborne transit, established urban centers continued their industrial-era ascent and new central cities sprang up across the major waterways of Europe and North America. By the 1950s, however, many of these area's central cities began to experience a prolonged period of decline. Part of this was a function of automobiles easing the burden of suburban living, but the more fundamental problem was the cost of urban labor (Glaeser 2012, 41-64). As economist Edward Glaeser states regarding the US context, "Before World War II, companies put up with high labor costs in Northern cities because the transport network made it so much easier to buy raw materials and ship final products. As transport costs plummeted, it became cost-effective to locate in cheaper places: suburban factories, like River Rouge, Southern right-to-work states, and China" (Glaeser 2012, 50). Glaeser's quote elides sequence, but the order in which he lists locations is roughly chronological. That is, at first, the primary city's loss was usually the suburbs gain, but as time went on, even cheaper locations became viable, putting pressure on metropolitan areas as a whole. These changes were dramatic and devastating, but as noted in the previous chapter, an equally dramatic reversal was underway by the early 1980s. Specifically, primary central cities began to grow again, marking the beginning of a renewal process that continues to this day. Critically, this shift was not associated with a decline in the cost of primary city

labor, but rather an increase (Glaeser 2009). Underlying this was a change in the nature of urban employment. Instead of manufacturing, successful cities were now growing in service industries like finance and high technology, where higher wages were part-and-parcel of a scarce supply of qualified labor. Thus, the forces from this change not only led to renewed growth in cities, but a particular kind of growth: gentrification. Central cities that once thrived because of their proximity to waterways now grew because of the proximity they created for knowledge workers. The economic life of developed world metropolitan areas had come full circle.

It is in the context of this historical sequence that the previous chapter's analysis of local political institutions comes into sharper focus. In particular, by examining the trade-offs derived for territorial competition, primary city governments, and special districts in light of these general patterns of economic change, it is possible to connect the institutions to the economic structure and performance of metropolitan areas. In this chapter, I undertake this task by considering the institutions in light of the empirical literature on urban economic development. Doing so reveals two critical aspects of economic context: 1) the changes described above reflect a general, three-stage sequence of urban growth that is itself rooted in a general pattern of national development; and 2) a significant body of research indicates that the second stage of this sequence is severely constrained in closed-economy settings.

The first piece of economic context is foundational to this study, providing the framework from which testable hypotheses are derived. Specifically, drawing on the three-sector model of national development, I divide the typical urban development path

into three stages: 1) early industrialization, 2) mature industrialization, and 3) post-industrialization. In the first stage, urban areas tend to be dense so that scarce public capital can be shared (especially transportation infrastructure). During this period, strong primary cities and special districts are the institutions most likely to be related to strong metropolitan economies—as both are compatible with high demand for concentrated infrastructure—while territorial competition is likely to exhibit the opposite relationship due to the dispersed, redundant nature of the infrastructure it provides. In the second stage, capital accumulation combines with rising urban costs to incentivize a dispersion of the local economy. During this period, territorial competition is the institution that is logically related to economic strength, while strong primary cities are likely to function as a drain due to their connection with over-concentration. Special districts, meanwhile, are likely to exhibit either a much-reduced relationship to local economic outcomes or none at all. This is because even though their flexibility is useful for new infrastructure, the over-taxation they produce will increasingly undercut this advantage (i.e., districts are accumulating at a metropolitan level). Finally, in the third stage, physical goods industries are displaced by services, leading to renewed urban concentration as skilled service employers seek out knowledge externalities and displaced manufacturing workers follow in their wake. When this occurs, strong primary cities once again have the most plausible association with local economic success, while territorial competition is likely to return to a negative relationship. Special districts should now definitively exhibit a negative relationship, as over-taxation now dominates any benefit from new infrastructure/services.

In conjunction with this sequence, the second piece of economic context helps to illuminate the set of economic variables appropriate for testing this argument. Looking again at the national institutions diagram, these can be separated into two types: structure and performance.

Political Institutions —————> *Economic Structure* —————> *Economic Performance*

In the national literature, economic structure refers to the relative importance of private vs. state direction in the economy (i.e., capitalist, socialist, mixed, etc.). Local institutions do not possess a similar capacity or propensity for intervention. As is evident in the stages, however, local institutions do possess plausible connections to the sectoral makeup of the local economy. That is, there is a likely relationship between a metropolitan area's relative strength in a particular institution and its capacity to host the dominant sector of each stage. If accurate, growth-related institutions in the first two stages should be related to measures for manufacturing, while in the third they should be associated with variables for the service sector.

Turning to performance, the tie to economic openness reveals that the relationship between metropolitan institutions and growth has two distinct facets: overall and international. Overall performance is straightforward, referring to the metropolitan equivalent of national GDP. International performance is more complicated. Because open trade appears to be a necessary condition for stage-two de-concentration, its role must be considered alongside the infrastructure and congestion cost forces described in the three-stage framework. Doing so reveals that import competition is a critical force in stage two. Considering this further highlights a previously unconsidered source of institutional variation: the degree of fiscal independence. Because territorial competition

requires establishing separate, multi-function governments, it offers a greater degree of independence than can be obtained with special districts (which still ultimately depend on general governments for services). For industries facing significant import competition during stage two, this greater separation may be especially attractive because it represents total extrication from primary city taxes. If accurate, this indicates that the emergence and effectiveness of territorial competition is uniquely related to an urban area's international trade position. Because of this possibility, international performance merits inclusion as a separate variable. Overall then, the three-stage sequence and open economy condition indicate that the three institutions have hypothetical relationships to four metropolitan economic variables: the size of the manufacturing sector, the size of the service sector, GDP, and international competitiveness.

In the following sections, I lay out the two components of economic context in greater detail. In the first section, I review the literature for the three-stage sequence and discuss its application to metropolitan areas. In the second section, I provide a similar overview for the literature connecting urban expansion and contraction to international trade. In the third section, I lay out the full set of variables in a metropolitan version of the national institutions diagram. Finally, I end the chapter with a brief conclusion.

I. Urban Economic Development: A Three-Stage Approach

The first source of economic context for the three institutions is the stage of national development. The use of stages to describe economic development is an old practice. The best-known version of development stage-theory is economist Walt Rostow's (1962) *The Stages of Economic Growth: A Non-Communist Manifesto*. In it, he

argued that societies move through five stages as they transition from traditional to industrialized, mass consumption society. While influential, Rostow's approach was swiftly criticized. The most devastating pushback came from Alexander Gerschenkron. In his 1962 classic *Economic Backwardness in Historical Perspective*, Gerschenkron took issue with the linear approach adopted by Rostow (and others). By examining the particulars of the industrialization process in countries like Germany and Russia, he was able to demonstrate that late-industrializers did not follow the stage progression, thus falsifying the theory. In conjunction with the growing prominence of the Solow model, Gerschenkron's criticisms greatly reduced the prevalence of deterministic, stage-based understandings of development. While this form of stage-based thinking has declined, an older, more descriptive form has found greater success: the three-sector model. In this section, I review the logic of this approach, briefly discuss its scholarly evolution, and propose an application to MSA economies. Using this information, I then lay out how the institutional trade-offs highlighted in the previous chapter are likely to function within this framework, concluding with a derivation of specific, stage-based hypotheses.

Developed by economists Alan Fisher (1939), Colin Clark (1940), and Jean Foursatie (1949) in the 1940s, the three-sector model casts economic development as the gradual shift of economic resources between three sectors: in traditional society, the bulk of an economy's resources reside in the primary sector (agriculture, mining, etc.); when industrialization occurs, the secondary sector (manufacturing) takes over; and finally, after sufficient capital accumulation, the majority of economic activity shifts into the tertiary sector (services). In Fisher and Clark's formulations, these changes were driven

by demand shifts. In particular, because the shift from agriculture to manufactures aligned with the satiation of nutritional needs, they assumed a similar process would drive the shift from manufactures to services. In the 1960s, William Baumol introduced an alternative, supply-side explanation. Best expressed in his 1967 article "Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis", he argued that the movement between sectors was driven primarily by technological change, particularly the progressive mechanization of primary and secondary production. He noted, however, that such productivity-enhancing technologies were far more limited in the service sector. This had three implications: 1) it cast the service sector as an end point for economic development, with mechanization gradually pushing labor into the service sector over time; 2) it raised the prospect of a trade-off between the wage-depressing effect of more service workers and the wage-increasing effect of labor competition from sectors with relatively high productivity growth (i.e., Baumol's cost disease); 3) to the extent that the latter wins out, it portrayed the service economy as a dismal end point for development. Baumol used the third implication to explain what was, at the time, a growing crisis in urban public revenue. In particular, he argued that the costs of municipal services rise in proportion to the increasingly productive manufacturing sector. But, because service productivity remains flat, this leads to a scenario where maintaining even a constant level of services requires ever-increasing revenue. From the perspective of urban political leaders, this generates an unaccountable, perpetual budget crisis.

More than one reform mayor has taken office determined to undertake a radical program to deal with the city's difficulties and found himself baffled and stymied by the monstrous deficit which he discovered to be hanging over him, a deficit whose source appeared to have no reasonable explanation... Since there is no

reason to anticipate a cessation of capital accumulation or innovation in the progressive sectors of the economy, the upward trend in the real costs of municipal services cannot be expected to halt; inexorably and cumulatively, whether or not there is inflation, administrative mismanagement or malfeasance, municipal budgets will almost certainly continue to mount in the future, just as they have been doing in the past. This is a trend for which no man and no group should be blamed, for there is nothing that can be done to stop it (422; 423).

While the demand- and supply-side explanations are not mutually exclusive, the supply-side argument proved—for a time—the more empirically sound explanation of the three-sector model (Fuchs 1968).

The early success of Baumol's interpretation prevented the three-sector model from disappearing entirely in the shadow of Solow (Schettkat and Yocarini 2006; Nordhaus 2008). In the 1990s, however, the empirical ground under Baumol began to shift, bringing sectoral shifts into the limelight again. In particular, two pieces of contradictory evidence emerged: 1) a set of services previously considered stagnant began to evince a record of impressive productivity growth; 2) these same services appeared to play a significant role in the post-1980 urban resurgence. The first observation is generally associated with the spectacular growth in business services, finance, insurance, and real estate. This is apparent in the available measures. Table 3.1 shows the average productivity growth rates in the OCED for a range of sectors during this era.

Table 3.1: OECD Sectoral Productivity Growth (1990-2004)

Sector	Productivity Growth (%) (Average, 1990-2004)
Manufacturing	2.20
Hotels and Restaurants	1.21
Wholesale and Retail Trade	1.32
Other Community and Social Services	0.91
Education	1.54
Health	1.92
Public Administration and Defense	1.57
Transport and Storage, Communications	2.01
Financial Intermediation	3.23
Business Services	3.68
Whole Economy	1.66

Source: Reproduced from Wren 2013, 7.

Certain services—like restaurants and retail trade—did indeed evince productivity growth significantly below that of manufacturing, but others—like financial intermediation and business services—were well above it. Importantly, as the compiler of this data—political scientist Anne Wren—notes, "It is no accident that, by and large, these are also the service sectors in which the diffusion of the new information and communications technologies (ICT) has been largest" (7). As was noted in the previous chapter, growth in these same industries played an important role in the re-birth of the urban economy. While the literature explaining this resurgence focuses largely on the makeup of modern urban workers (i.e., education/skill level), the statistical results indicate that the growing (urban) concentration of such workers went hand-in-hand with high-productivity services. Economist Jeffrey C. Brinkman (2014) offers a useful description of the US landscape in this regard.

Skilled workers have long been overrepresented in large cities. However, the correlation between the skill level of the workforce and city size grew significantly between 1980 and 2010. In addition, industry composition changed drastically, in particular regarding the decline of manufacturing, which accounted for 20 percent of [MSA] employment in 1980 and only 12 percent in 2010. These losses were largely made up through employment gains in service sectors,

including health care, education, business services, and professional services (1). He goes on to further decompose the service employment gains, finding that the largest share—35%—came from census category for finance, insurance, and real estate services alone (5). Thus, as the service transition progressed, it did not go according to Baumol's theory. Instead, it was associated with impressive productivity gains and swelling urban public revenue. Combined with the structural transitions of newly industrializing countries, this unexpected outcome renewed interest in in the sectoral changes described by the model, a trend that continues at the time of this writing (McMillan and Rodrik 2011; Buera and Kaboski 2012; Wren 2013; Piketty and Zucman 2014).

As is apparent from Baumol's article, researchers have long been interested in the impact of the services shift on urban areas. Curiously, similar interest in its industrial antecedent took much longer to materialize. This is perhaps attributable to a misleading emphasis on regions. Specifically, the most prominent analysis at the time of Baumol's writing was Jeffrey G. Williamson's (1965) "Regional Inequality and The Process of National Development." Williamson observed that when a country initially industrializes, the sectoral shift tends to be concentrated in a few areas, rapidly producing a stark divergence in income and wealth. Over time, however, the industrial forces diffuse to the less-developed regions, generating an equalizing convergence. For Williamson, the driving force behind this process was efficiency. Specifically, an efficient allocation of economic infrastructure requires concentration when capital is scarce (i.e., during early industrialization). As capital accumulates, however, it becomes feasible for outlying areas to industrialize. This combines with rising costs in the already-industrialized regions to

incentivize diffusion. Williamson argued that this helped to explain Kuznets' familiar inverted-U pattern of inequality (1955). In part because of the connection to Kuznets, Williamson's theory has received a great deal of testing, with generally positive results (Barro and Sala-i-Martin 1991, 1992; Sala-i-Martin 1996; Brulhart and Sbergami 2009).

Even though the regional hypothesis holds true, in the mid 1980s, research on developing country industrialization began to reveal the inadequacy of such a high level of analysis. In particular, when examining East Asia and Latin America, scholars noted that urban areas actually drive the regional pattern (Parr 1985; Fujita and Thisse 2002). That is, when national industrialization begins, the growth is not just concentrated in a small number of regions, but a small number of cities (again, to conserve infrastructure capital). As with regions, the ensuing economic success eventually leads to rising land and wage costs (i.e., congestion), stymying further growth. To overcome this, a period of urban de-concentration takes place, spreading industrialization to both suburban areas and entirely new cities (generally in different regions) (Henderson 2000, 2002, 2003; Bertinelli and Black 2004). With this refinement, interest in the urban impact of the industrial shift picked up, producing a great deal work in what is known as the "agglomeration and growth" literature (Fujita and Thisse 2002).

Putting this research together with the urban resurgence literature, a useful relationship emerges between the three-sector model and MSA economic development. It consists of three stages: 1) early industrialization, 2) mature industrialization, and 3) post-industrialization. In each stage, the relationship between the growth sector of the economy and the metropolitan infrastructure best suited to host it changes. In the first

stage, manufacturing is ascendant, but the infrastructure capital necessary to support it is scarce. This generates an incentive for firms and local politicians to coordinate on concentrated, large-scale metropolitan infrastructure. In the second stage, manufacturing is still the dominant sector, but capital accumulation has made it possible to de-concentrate. Combined with growing congestion costs, firms and local politicians are now incentivized to spread out into lower densities. In the third stage, services displace manufacturing as the growth sector. Due to the first two stages, an array of metropolitan densities is now available, diminishing concerns over capital and congestion costs. In their place, service firms substitute a concern with generating and sharing in knowledge spillovers. This creates an incentive for firms and local politicians to re-invest in the large-scale, concentrated infrastructure from stage one.

As is apparent from manufacturing's primacy in two stages, this does not represent the full spectrum of the three-sector model. Rather than three sectoral phases, only two are examined, with the industrial transition occupying two stages. This is both a matter of scope and accuracy. Concerning the former, changes within the preindustrial urban economy are outside the purview of this study. Regarding the latter, the above research indicates that industrialization is associated with two noteworthy changes in metropolitan infrastructure: one in comparison to agrarian society, and one after sufficient capital accumulation. Thus, capturing each phase of the three-sector model would require four or more stages. Because this is outside of the scope of this study, only two sectoral phases (spanning three stages) are represented here.

With the economic context provided by this framework, it is now possible to

make more precise predictions regarding the local institutional trade-offs. As a reminder, the three institutions and their attendant trade-offs are:

- 1) **Territorial Competition:** fiscal equivalence via competition for mobile citizens; reduced capacity for large-scale and regional endeavors due to geographic fragmentation.
- 2) **Primary City Government:** large-scale and regional public goods via revenue and administrative capacity; diminished capacity for fiscal equivalence due to centralized, broad-based nature.
- 3) **Special-purpose Government:** fiscal equivalence with geographic flexibility, limited compromise, and scalability; systematic over-taxation due to compromised democratic accountability.

Placing these within the framework yields nine hypotheses, one for each institution and stage. Table 3.2 displays the full set.

Table 3.2: Relationship between Development Stage, Metropolitan Institution, & Economic Outcomes

<i>Development Stage / Metropolitan Institution</i>	Stage 1: Early Industrialization (Manufacturing)	Stage 2: Mature Industrialization (Manufacturing)	Stage 3: Post Industrialization (Services)
Territorial Competition	Negative	Positive	Negative
Primary City Government	Positive	Negative	Positive
Special-purpose Governments	Positive	Positive	Negative

Within each stage, the institution can have either a positive, negative, or null effect on the economy. A positive effect signifies that the beneficial side of its trade-off is dominant, while a negative effect conveys the opposite. It should be noted that the directional prediction refers to two economic outcomes: growth-sector (listed along with the stage in

Table 3.2) and economic performance. This reflects the analogy to the literature on national institutions. Specifically, as discussed in the introduction and expounded upon above, metropolitan institutions are linked to performance via the growth sector. The MSA version of the national model is therefore:

Political Institutions —————> *Growth Sector*—————> *Economic Performance*

Thus, within each stage, institutions first impact an MSA's capacity to host the stage-specific growth sector, then through that effect, its overall performance (more on performance in the next section). Because they are linked in this way, the predicted effects for sector and performance are the same, allowing the nine predictions in Table 3.2 to represent both.

The logic behind the hypotheses is a function of the relationship between the institution's infrastructure capacities, the specific demands of the stage, and the legacy from past development. Using this combination, the explanations for the hypotheses in Table 3.2 are as follows:

Territorial Competition:

- **Stage 1–Negative:** Capital scarcity privileges scale and concentration, both of which are hindered by competition among distinct geographic governments. Therefore, I expect territorial competition to have a *negative* relationship to both the manufacturing sector and overall economic performance during this stage.
- **Stage 2–Positive:** Capital accumulation and congestion from stage one incentivize de-concentration, which aligns well with efforts by adjacent territories to attract new residents via lower congestion and more efficient (i.e., fiscally

equivalent) public spending. Therefore, I expect territorial competition to have a *positive* relationship to both the manufacturing sector and overall economic performance during this stage.

- **Stage 3–Negative:** Service industries displace manufacturing and prioritize density-driven knowledge externalities. This prompts re-investment in large-scale, concentrated infrastructure. Heightened territorial competition once again hinders this, both by representing a higher degree of diffusion from stage two and a greater number of bidders against attempts to re-concentrate infrastructure. Therefore, I expect territorial competition to have a *negative* relationship to both the service sector and overall economic performance during this stage.

Primary City Government:

- **Stage 1–Positive:** Capital scarcity privileges scale and concentration, both of which are well suited to the administrative and revenue capacity of primary city governments. Therefore, I expect strong primary city governments to have a *positive* relationship to both the manufacturing sector and overall economic performance during this stage.
- **Stage 2–Negative:** Capital accumulation and congestion from stage one incentivize de-concentration. The primary city government cannot compete with governments that provide less congested space and are closer to the fiscal equivalence ideal (through competition and/or the elimination of competing policy priorities). Therefore, I expect strong primary city governments to have a *negative* relationship to both the manufacturing sector and overall economic

performance during this stage.

- **Stage 3–Positive:** Service industries displace manufacturing, and prioritize density-driven knowledge externalities. This prompts re-investment in large-scale, concentrated infrastructure. Primary city governments are once again well suited to the task, as they have the region's greatest revenue and administrative capacity. Therefore, I expect strong primary city governments to have a *positive* relationship to both the service sector and overall economic performance during this stage.

Special-purpose Government:

- **Stage 1–Positive:** Capital scarcity privileges scale and concentration. Due to their geographic flexibility and limited functionality, special districts provide an alternative means for large-scale infrastructure without the imperative to compromise with competing interests (as is the case with the primary city government). Additionally, because they have had little time to accumulate and the demand for infrastructure is high, democratic accountability and taxation issues are less severe. Therefore, I expect special-purpose governments to have a *positive* relationship to both the manufacturing sector and overall economic performance during this stage.
- **Stage 2–Positive:** Capital accumulation and congestion from stage one incentivize de-concentration. The geographic flexibility of special districts is again an advantage (i.e., they can be used for region-wide or segmented purposes), as is the elimination of costly compromise. In addition, because

districts are being established in new territories, concerns over democratic accountability and over-taxation remain low. Therefore, I expect special-purpose governments to have a *positive* relationship to both the manufacturing sector and overall economic performance during this stage.

- **Stage 3–Negative:** Service industries displace manufacturing, and prioritize density-driven knowledge externalities. This prompts re-investment in large-scale, concentrated infrastructure. While special districts provide the same advantages as before, the intervening years have led to an accumulation of such governments, worsening the region's democratic deficit and incentivizing over-taxation. Therefore, I expect strong special-purpose governments to have a *negative* relationship to both the service sector and overall economic performance during this stage.

Taking stock, it is apparent that applying the three-sector model to urban economic development yields a more precise set of hypotheses. Specifically, by incorporating information on the stage of development, a source of variation is introduced that predicts opposing effects for each of the three institutions over time. If accurate, this would both clarify the inconsistent findings documented in the previous chapter and provide significant evidence that local political institutions do indeed shape economic fortunes.

II. Urban Economic Development: Closed vs. Open Economy Settings

The second piece of economic context for the three institutions is the relationship to the international economy. The role of international exposure is not intuitive. Rather, it is an unexpected finding that emerged from a set of studies that paralleled the

"agglomeration and growth" literature. Specifically, in the early 1990s, a series of studies were undertaken to explain why industrialization-induced urbanization was more intense and enduring in developing countries than it had been in the developed world. Concerned with the loss in economic growth associated with "excessive urban primacy," these scholars produced a research literature that became known as the "New Economic Geography." In the process, they discovered that a country's level of international trade was the key factor. In this section, I provide a brief overview of this trade finding and explain its import to this study.

The "New Economic Geography" emerged with Paul Krugman's 1991 paper "Increasing Returns and Economic Geography." In it, Krugman presented a model explaining the rise of core and periphery regions in industrial economies as a function of the interaction between scale economies and transport costs. The explanation was rooted in structural differences between the agriculture and manufacturing sector. In particular, because agriculture is characterized by constant returns and intensive use of land, it is distributed diffusely across the array of arable land. In contrast, because manufacturing is characterized by increasing returns and moderate use of land, its distribution will be more concentrated. This reflects both the limitations of scale (i.e., the number of production sites is limited) and efforts to minimize transport costs. Given these constraints, firms will seek to locate in areas with the highest concentrations of demand. Backward and forward linkages reinforce this, with upstream and downstream industries seeking to reduce the impact of transport costs on inputs. The end result is a positive feedback loop where manufacturing firms concentrate near markets and suppliers, and markets and

suppliers concentrate near manufacturing firms. This understanding did not originate with Krugman, but his formalization of it represented a useful new application of increasing returns modeling techniques and allowed for a more precise examination of the driving forces behind urbanization (Krugman 1998; Schmultzer 1999).

As the advent of a new literature implies, the popularity of Krugman's model led to numerous extensions. One of these concerned a relationship between the positive feedback loop and national economic openness. Krugman and Elizondo first noted this connection in their 1996 paper, "Trade Policy and the Third World Metropolis." In it, they argued that the feedback loop mechanism depends to a significant degree on a closed economy assumption. Specifically, they noted that the advantages of locating near domestic consumers are of little use if firms primarily export, as are the advantages of locating near domestic suppliers if inputs are primarily imported. The same logic applies to consumers, who pay the same price for imported goods in the city as they do in outlying areas. The implications from this were clear: openness to the international economy weakens the many impacts of transportation costs, reducing the incentive to concentrate. Critical to the argument here, the impetus for Krugman and Elizondo's argument was not insufficient concentration during early industrial (i.e., stage one), but rather the failure to de-concentrate as industrialization proceeds (i.e., stage two). This is apparent in their description of Mexico City, the illustrative case for their model.

In other words, our story suggests that the extraordinary concentration of population and production in Mexico City, and by extension in other Third World metropolises, was an unintended by-product of import-substituting industrialization. The rough outline of Mexican economic history supports this view. Recent work by Hanson (1992) and Livas Elizondo (1992) shows that before the beginnings of import substitution Mexico City was far less dominant in

Mexico's economy and manufacturing sector than it was later to become, and that since liberalization began in the 1980s there has been a dramatic shift of manufacturing away from Mexico City, especially to the northern states. Admittedly, the Mexican experiment is not as pure as we would like: the northern states are not only less congested than Mexico City, they are also closer to the US border. Our informal argument suggests, however, that much the same history would have unfolded even if there were no special locational advantage to northern production, and that trade liberalization will shrink metropolises in other Third World countries as well (140).

Thus, by blocking trade, import-substitution policies prevented the movement of industry out of Mexico City. Importantly, while this is not emphasized in their description, suburbanization and movement to less crowded cities are substitutes in the model (145-50).

Krugman and Elizondo's work was complemented by Ades and Glaeser's, who in their 1995 paper "Trade and Circuses: Explaining Urban Giants" examined the empirical accuracy of a number of urban primacy theories—including Krugman and Elizondo's.¹ Using a sample of 85 countries between 1970 and 1985, Ades and Glaeser explored the link between urban concentration and: import duties; the proportion of trade in GDP; the proportion of national employment in manufacturing; regime type (democracy vs. dictatorship); and the level of political instability (the number of coups and revolutions). Their aim was to examine whether political connections, trade, or the level of industrialization were primarily responsible for excessive primacy. Specifically, they hypothesized that excessive urban primacy was a function of firms seeking spatial proximity to political power rather than the above trade effects. Firms would prioritize this, they argued, when states are characterized by some combination of: weakly enforced property rights, large-scale rent-seeking, and uneven territorial control. These factors

¹ Ades and Glaeser cite an earlier version of Krugman and Elizondo.

would, in turn, vary with respect to regime type (dictatorships tend to dispense larger rents and expropriate more regularly, raising the importance of close relationships with leaders) and instability (revolutions and coups are correlated with uneven territorial control, meaning stability is likely highest in the power center). The results from their statistical tests revealed support for all three factors. In particular: higher import duties; a greater proportion of trade in GDP; a higher proportion of employment in manufacturing; dictatorial governance; and a higher number of coups and revolutions were all statistically significant predictors of urban primacy (209-13). While Ades and Glaeser used additional statistical tests and case studies to argue for the dominance of the political effect, the overlap with Krugman and Elizondo's work significantly bolstered the trade-concentration connection.

A number of studies have since been conducted on this relationship, with generally supportive results. Moomaw and Shatter conducted the first in 1996, examining urban concentration levels in 1960, 1970, and 1980 for samples of 68, 74, and 90 countries, respectively. They found a statistically significant relationship between exports as proportion of GDP and the percentage of urban population in cities over 100,000. In 1998, Gordon Hanson followed up Krugman and Elizondo's case study by examining the de-concentration of Mexico City after unilateral trade liberalization began in 1985. In comparing pre- and post- reform measures for industry agglomeration and distance to the US, he found that reform was associated with statistically significant reductions in both. In 1999, Karsten Junius released the first study to question the link. Examining a sample of 70 countries in 1990, she found no link between import quotas and the share of a

countries population in its largest 4 cities. In that same year, a study by Rasha Gustavsson took Junius' finding even further, finding a positive relationship between trade barriers and concentration. Examining the share of trade in GDP and tariff and non-tariff barriers in a sample of 34 countries between 1980 and 1990, Gustavsson found that increased openness was associated with an *increase* in the population of a country's largest city. This was the only study to find such an effect. In 2003, however, Moomaw and Alwosabi set out to re-assess Gustavsson's findings using what they considered better variables and a more appropriate panel regression model. Examining 30 countries in Asia and the Americas from 1960 to 1990, they found that the ratio of the largest city population to the second largest was associated with a higher export to GDP ratio; a result that in their view cast significant doubt on Gustavsson's. Finally, the most recent study—Volker Nitsch's (2006) "Trade Openness and Urban Concentration: New Evidence"—has provided the most thorough follow-up to Ades and Glaeser's. Examining 115 countries between 1970 and 2000, Nitsch first replicated Ades and Gleaser's results on a larger sample, then performed several robustness checks. Trade retained its negative, statistically significant effect on primacy after Nitsch's first three tests. These were: 1) adding a control variable for distance to the border; 2) using absolute city size (as opposed to the share of the largest city in the country's overall urban population) as the dependent variable; and 3) changing the primacy measure to include the top five cities in the country's overall urban population (as opposed to just the largest). In line with Junius, Gustavsson, and Moomaw and Alwosabi, however, trade had no discernable effect when measures for import barriers were used in place of the trade-to-GDP ratio. Summarizing

these studies as a whole, there is significant evidence that urban concentration and the level of trade in the national economy are linked, but the role of protectionist policy is dubious. While this may at first appear to cast doubt on Krugman and Elizondo's argument regarding ISI policies, it is important to note that ISI trade barriers were constructed to block competing final products. Imported inputs were generally untouched or even subsidized. A connection to ISI is therefore consistent with these statistical findings.

The trade-urban concentration relationship is important to this study for three reasons: 1) it indicates that economic openness is a necessary condition for stage-two de-concentration, adding to the causes derived from the three-sector model; 2) it highlights the role of import competition, which recent research indicates is especially harmful to local economic performance; and 3) in conjunction with this import research, it reveals a plausible connection between direct import competition and the local institution (special districts or territorial competition) primarily used in de-concentration. The first reason emerges naturally from combining the stage-two forces with the above research. Specifically, alongside the domestic forces of cheaper capital (enabling and incentivizing new investment) and rising congestion costs (incentivizing a new location for these investments), the trade relationship adds parallel international forces in the form imported inputs/consumer goods (enabling firms and consumers to de-emphasize local transportation costs) and direct import competition (incentivizing efforts to both increase capital investment and cut production costs) to the forces driving stage-two de-concentration. Critically, elements of both appear necessary to explain the empirical

patterns: without congestion costs, closed-economy urban primacy would not be associated with lower growth; without imported inputs/consumer goods, de-concentration is (at least) sub-optimally limited. While some combination of domestic and international forces must be at work, the precise mix is not necessarily the same across all MSAs. In particular, some MSAs may be subject to both the enabling and competitive elements from trade, while others will only experience the enabling aspects. Put another way, not all MSAs will face significant increases in direct import competition when the transition from stage one to stage two puts upward pressure on the price of their goods.

This variation in the sources of de-concentration leads to the second relevant feature of the trade-concentration connection: as a source of de-concentrating pressure, import competition appears to be especially powerful. The evidence for this is recent, but convincing. It comes from two papers that re-evaluate the relationship between rising wage inequality and globalization, casting doubt on the view that skill-biased technological change is the dominant factor. The first (and most widely cited) is from David Autor, David Dorn, and Gordon Hanson (2013). Using data from US localities between 1990 and 2007, they examined how employment in industries competing directly with Chinese imports (the largest source of such competition during the time period) affected the local labor market. They found that it was associated with higher unemployment, lower labor force participation, and reduced wages. Most important for their purposes, when the localities were aggregated to the national level, they found that competition from Chinese imports alone was responsible for 25% of the decline in US manufacturing employment during the time period. The finding was significant both for

the evidence it provided that trade is in fact a major driver of rising wage inequality, as well as for the innovative use of local labor market data. The second study is from Ebenstein, Harrison, McMillan, and Phillips (2014). Published shortly after Autor et. al., it substantiated and extended their results. Examining the US Census Bureau's *Current Population Surveys* between 1984 and 2002, Ebenstein et. al. were able to link employment in low-skilled, import-competing occupations to lasting declines in wages (i.e., even after switching jobs). Critically, the relationship disappeared when examining wage effects by industry (as opposed to occupation); a finding the authors used to explain the relative absence of trade effects in previous studies. Together, these findings indicate that direct import competition significantly raises the stakes of stage-two cost cutting. Assuming de-concentration is one of the major means of doing so, this suggests heightened pressure to spread out when import competition is high.

This leads to the third and most important impact from the trade-concentration connection: the capacity to fight import competition via de-concentration may vary according to the local institution used to de-concentrate. In the previous section, I noted that both special districts and territorial competition could be used for stage-two de-concentration. The consequences of this choice were embodied in the internal trade-offs of each. With the added pressure of direct import competition, however, new considerations arise. Namely, the degree of fiscal independence associated with the respective institutions. Territorial competition requires establishing separate, multi-function governments. Special districts, on the other hand, are dependent on the services of general-purpose units. Territorial competition therefore carries with it greater fiscal

independence. In the context of stage-two de-concentration, this distinction is related to the degree of separation from the primary central city. Where MSA firms face greater threats from import competition, the increased separation embodied in territorial competition offers competitive benefits. For example, complete separation from primary city services provides greater immediate savings as a result of leaving the city altogether. It also creates higher expected future savings by increasing the number of firm relocation options going forward. These advantages may reduce firm costs significantly more than de-concentration via district. If accurate, this would give territorial competition a more defined role in the local economy than previously considered, either in this study or in the Tiebout literature.

Overall, the literature on agglomeration and trade reveals that the urban implications of the three-sector model depend to a significant degree on national economic openness. Applying the logic behind this to the three institutions, a hypothetical link between increased import competition and territorial competition emerges. To properly test for this possibility, it is necessary to add a layer to MSA economic performance: international competitiveness. Because international competitiveness is a subset of overall performance, its relationship to the local institutions in each stage should match that of overall performance. That is, where an institution is predicted to have a positive or negative effect on overall performance, I expect it to have the same relationship to international competitiveness. This means that a full set of new hypotheses for international performance is unnecessary. Instead, the role of trade can be captured with one additional hypothesis.

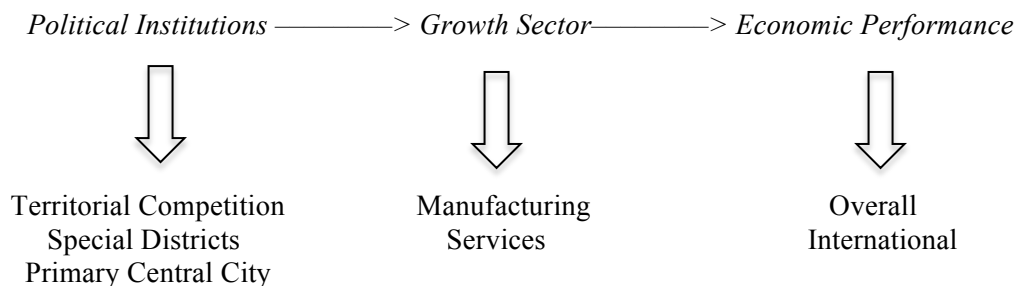
Territorial Competition & Special-purpose Government:

- **Stage 2–Positive:** Because territorial competition provides greater fiscal separation from the primary central city than special-purpose governments, I expect territorial competition to have a *stronger positive* relationship to international competitiveness than special-purpose governments.

While I expect districts and territorial competition to improve both overall performance and international competitiveness in stage two, this hypothesis predicts an additional international effect, one that is pronounced enough to suggest that territorial competition is uniquely tied to import competition. If verified, this would indicate that trade not only drives de-concentration, it also differentiates the economic roles of the institutions associated with de-concentration. Such information would constitute a valuable piece in the causal chain linking MSA institutions to local economic outcomes.

III. Fully Specified MSA Model

With the appropriate local institutions identified and the relevant economic context elucidated, it is now possible to associate the MSA model with precise political and economic components. Augmenting the diagram to reflect this yields the following:



The down arrows relate each concept to its empirical components. In the next chapter, these components will be associated with specific variables, providing further

elaboration. Nonetheless, this is the culmination of the effort to identify an MSA-level analogue to the national-level model linking political institutions to economic performance.

Conclusion

In this chapter, I examined the institutional trade-offs for territorial competition, primary city government, and special districts in light of the academic literature on urban economic development. In particular, I situated the trade-offs within an urban development model consisting of three stages: 1) early industrialization, 2) mature industrialization, and 3) post-industrialization. In each stage, the relationship between the growth sector of the economy and the metropolitan infrastructure best suited to host it changed. From these changes I was able to deduce hypotheses predicting the relationship between each institution and the growth sector within each stage. If the institution facilitated the growth sector during a stage, it was predicted to have a positive impact on economic performance. If it did not, the predicted effect was negative. While this provided a seemingly comprehensive set of hypotheses, an additional branch of the urban economic development literature suggested one more. Specifically, research indicating that trade was necessary for urban de-concentration, but especially burdensome to the extent that it involved direct import competition, drew attention to the differences between territorial competition and special districts as means of de-concentration. The result was an additional hypothetical link between territorial competition and international competitiveness. If accurate, this would provide evidence for a unique, international role for territorial competition in MSA economies. Finally, with the details

of economic context explicated, I related the MSA-level causal chain to the full set of political and economic components. In the next chapter, I will further elaborate on these components by relating them to variables. These will then be used to test the hypotheses and draw conclusions regarding the MSA theoretical framework.

Chapter 4: Testing the Argument

Introduction

In this chapter, I identify variables for the empirical components detailed at the end of Chapter 3 and use them to test the hypotheses derived from the stage theory. To do so, I analyze two panel datasets: one running from 1977-2005, the other from 1969-2005. The former uses data from 363 US MSAs, while the latter uses data from US states. Both datasets straddle the shift from stage 2 to stage 3 in the US economy (similar data is unavailable for the transition from stage 1 to stage 2). The state dataset is used because of the limited availability of MSA-level employment data, which has not yet been digitized prior to 1977. It is therefore included to increase the data coverage of stage 2. What is gained in years, however, comes at the cost of satisfactory statistical inference. Specifically, because MSA-level variables are aggregated to the state level, the point estimates are no longer meaningful indicators of MSA-level changes. To account for this, I divide the independent variables in these models by the number of MSAs in their respective states (i.e., the coefficients indicate the effects of *per* MSA increases on state economic variables), and interpret the results as secondary evidence for findings identified with the MSA data.

In order to test for the presence of stage-driven changes with these datasets, it is first necessary to identify a cutoff year for the shift between stages 2 and 3. Therefore, before running regression models, I first examine data on both the sectoral contributions to growth (i.e., an indicator of the growth sector) and trade position of the US economy as a whole. Looking at time-series plots, I find that 1986 is a reasonable year in which to

test for a structural break in the data. Using this cutoff, I analyze three sets of models for each dataset: an overall model covering all years; a stage-2 model that incorporates a dummy interaction running from the beginning of the dataset through 1986; and a stage-3 model with dummy interactions that run from 1987-2005. Analyzing all six with a dynamic panel estimator, I am able to test for both the presence and direction of relationships among the variables, as well as any stage-based changes in those relationships.

The chapter is organized as follows. In the first section, I list and describe the variables used in the panel models. In the second section, I analyze the sectoral employment and trade position time series to identify the appropriate stage cutoff. In the third section, I explain the panel data estimation strategy. In fourth section, I interpret the results from the panel regression models. In the fifth section, I evaluate the hypotheses from the stage theory, discussing their relevance to both the urban political economy sub-discipline and the broader field of political economy. Finally, I conclude the chapter with a brief summary.

I. Variable Description

Table 4.1 contains a complete list and brief description of the variables used to test the hypotheses.

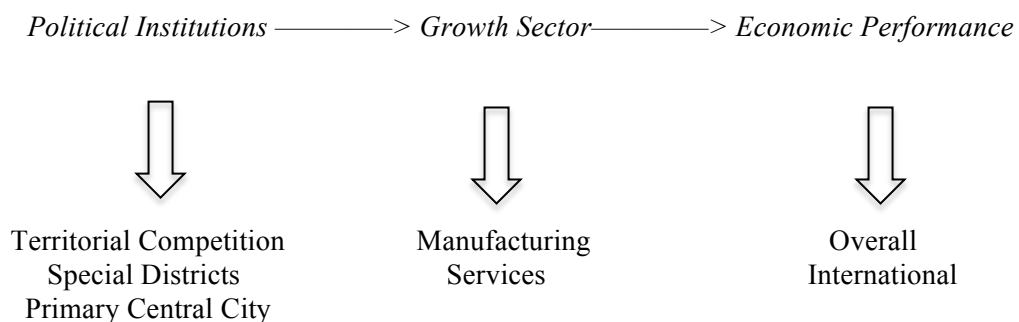


Table 4.1: Variable List

Variable	Source	Units
<i>Overall Performance</i>		
Income	RD	Dollars (in thousands)
Income per Capita	RD	Dollars (in thousands)
<i>International Performance</i>		
Trade Position	SMA, CBP, Schott	Ratio
<i>Growth Sector</i>		
Manufacturing Employment Share	SMA, CBP	Proportion
Service Employment Share	SMA, CBP	Proportion
FIRE Employment Share	SMA, CBP	Proportion
<i>MSA Political Institutions</i>		
Special District Governments	COG	Count
General-Purpose Governments	COG	Count
District Overlap	COG	Ratio
Central-City Revenue (Own-Source)	CGF	Dollars (in thousands)
<i>Control Variables</i>		
Federal Intergovernmental Revenue	IGF	Dollars (in thousands)
State Intergovernmental Revenue	IGF	Dollars (in thousands)
General Revenue (Own-Source)	IGF	Dollars (in thousands)
General Expenditure (Current)	IGF	Dollars (in thousands)
Population	COG	Count
Land Area	COG	Square Miles
Year Trend	_____	Years

RD = Regional Data: GDP & Personal Income (Bureau of Economic Analysis 2013c)

SMA = State and Metro Area: Employment, Hours, & Earnings (Bureau of Labor Statistics 2013)

CBP = County Business Patterns (US Census Bureau 2013d)

Schott = Schott (2010)

COG = Census of Governments (US Census Bureau 2013a)

CGF = City Government Finances (US Census Bureau 2013b)

IGF = Individual Government Finances (US Census Bureau 2013f)

The variables are divided according to the categories laid out in the diagram form of the model (see above). The first two variables—income and income per capita—measure

overall economic performance. GDP would be preferable, but MSA GDP is unavailable

before 2001, while income data is available at the MSA- and state-level for the full time period. Following those, trade position captures international competitiveness (more on this below). Beneath that are three growth sector measures: manufacturing employment, service sector employment, and FIRE service employment. FIRE stands for finance, insurance, and real estate. I examine these services separately because they experienced high productivity growth during the time period (as demonstrated in Table 3.1) and are strongly associated with the urban resurgence (Ansell and Gingrich 2013; Glaeser 2010, 153; Brinkman 2014). As a result, FIRE services may be a more accurate measure of the stage-3 growth sector than services in general. After the sector variables are those capturing local political institutions. Territorial competition is measured by a count of general-purpose governments in an MSA. This reflects the number of territorially distinct governments in the area. The primary central city is measured via own-source revenue (i.e., excluding transfers from other governments). This captures the institution's strength by measuring its capacity to attract businesses and residents to its territory. Finally, special-purpose governments are measured in two ways. The first is by a simple count of special districts in an MSA. The second, "District Overlap," is the number of special districts divided by the number of general-purpose governments. This is the measure used by Christopher Berry (2009) to reflect the overlapping form these governments often take. The measures are included separately due to collinearity. The last section lists control variables. Two of these—federal and state intergovernmental revenue—deal with alternative revenue sources that may alter the impact of local institutions on the outcome variables. In particular, the ability to obtain desired revenue from higher-level

governments may obviate incentives to create special districts or lobby general-purpose governments. These alternate pathways—which account for about 37% of MSA public revenue on average—may explain variation in the dependent variables that would otherwise be a function of local institutions. General expenditure and revenue (own-source) are included on similar grounds. Combined, they represent the overall size of the MSA public sector, a more nebulous causal force that may actually be driving any observed link between local institutions and economic outcomes. The next two variables, population and land area, are basic production inputs that represent the size of the private sector. As with the public sector variables, they represent an omitted causal force that may actually drive the observed relationships. Finally, all of the models contain fixed effects (MSA or State) and a year trend. The former accounts for exogenous sources of variation that impact each MSA or state, while the latter controls for similarly unobserved changes that occur in an approximately linear fashion over time. A year trend is used as opposed to dummy variables so that the proposed structural break between stages can be adequately tested. That is, because changes over time are a vital part of the proposed theory, the models that follow do not attempt to eliminate all such variation. Nonetheless, changes that result from regular growth over time—for example, in productivity or population—are not of theoretical interest, yet impact both the economic and institutional variables. The year trend attempts to account for such changes.

Tables 4.2 through 4.5 show summary statistics for the raw and transformed versions of the variables. Where applicable, monetary values were inflation-adjusted using the GDP price deflator with a base year of 2005. Even with this adjustment, most of

the variables displayed non-normal variance due to negative skew. This was corrected for with a natural log transformation. The sectoral employment variables—manufacturing employment, service employment, and FIRE employment—are the exceptions. Because they are proportions used as dependent variables, they were logit transformed. Each change will be reflected in the coefficient interpretations. Tables 4.2 and 4.3 below contain the summaries for the MSA-level data, while Tables 4.4 and 4.5 have summaries for the state-level data. The interested reader may use these to assess the distribution of the variables, in both the raw and transformed versions.

Table 4.2: MSA Summary Statistics–Raw Variables

	Mean	p25	p50	p75	StdDev
Income	12,878,737.76	1,830,542.00	3,450,455.00	8,829,559.00	38,988,766.07
Income per Capita	18,560.44	11,985.00	17,631.00	24,295.00	8,125.41
Trade Position	1.42	1.09	1.29	1.59	0.57
Manufacturing Emp.	0.12	0.07	0.11	0.15	0.08
Service Emp.	0.40	0.36	0.40	0.44	0.06
FIRE Emp.	0.06	0.04	0.05	0.06	0.02
Special Districts	43.22	9.60	21.20	45.80	75.34
General-Purpose Govs.	61.40	17.00	31.00	63.80	105.04
District Overlap	0.95	0.36	0.67	1.20	0.94
Central City Rev.	287,910.49	25,552.00	57,107.00	155,830.00	1,689,803.78
Federal IG Rev.	46,032.04	3,546.24	8,517.80	24,104.47	188,304.75
State IG Rev.	346,051.85	36,750.46	87,414.64	227,838.88	1,330,478.39
General Revenue	618,056.82	58,847.93	139,011.16	371,425.84	2,446,804.59
General Expenditure	883,220.00	93,482.27	215,936.61	549,099.85	3,404,251.84
Population	570,971.78	117,020.40	192,860.40	432,385.60	1,362,663.47
Land Area	2,511.12	903.00	1,625.20	2,825.20	2,962.03

Table 4.3: MSA Summary Statistics–Transformed Variables

	Mean	p25	p50	p75	StdDev
Income	15.3	14.4	15.1	16.0	1.26
Income per Capita	9.73	9.39	9.78	10.1	0.46
Trade Position	0.29	0.084	0.26	0.47	0.35
Manufacturing Emp.	-2.19	-2.66	-2.14	-1.72	0.75
Service Emp.	-0.43	-0.58	-0.42	-0.26	0.27
FIRE Emp.	-2.88	-3.06	-2.89	-2.70	0.29
Special Districts	3.04	2.28	3.06	3.83	1.20
General-Purpose Govs.	3.50	2.83	3.43	4.16	1.05
District Overlap	-0.46	-1.02	-0.40	0.18	0.95
Central City Rev.	11.1	10.1	11.0	12.0	1.42
Federal IG Rev.	9.20	8.18	9.05	10.1	1.57
State IG Rev.	11.5	10.5	11.4	12.3	1.44
General Revenue	12.0	11.0	11.8	12.8	1.48
General Expenditure	12.4	11.4	12.3	13.2	1.44
Population	12.5	11.7	12.2	13.0	1.07
Land Area	7.43	6.81	7.39	7.95	0.87

Table 4.4: State Summary Statistics–Raw Variables

	Mean	p25	p50	p75	StdDev
Income	88,836,499.2	15,755,947.0	39,663,044.0	104,466,064.0	137,686,000.0
Income per Capita	16,778.66	7,874.00	15,453.00	24,129.00	9,918.92
Trade Position	1.35	1.11	1.30	1.57	0.29
Manufacturing Emp.	0.18	0.12	0.17	0.24	0.08
Service Emp.	0.90	0.83	0.90	0.97	0.10
FIRE Emp.	0.09	0.08	0.09	0.10	0.02
Special Districts	40.43	14.53	28.00	57.63	36.79
General-Purpose Govs.	60.44	23.42	46.30	88.00	49.50
District Overlap	0.93	0.41	0.65	1.19	0.81
Central City Rev.	170,814.63	17,459.51	61,799.88	163,671.95	441,522.07
Federal IG Rev.	46,894.35	5,487.51	14,457.67	35,035.04	182,948.55
State IG Rev.	228,372.57	25,972.31	92,206.80	259,594.62	436,913.90
General Revenue	469,377.07	51,170.70	177,529.77	484,345.55	1,148,856.19
General Expenditure	649,751.90	76,392.89	256,825.37	693,411.95	1,478,361.25
Population	536,279.34	209,756.20	345,805.00	668,336.08	620,911.73
Land Area	2,862.66	1,563.44	2,020.50	3,436.29	2,680.43

Table 4.5: State Summary Statistics–Transformed Variables

	Mean	p25	p50	p75	StdDev
Income	16.9	15.8	17.0	18.2	1.61
Income per Capita	8.96	8.06	9.23	9.91	1.12
Trade Position	0.28	0.11	0.26	0.45	0.21
Manufacturing Emp.	-1.65	-2.00	-1.55	-1.16	0.69
Service Emp.	2.25	1.54	2.01	2.76	1.01
FIRE Emp.	-2.32	-2.47	-2.33	-2.19	0.22
Special Districts	3.30	2.70	3.34	4.06	0.98
General-Purpose Govs.	3.70	3.15	3.84	4.48	1.03
District Overlap	-0.42	-0.88	-0.42	0.17	0.87
Central City Rev.	10.9	9.77	11.0	12.0	1.58
Federal IG Rev.	9.49	8.61	9.58	10.5	1.54
State IG Rev.	11.3	10.2	11.4	12.5	1.61
General Revenue	11.9	10.8	12.1	13.1	1.59
General Expenditure	12.3	11.2	12.5	13.4	1.57
Population	12.8	12.3	12.8	13.4	0.82
Land Area	7.70	7.35	7.61	8.14	0.68

Lastly, while most of the above variables are straightforward, trade position is unintuitive and requires further explanation. To measure metropolitan- and state-level international performance, I use a geographically weighted measure of US international competitiveness in the manufacturing sector. The variable is limited to manufacturing because of data availability. Specifically, manufacturing trade data is available at the industry level back to 1958, but similar data on trade in services is unavailable before 1992 (Feenstra 1998; Bureau of Economic Analysis 2015d). While a more comprehensive measure would be interesting to examine, the trade hypothesis under consideration here only covers stage 2. Because stage-2 performance is about maintaining or enhancing competitiveness in traded goods (i.e., it precedes the services transition), a manufacturing-based measure fits well.

The competitiveness portion of the trade position variable is calculated from the following two components.

$$1) \text{ Industry}_{j,t} = \frac{\text{Value of Imports}_{j,t}}{\text{Value of Imports}_{j,t} + \text{Value of Domestic Shipments}_{j,t}}$$

$$2) \text{ Industry}_{j,t} = \frac{\text{Value of Exports}_{j,t}}{\text{Value of Exports}_{j,t} + \text{Value of Domestic Shipments}_{j,t}}$$

The first formula represents the degree of import penetration an industry experiences over a given time period. In more precise terms, it is the ratio of industry imports to the sum of imported and domestically produced goods sold in the country. It therefore captures the share of total domestic sales that is imported rather than domestically produced, hence the name import penetration. The second formula calculates an industry's level of export dependence over a given time period. The logic regarding the relation to domestic shipments is the same (i.e., most goods are not exported). The share that is exported

relative to domestic sales therefore represents the extent to which the industry 'depends' on exports relative to domestic sales.¹

To capture the impact of these variables on smaller geographic areas like MSAs and states, import penetration and export dependence are multiplied by the specified area's employment in the measured industries. This is done as follows:

$$1) \sum_{t=1}^n Industry_{j,t} = \frac{Area\ Employment_{j,t}}{\Sigma Area\ Employment_t} \times \frac{Value\ of\ Imports_{j,t}}{Value\ of\ Imports_{j,t} + Value\ of\ Domestic\ Shipments_{j,t}}$$

$$2) \sum_{t=1}^n Industry_{j,t} = \frac{Area\ Employment_{j,t}}{\Sigma Area\ Employment_t} \times \frac{Value\ of\ Exports_{j,t}}{Value\ of\ Exports_{j,t} + Value\ of\ Domestic\ Shipments_{j,t}}$$

Employment data is used both because it is available with a high level of geographic and industry detail, and because it reflects the relative importance of industries in a geographic area. Once they are weighted by area, the trade measures are summed across the designated time period, generating area import and export measures for that unit of time. Using these two formulas, an area's overall trade position is obtained by dividing the sum of import penetration by the sum of export dependence. This yields an overall measure of international competitiveness by balancing the negative impact of import competition against the positive effect of export sales. Thus, the resulting figure is the area's trade position (McGillivray, 1997; Busch and Reinhardt 1999, 2000; Testa, Klier, and Zemenev, 2003).

In this study, trade position is measured at the MSA- and state-level on an annual basis. For the MSA variable, MSA employment in each manufacturing industry is divided by total MSA employment for a given year. For the state variable, state-level

¹ These measures exclude fully imported and exported products. For smaller economies, this may be problematic, but in an economy like the United States, the vast majority of internally produced goods and services are sold on the domestic market (Testa, Klier, and Zemenev 2003).

manufacturing employment is divided by total state employment for a given year. For both measures, a higher ratio reflects a larger share of negative trade flows in the area economy. That is, a high score on trade position indicates that import penetration is large relative to export dependence. Conversely, a low score indicates that export dependence is large relative to import penetration. Thus, the resulting measure is counter-intuitive: a higher score indicates lower international competitiveness, and vice versa.

MSA employment data was obtained from the US Census Bureau's *County Business Patterns* (US Census Bureau 2013d). This is an annual employment survey in which jobs in each US county are counted and categorized according to the SIC (later NAICS) industrial code. Because MSA's are composed of contiguous, densely populated counties with close economic ties, I was able to compile MSA employment measures by adding together the relevant county data. To define the sample, I used the US government's 2002 classification of MSAs. This resulted in a dataset of 363 metropolitan areas running from 1977-2005 (reflecting the available CBP data). State employment data was obtained from the US Bureau of Labor Statistics (Bureau of Labor Statistics 2013). Finally, trade data was obtained from Peter Schott's (2010) *U.S. Manufacturing Exports and Imports by SIC or NAICS Category and Partner Country, 1972 to 2005*, which is freely available on the National Bureau of Economic Research's data website.

II. The Stage Cutoff

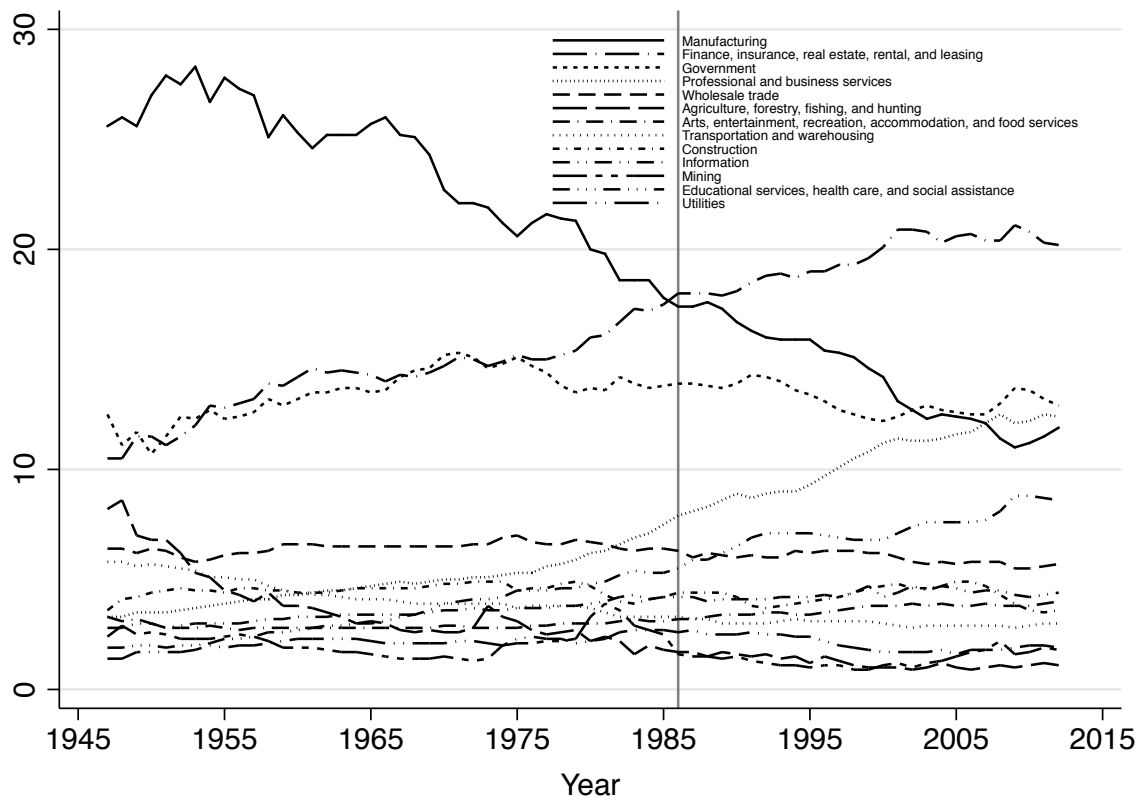
Before examining the variable relationships, it is first necessary to specify a cutoff year for the US economy's transition from stage 2 to stage 3. As noted in the previous two chapters, the US underwent a significant economic shift in the early 1980s. In

particular, there were two changes: primary cities that were suffering from economic and population decline began to grow again, and the employment profile of the national economy shifted decisively from goods to services. Together, these changes defined stage 3 of the urban development theory. While a vague understanding of the timing of this shift was sufficient to develop hypotheses, statistically testing these predictions requires a precise cutoff. To obtain this, I examine two sets of time series: one displaying the sectoral composition of US GDP over time, and another showing the evolution of the country's trade position. The former is an indicator of the economy's growth sector, while the latter indicates the international competitiveness of the manufacturing sector. In the sector plots, the onset of stage 3 should be associated with evidence that the service sector has surpassed manufacturing's contribution to GDP. With trade position, the transition to stage 3 should produce a pronounced upward shift, indicating that import penetration has increased (more on this below). Assuming both changes are evident, the year in which they occur constitutes a reasonable approximation for the end of stage 2 in the US.

Figure 4.1 displays the proportional contribution of various economic sectors to US GDP. Running from 1947 through 2012, the time series cover large segments of both stages 2 and 3. The gray vertical line represents the year 1986. It shows the year in which the top two sectors intersect. Prior to 1986, the solid line (representing manufacturing) was the dominant sector contributing to national GDP. After 1986, manufacturing was overtaken by FIRE services, which remained dominant through 2012. Following the manufacturing series further, one can see that in the early 2000s, first government and

then professional and business services also surpassed manufacturing. The rest of the sectors remained relatively stable in their contributions to GDP over time. Because of the dominance and subsequent trajectories of the manufacturing and FIRE services series, I take their intersection as the decisive transition point. Thus, examining the sectoral composition of US GDP yields a fairly straightforward stage-2 cutoff estimate of 1986.

Figure 4.1: US Economic Sectors as a % of GDP, 1947-2012

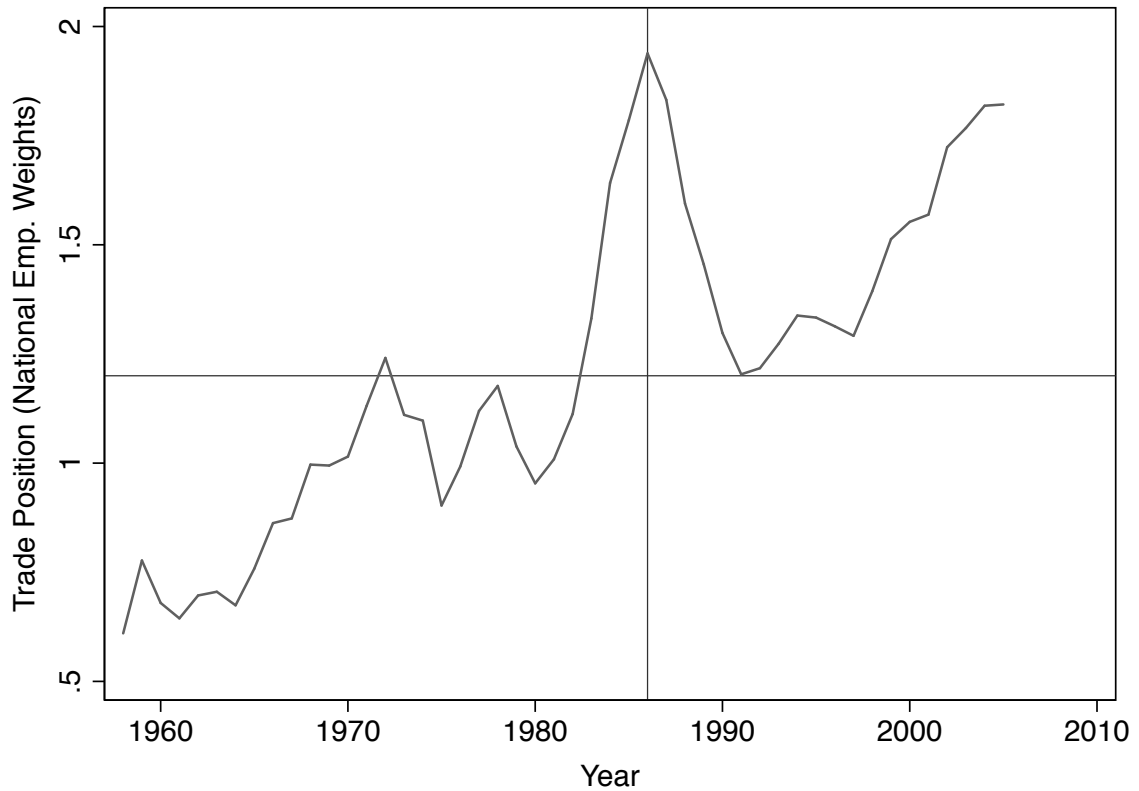


Source: Bureau of Economic Analysis 2013a

Figure 4.2 shows the national trade position of the United States between 1958 and 2005. As noted, I expect the stage-3 transition to manifest itself in this plot via a pronounced, upward shift in the level of trade position. Unlike the prediction for the

sectoral time series, the reasoning behind the predicted trade position signature is not straightforward.

Figure 4.2: US Trade Position (National Employment Weights, Median Annual Value)



Sources: Feenstra (1998); Schott (2010); Becker et. al. (2013)

Rather than a general feature of the stage-3 transition, this prediction emanates from an idiosyncratic feature of the US economy's transition to services: the Houthakker-Magee (1969) income elasticity asymmetry. As is well known, the US has run increasing annual trade deficits nearly every year since 1975 (US Census Bureau 2013e). While much of this has been a function of growing foreign economic capacity, especially in manufactures, the shift into high productivity services has also played a significant role. In particular, empirical studies of the US trade balance show that a phenomenon known

as the Houthakker-Magee income elasticity asymmetry has been a persistent feature of US trade patterns since the 1960s (Houthakker and Magee 1969; Chinn 2004). The asymmetry refers to a gap between the income responsiveness of US demand for imports and foreign demand for US exports. Specifically, Houthakker and Magee found that US demand for imports was approximately 70% more responsive to income changes than was foreign demand for US exports. That is, as incomes have increased for the US and its trading partners, demand for foreign goods in the US has grown 70% more than demand for US goods abroad. While diminishing over time, the effect has persisted and is considered by trade economists to be a significant contributor to the continuing trade deficit (Chinn 2004). The asymmetry is relevant to the US's stage-3 shift because the high productivity services that flourished during this period brought with them significant per capita income growth, however unequally distributed (Eichengreen and Gupta 2013). In conjunction with the asymmetry, this suggests that stage 3 should be associated with a significant boost in import demand, which should in turn produce a pronounced bump in the trade position time series.

Like the vertical line in Figure 4.1, the vertical line in Figure 4.2 is drawn at the year 1986. In addition to this line, there is a horizontal line where trade position equals 1.2. This number reflects the lower boundary for trade position after 1986. As is apparent from the intersection of these lines, there is a pronounced upward shift in trade position in the mid 1980s that peaks in 1986. Thereafter, trade position remains generally higher, suggesting a structural shift in the series. While the upward shift begins a few years earlier, the 1986 peak is further evidence that this was a pivotal year. In light of the

sectoral series, I take this as corroboration that 1986 is a reasonable estimate for the stage-2 cutoff.

III. Estimation Strategy

With a precise estimate for the stage transition identified, it is now possible to test the hypotheses using the MSA and state panels. The multidimensional nature of panel data produces several known issues for linear regression models. In this case, diagnostic tests indicated that cross-sectional dependence, heteroskedasticity, and serial correlation were present in each dataset. To account for these issues, a model with Driscoll-Kraay standard errors was used (Driscoll and Kraay, 1998; Hoechle, 2007). The particular specification assumes that the error structure is heteroskedastic, autocorrelated up to some lag, and correlated between panels (Hoechle, 2007). Given the long time frame of the panels, the Hoechle implementation of the Driscoll-Kraay specification is especially appropriate as it is able to incorporate multiple lags. Specifically, Hoechle's *Stata* code selects the lag length for the model by applying the following rule:

$$m(T) = \text{floor}[4(T/100)^{2/9}]$$

where $m(T)$ denotes the lag length up to which the residuals may be autocorrelated

As Hoechle notes, however, the dynamics derived from such a formula are essentially independent of the underlying data, giving them questionable accuracy. In practice, Hoechle finds that the rule tends to underestimate the appropriate lag length (289). To address this possibility, the models were tested with additional lags. Estimates and standard errors proved robust to the adjustment, so the rule-determined lag length was maintained throughout.

Testing for stage-induced changes introduces an additional complication: identifying structural breaks within a panel framework. To do this, I interacted the institutional variables with structural-break dummy variables, testing for statistically significant changes in their marginal effects. In particular, variables for "Stage 2" and "Stage 3" were created in both datasets. For the MSA dataset, the stage 2 variable is coded "1" for the years 1977-1986, while the stage 3 variable is coded "1" for 1987-2005. For the state dataset, the stage 2 variable is coded "1" for the years 1969-1986, while the stage 3 variable is coded "1" for 1987-2005. These were then interacted with the "Special Districts," "General-Purpose Govs.," "District Overlap," and "Central City Rev." variables to test for a stage-conditioned impact on the dependent variables. To better assess the changes, marginal effects plots were produced that show the stage-interacted coefficients in the same plot region. This allows for a visual assessment of the overlap/separation in the point estimates and confidence intervals. Alongside the tabular output, examining the plots provides an effective test of the stage hypotheses.

IV. Results

Income

Table 4.6 shows the models with MSA income as the dependent variable. The results from the overall model indicate that an MSA's income level is strongly related to its institutional makeup. In particular, a 1% increase in the number of special district governments in an MSA is associated with a 0.94% increase in the region's income level (equal to the coefficient for district overlap); and a 1% increase in central city revenue is associated with a 4.4% income-level increase. General-purpose governments display no

relationship to income. Looking at the coefficients from the "Stage 2" and "Stage 3" models, it appears that the stage shift did not have a strong impact on either of these relationships. Before comparing the coefficient values, it should be noted that their interpretation is counterintuitive. Because the stages are captured with dummy-variable interactions, the coefficients for the institutional variables represent base categories. That is, because the stage interactions capture the impact of the institutional variables when the stage condition is present, the constitutive institutional variables capture the impact when the stage condition is absent. Therefore, the institutional coefficients in the stage-2 models represent stage-3 relationships, and vice versa. This means, in the MSA income models for example, that a 1% increase in district overlap is associated with a 0.79% increase in the stage-3 income level (the coefficient from the "Stage 2" model, p-value below 10%) and a 1.1% increase in the stage-2 income level (the coefficient from the "Stage 3" model). The interpretation for special districts is simpler as the coefficients from both stages indicate a 1.1% increase in the income level for each 1% increase in special districts. Interpreting the stage-based revenue coefficients is further complicated by the inclusion of district overlap as a combined measure of special- and general-purpose governments. This generates two sets of coefficients across the stages: a pair for the models with special districts and a pair for the models with district overlap. In this case, the coefficient values show a 0.02% drop in stage 3 when the government variables are included separately (4.2 % in stage 2 vs. 4% in stage 3), but a 0.02% increase when they are combined as overlap (4.1% in stage 2 vs. 4.3% in stage 3). The meaning of these differences—as well as those evinced by the other variables—is better assessed using the

stage comparison plots in Figure 4.3. The stage-based central city revenue plots from each model are displayed in the bottom row, with the district overlap version noted on the X-axis. Comparing the two, it is apparent that the 0.02% gaps are not statistically distinguishable from zero in either set of models. Turning to the other plots, it is apparent that none of the tabular stage differences are statistically distinct. The confidence intervals in each plot overlap entirely. Overall, the MSA-level income models reveal positive relationships for special districts, district overlap, and central city revenue, but do not provide evidence for stage-induced changes in these relationships.

Table 4.7 contains the results for the models with state-level income as the dependent variable. Attributing these findings directly to the MSA level would risk an ecological inference error. To make the results relevant to the MSA level, two steps are taken. First, I divided the independent variables by the number of MSAs in their respective states. The coefficients therefore indicate the effects of *per* MSA increases (in special districts, central city revenue, etc.) on the state economy. This reduces any bias generated by institutionally dissimilar MSAs within the same state. Second, the state-level results will only be examined for evidence of general changes between stages rather than precise differences in point estimates. In the absence of EI-specific regression methods, it is not possible to accurately apply state point estimates to the MSA level. Furthermore, the possibility of Simpson's paradox—a reversal of the lower level trend after aggregation—means that coefficient signs may be inaccurate. Because of these limitations, the state-level results can *only* be used to: 1) corroborate the existence (or non-existence) of relationships identified at the MSA level, and 2) further assess any

stage-induced changes found there. The latter function fits well with the extended timeframe (i.e., back to 1969), as stage-based differences from the MSA models may be affected by the limited number of early years.

Comparing the findings in Tables 4.6 and 4.7, the state-level results lend further support to the connection between local institutions and the income level. Special districts, district overlap, and central city revenue each display statistically significant, similarly sized effects across the models. Similar to the MSA level, there are only small differences in the stage-based models. In particular, the magnitudes for special districts and district overlap decrease by about 1% in stage 3, while central city revenue's effect falls by 2%. In the stage comparison plots in Figure 4.4, however, the overlapping confidence intervals demonstrate that these differences are not statistically significant. The state income models therefore provide a measure of increased support for the MSA-level findings.

Table 4.6: MSA Income

	Overall (1977-2005)		Stage 2 (1977-1986)		Stage 3 (1987-2005)	
	Income	Income	Income	Income	Income	Income
Special Districts	0.0094**		0.011***		0.011***	
	(0.0039)		(0.0043)		(0.0032)	
General-Purpose Govs.	0.0061		0.019		0.0065	
	(0.015)		(0.016)		(0.014)	
District Overlap		0.0094**		0.0079*		0.011***
		(0.0039)		(0.0046)		(0.0034)
Central City Rev.	0.044***	0.044***	0.040***	0.043***	0.042***	0.041***
	(0.0099)	(0.0099)	(0.0074)	(0.0079)	(0.0096)	(0.0096)
Stage 2			-0.0088	-0.000098		
			(0.049)	(0.050)		
Districts-Stage 2			-0.00075			
			(0.0022)			
Govs-Stage 2			-0.012***			
			(0.0034)			
Overlap-Stage 2				0.0029		
				(0.0021)		
City-Stage 2			0.0025	-0.0024		
			(0.0044)	(0.0039)		
Stage 3					0.0088	0.000098
					(0.049)	(0.050)
Districts-Stage 3					0.00075	
					(0.0022)	
Govs-Stage 3					0.012***	
					(0.0034)	
Overlap-Stage 3						-0.0029
						(0.0021)
City-Stage 3					-0.0025	0.0024
					(0.0044)	(0.0039)
Federal IG Rev.	-0.020***	-0.020***	-0.016***	-0.016***	-0.016***	-0.016***
	(0.0054)	(0.0054)	(0.0027)	(0.0026)	(0.0027)	(0.0026)
State IG Rev.	0.011	0.011	0.013	0.013	0.013	0.013
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
General Revenue	0.12***	0.12***	0.12***	0.12***	0.12***	0.12***
	(0.025)	(0.025)	(0.023)	(0.023)	(0.023)	(0.023)
General Expenditure	0.080**	0.080**	0.072*	0.071*	0.072*	0.071*
	(0.032)	(0.032)	(0.041)	(0.041)	(0.041)	(0.041)
Population	0.76***	0.77***	0.79***	0.78***	0.79***	0.78***
	(0.039)	(0.040)	(0.045)	(0.048)	(0.045)	(0.048)
Land Area	0.042	0.051	0.032	0.051	0.032	0.051
	(0.049)	(0.051)	(0.050)	(0.049)	(0.050)	(0.049)
Year Trend	0.032***	0.032***	0.031***	0.031***	0.031***	0.031***
	(0.0031)	(0.0031)	(0.0029)	(0.0029)	(0.0029)	(0.0029)
Constant	-61.1***	-61.1***	-59.3***	-59.6***	-59.3***	-59.6***
	(6.23)	(6.23)	(5.77)	(5.87)	(5.79)	(5.89)
Observations	9844	9844	9844	9844	9844	9844

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 4.7: State Income

	Overall (1969-2005)		Stage 2 (1969-1986)		Stage 3 (1987-2005)	
	Income	Income	Income	Income	Income	Income
Special Districts	-0.033*** (0.0088)		-0.033*** (0.011)		-0.045*** (0.0075)	
General-Purpose Govs.	0.031 (0.088)		0.0063 (0.088)		0.036 (0.088)	
District Overlap		-0.033*** (0.0088)		-0.026*** (0.0093)		-0.047*** (0.0093)
Central City Rev.	0.59*** (0.039)	0.59*** (0.039)	0.57*** (0.034)	0.57*** (0.034)	0.59*** (0.037)	0.59*** (0.037)
Stage 2			-0.31* (0.17)	-0.28* (0.16)		
Districts-Stage 2			-0.012** (0.0059)			
Govs-Stage 2			0.029*** (0.0075)			
Overlap-Stage 2				-0.021*** (0.0048)		
City-Stage 2			0.022* (0.012)	0.025** (0.012)		
Stage 3					0.31* (0.17)	0.28* (0.16)
Districts-Stage 3					0.012** (0.0059)	
Govs-Stage 3					-0.029*** (0.0075)	
Overlap-Stage 3						0.021*** (0.0048)
City-Stage 3					-0.022* (0.012)	-0.025** (0.012)
Federal IG Rev.	0.062*** (0.023)	0.062*** (0.023)	0.064*** (0.020)	0.064*** (0.019)	0.064*** (0.020)	0.064*** (0.019)
State IG Rev.	-0.043 (0.048)	-0.043 (0.048)	-0.041 (0.049)	-0.044 (0.049)	-0.041 (0.049)	-0.044 (0.049)
General Revenue	-0.23*** (0.085)	-0.23*** (0.085)	-0.22** (0.082)	-0.21** (0.084)	-0.22** (0.082)	-0.21** (0.084)
General Expenditure	0.30** (0.15)	0.30** (0.15)	0.27* (0.15)	0.27* (0.15)	0.27* (0.15)	0.27* (0.15)
Population	0.13*** (0.040)	0.13*** (0.044)	0.10** (0.046)	0.12*** (0.044)	0.10** (0.046)	0.12*** (0.044)
Land Area	-0.43*** (0.15)	-0.43** (0.19)	-0.39*** (0.15)	-0.42** (0.19)	-0.39*** (0.15)	-0.42** (0.19)
Year Trend	0.035*** (0.0040)	0.035*** (0.0040)	0.038*** (0.0044)	0.038*** (0.0044)	0.038*** (0.0044)	0.038*** (0.0044)
Constant	-59.3*** (7.74)	-59.3*** (7.75)	-64.3*** (8.62)	-64.3*** (8.63)	-64.6*** (8.58)	-64.6*** (8.59)
Observations	1873	1873	1873	1873	1873	1873

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Figure 4.3: Stage Comparison Plots—MSA Income

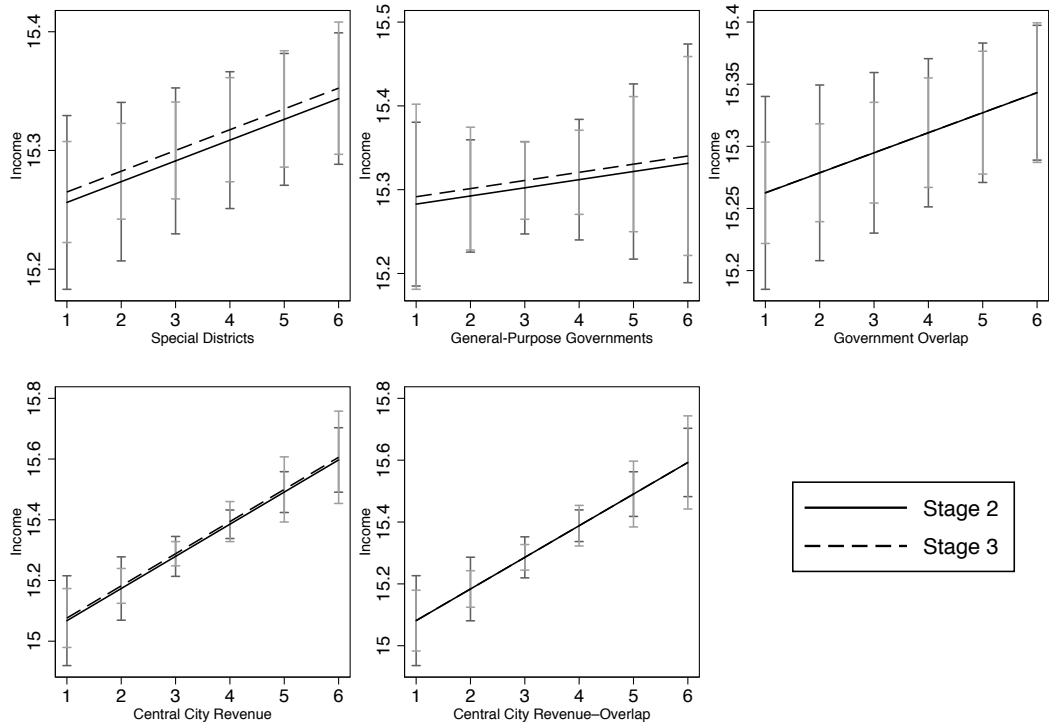
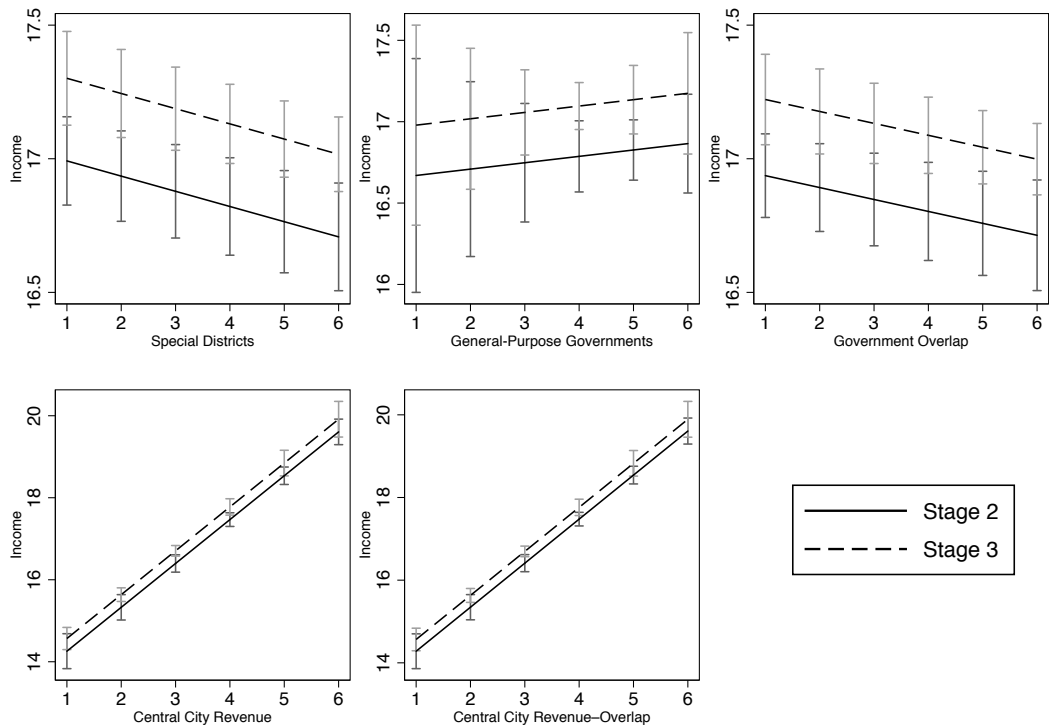


Figure 4.4: Stage Comparison Plots—State Income



Income per Capita

Table 4.8 displays the models with MSA income per capita as the dependent variable. The results mirror those from the income model: special districts and district overlap are associated with a 1% increase (approximately) in MSA income per capita in each of the models, while central city revenue varies around 4.5% across the various specifications. General-purpose governments exhibit a positive relationship in stage 3, but no relationship in the other models, indicating a lack of robustness. While these results indicate some degree stage-based variation, the plots in Figure 4.5 show that the coefficient differences are not statistically significant. As a whole, the income and income per capita variables demonstrate virtually identical positive relationships with special districts, district overlap, and central city revenue; as well as a similar consistency across the stages. Thus, the relationship between local institutions and total MSA income translates to the average income earner as well.

Table 4.9 looks at income per capita at the state level. Unlike with total income, the state-level per capita income models do not fully align with their MSA-level versions. In particular, the state-level results indicate that general-purpose governments are related to per capita income across all of the models, but the MSA models only indicate a statistically significant relationship in stage 3. Furthermore, the state-level special district and district overlap variables show slightly wider differences across the stage-based models (i.e., a gap of 0.007 for special districts and 0.011 for overlap). In terms of the district variables, the plots in Figure 4.6 confirm the larger differences (compared to Figure 4.5), but also show that they are not wide enough to produce separation in the

confidence intervals. The discrepancy with general-purpose governments, however, is potentially more meaningful. In particular, the state-level findings lend credence to the MSA result, suggesting that the positive relationship in stage 3 is a population characteristic. But why is the MSA relationship absent in the stage-2 and overall models? Given the corroboration from the state-level models, the best explanation for this is that a positive relationship emerges in stage 3, but when coupled with the statistically insignificant stage-2 finding, it is not strong enough to generate a statistically significant finding in the overall MSA model. Thus, while the absence of an overall relationship in the MSA model might have initially suggested that the stage-3 result is erroneous, incorporating the state-level results leads to a different conclusion. Overall, the state-level findings add valuable information to the income per capita findings. They lead to the revised conclusion that the average MSA income earner was not only better off with a higher number of special districts, more overlapping jurisdictions, and higher central city revenue in equal measure over time, but also experienced an additional benefit from more general-purpose governments in stage 3.

Table 4.8: MSA Income per Capita

	Overall (1977-2005)		Stage 2 (1977-1986)		Stage 3 (1987-2005)	
	Income PC	Income PC	Income PC	Income PC	Income PC	Income PC
Special Districts	0.010** (0.0040)		0.012** (0.0049)		0.011*** (0.0034)	
General-Purpose Govs.	0.023 (0.018)		0.038** (0.019)		0.025 (0.016)	
District Overlap		0.010** (0.0040)		0.0084* (0.0050)		0.012*** (0.0035)
Central City Rev.	0.047*** (0.0093)	0.047*** (0.0092)	0.041*** (0.0075)	0.045*** (0.0082)	0.046*** (0.0092)	0.044*** (0.0092)
Stage 2			-0.028 (0.047)	-0.018 (0.049)		
Districts-Stage 2			-0.00081 (0.0023)			
Govs-Stage 2			-0.013*** (0.0036)			
Overlap-Stage 2				0.0032 (0.0024)		
City-Stage 2			0.0046 (0.0038)	-0.00059 (0.0036)		
Stage 3					0.028 (0.047)	0.018 (0.049)
Districts-Stage 3					0.00081 (0.0023)	
Govs-Stage 3					0.013*** (0.0036)	
Overlap-Stage 3						-0.0032 (0.0024)
City-Stage 3					-0.0046 (0.0038)	0.00059 (0.0036)
Federal IG Rev.	-0.018*** (0.0048)	-0.018*** (0.0048)	-0.014*** (0.0025)	-0.014*** (0.0025)	-0.014*** (0.0025)	-0.014*** (0.0025)
State IG Rev.	0.0049 (0.013)	0.0044 (0.013)	0.0066 (0.013)	0.0064 (0.012)	0.0066 (0.013)	0.0064 (0.012)
General Revenue	0.12*** (0.026)	0.12*** (0.026)	0.12*** (0.024)	0.12*** (0.024)	0.12*** (0.024)	0.12*** (0.024)
General Expenditure	0.078** (0.033)	0.079** (0.033)	0.070* (0.041)	0.069* (0.041)	0.070* (0.041)	0.069* (0.041)
Population	-0.23*** (0.041)	-0.23*** (0.041)	-0.21*** (0.046)	-0.22*** (0.050)	-0.21*** (0.046)	-0.22*** (0.050)
Land Area	0.10* (0.055)	0.12** (0.058)	0.092* (0.053)	0.12** (0.056)	0.092* (0.053)	0.12** (0.056)
Year Trend	0.032*** (0.0030)	0.032*** (0.0030)	0.031*** (0.0027)	0.031*** (0.0028)	0.031*** (0.0027)	0.031*** (0.0028)
Constant	-55.0*** (6.12)	-55.0*** (6.12)	-53.5*** (5.53)	-53.8*** (5.65)	-53.5*** (5.55)	-53.8*** (5.66)
Observations	9844	9844	9844	9844	9844	9844

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 4.9: State Income per Capita

	Overall (1969-2005)		Stage 2 (1969-1986)		Stage 3 (1987-2005)	
	Income PC	Income PC	Income PC	Income PC	Income PC	Income PC
Special Districts	-0.021*** (0.0077)		-0.029*** (0.0098)		-0.023*** (0.0054)	
General-Purpose Govs.	0.14** (0.053)		0.16*** (0.055)		0.14*** (0.053)	
District Overlap		-0.025*** (0.0085)		-0.037*** (0.010)		-0.026*** (0.0063)
Central City Rev.	0.62*** (0.036)	0.62*** (0.036)	0.60*** (0.035)	0.60*** (0.034)	0.61*** (0.035)	0.61*** (0.035)
Stage 2			-0.12 (0.14)	-0.14 (0.14)		
Districts-Stage 2			0.0055 (0.0067)			
Govs-Stage 2			-0.016*** (0.0049)			
Overlap-Stage 2				0.011* (0.0059)		
City-Stage 2			0.015 (0.011)	0.013 (0.011)		
Stage 3					0.12 (0.14)	0.14 (0.14)
Districts-Stage 3					-0.0055 (0.0067)	
Govs-Stage 3					0.016*** (0.0049)	
Overlap-Stage 3						-0.011* (0.0059)
City-Stage 3					-0.015 (0.011)	-0.013 (0.011)
Federal IG Rev.	0.060** (0.023)	0.058** (0.022)	0.058*** (0.018)	0.056*** (0.017)	0.058*** (0.018)	0.056*** (0.017)
State IG Rev.	-0.0046 (0.054)	-0.0083 (0.053)	-0.0050 (0.055)	-0.0072 (0.054)	-0.0050 (0.055)	-0.0072 (0.054)
General Revenue	-0.19** (0.088)	-0.19** (0.089)	-0.18* (0.089)	-0.18* (0.089)	-0.18* (0.089)	-0.18* (0.089)
General Expenditure	0.20 (0.16)	0.21 (0.16)	0.19 (0.16)	0.20 (0.16)	0.19 (0.16)	0.20 (0.16)
Population	-0.77*** (0.036)	-0.75*** (0.033)	-0.73*** (0.040)	-0.73*** (0.034)	-0.73*** (0.040)	-0.73*** (0.034)
Land Area	0.21* (0.12)	0.31*** (0.11)	0.18 (0.11)	0.30** (0.11)	0.18 (0.11)	0.30** (0.11)
Year Trend	0.035*** (0.0038)	0.035*** (0.0037)	0.037*** (0.0044)	0.037*** (0.0044)	0.037*** (0.0044)	0.037*** (0.0044)
Constant	-60.5*** (7.35)	-60.8*** (7.33)	-64.0*** (8.72)	-64.2*** (8.73)	-64.1*** (8.69)	-64.4*** (8.70)
Observations	1873	1873	1873	1873	1873	1873

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Figure 4.5: Stage Comparison Plots—MSA Income per Capita

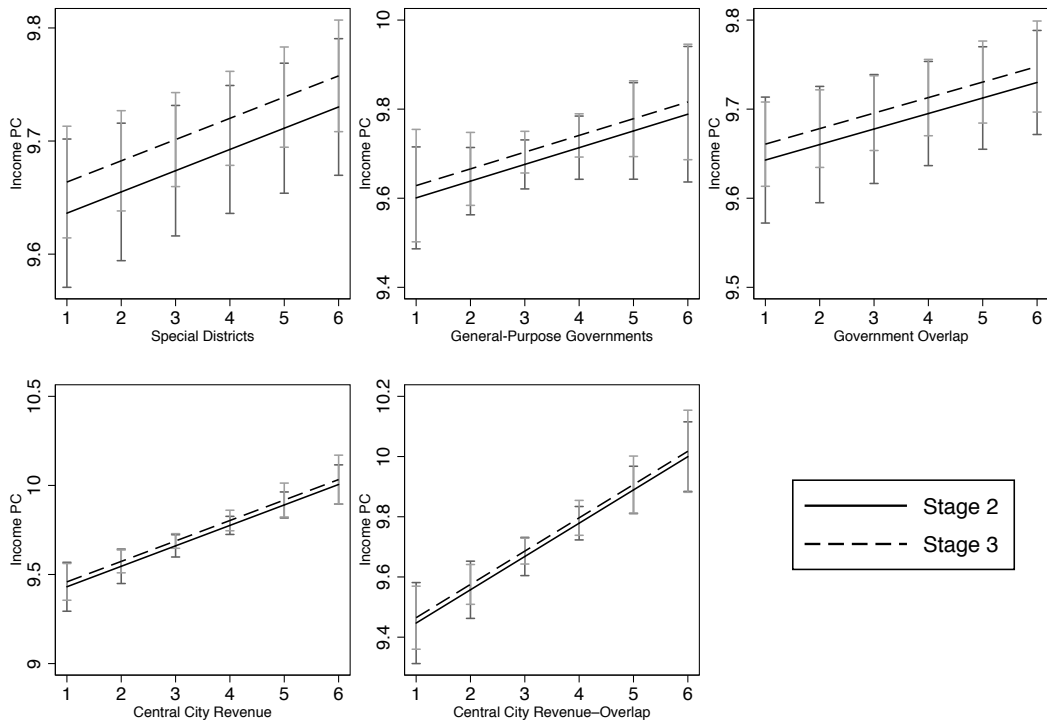
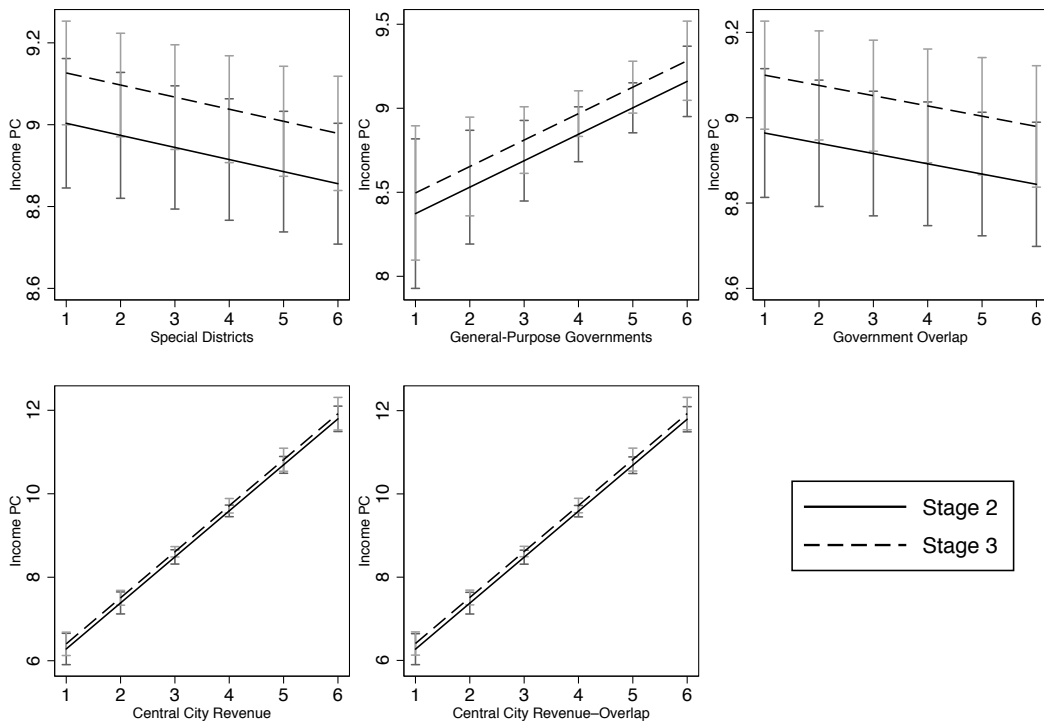


Figure 4.6: Stage Comparison Plots—State Income per Capita



Trade Position

Table 4.10 contains the models with MSA trade position as the dependent variable. The results reveal a stark contrast with income and income per capita. Whereas special districts, district overlap, and central city revenue are the predominant institutions associated with income, general-purpose government exhibits the strongest association with trade position. Before interpreting the coefficients, it should be noted that trade position has a counterintuitive direction. Positive changes result from a growing dominance of imports over exports, indicating a worsening trade position. Negative changes are produced by movement in the opposite direction, and therefore indicate an improvement. With this in mind, the results from Table 4.10 indicate that a 1% increase in the number of general-purpose governments is associated with a 48% improvement in trade position in the overall model, a 47% improvement in stage 2, and a 40% improvement in stage 3. The 7% difference between the stage-based coefficients is the largest yet observed, but as Figure 4.7 shows, it is not statistically significant. Interestingly, central city revenue also evinces a relationship, but it is not consistently significant below the 5% p-value threshold and not robust to the change in the district variable. Because of this, I treat it as a null finding. Overall, the MSA trade position models indicate that general-purpose governments have a positive, consistent effect on trade position; while special districts, district overlap, and central city revenue have no discernable relationship.

The state trade position results in Table 4.11 corroborate the statistically insignificant relationships, but do not provide increased support for the relationship with

general-purpose governments. While some of the coefficients have p-values below 10%, the relationships are not further substantiated by p-value below 5% across the various models. Furthermore, none of the marginal findings apply to general-purpose governments, where all of the p-values are well above 10%. As a result, the state-level results further support trade position's statistically insignificant relationship with special districts, district overlap, and central city revenue; but not the relationship with general-purpose governments. This does not mean that the MSA-level relationship between general governments and trade position is invalid. Rather, it indicates that—for a variety of possible reasons—it cannot be further verified at the state level. While this adds little direct information, it is valuable in comparison to the total and per capita income findings. That is, because the income findings were largely verified at the state level, the lack of corroboration here suggests that local institutions may have less of an impact on trade position than overall economic performance. Nonetheless, because the evidence from the state level is secondary, the conclusions from the MSA trade position models stand: special districts, district overlap, and central city revenue have no relationship with MSA trade position, while increases in general-purpose governments are associated with trade position improvements that do not vary significantly over time.

Table 4.10: MSA Trade Position

	Overall (1977-2005)		Stage 2 (1977-1986)		Stage 3 (1987-2005)	
	Trade	Trade	Trade	Trade	Trade	Trade
Special Districts	0.0035 (0.013)		-0.016 (0.014)		0.014 (0.012)	
General-Purpose Govs.	-0.48*** (0.18)		-0.40** (0.18)		-0.47*** (0.18)	
District Overlap		0.0028 (0.012)		-0.026 (0.017)		0.012 (0.012)
Central City Rev.	0.065 (0.043)	0.068 (0.043)	0.046 (0.032)	0.060* (0.036)	0.086** (0.044)	0.086* (0.044)
Stage 2			-0.18 (0.19)	-0.16 (0.18)		
Districts-Stage 2			0.030*** (0.0044)			
Govs-Stage 2			-0.070*** (0.014)			
Overlap-Stage 2				0.038*** (0.0061)		
City-Stage 2			0.040** (0.017)	0.026* (0.013)		
Stage 3					0.18 (0.19)	0.16 (0.18)
Districts-Stage 3					-0.030*** (0.0044)	
Govs-Stage 3					0.070*** (0.014)	
Overlap-Stage 3						-0.038*** (0.0061)
City-Stage 3					-0.040** (0.017)	-0.026* (0.013)
Federal IG Rev.	0.036 (0.028)	0.035 (0.028)	0.022 (0.022)	0.022 (0.022)	0.022 (0.022)	0.022 (0.022)
State IG Rev.	-0.017 (0.038)	-0.0092 (0.038)	-0.020 (0.037)	-0.012 (0.037)	-0.020 (0.037)	-0.012 (0.037)
General Revenue	0.025 (0.078)	0.017 (0.079)	0.027 (0.074)	0.017 (0.074)	0.027 (0.074)	0.017 (0.074)
General Expenditure	0.18 (0.13)	0.17 (0.13)	0.20 (0.14)	0.19 (0.13)	0.20 (0.14)	0.19 (0.13)
Population	-0.24 (0.24)	-0.28 (0.24)	-0.15 (0.21)	-0.23 (0.22)	-0.15 (0.21)	-0.23 (0.22)
Land Area	0.36 (0.56)	0.084 (0.51)	0.34 (0.58)	0.094 (0.53)	0.34 (0.58)	0.094 (0.53)
Year Trend	-0.0059 (0.018)	-0.0054 (0.018)	-0.0032 (0.017)	-0.0021 (0.017)	-0.0032 (0.017)	-0.0021 (0.017)
Constant	10.7 (36.7)	10.6 (36.7)	4.21 (35.6)	3.18 (35.5)	4.03 (35.5)	3.02 (35.4)
Observations	9804	9804	9804	9804	9804	9804

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 4.11: State Trade Position

	Overall (1969-2005)		Stage 2 (1969-1986)		Stage 3 (1987-2005)	
	Trade	Trade	Trade	Trade	Trade	Trade
Special Districts	-0.012 (0.014)		-0.029* (0.016)		-0.025* (0.015)	
General-Purpose Govs.	0.0063 (0.067)		0.013 (0.070)		-0.0010 (0.070)	
District Overlap		-0.012 (0.015)		-0.032* (0.018)		-0.023 (0.016)
Central City Rev.	0.062 (0.12)	0.062 (0.12)	0.020 (0.092)	0.023 (0.092)	0.055 (0.11)	0.056 (0.11)
Stage 2			-0.17 (0.25)	-0.18 (0.25)		
Districts-Stage 2			0.0035 (0.0045)			
Govs-Stage 2			-0.014*** (0.0036)			
Overlap-Stage 2				0.0090** (0.0038)		
City-Stage 2			0.035** (0.015)	0.033** (0.015)		
Stage 3					0.17 (0.25)	0.18 (0.25)
Districts-Stage 3					-0.0035 (0.0045)	
Govs-Stage 3					0.014*** (0.0036)	
Overlap-Stage 3						-0.0090** (0.0038)
City-Stage 3					-0.035** (0.015)	-0.033** (0.015)
Federal IG Rev.	-0.013 (0.044)	-0.013 (0.043)	-0.063* (0.037)	-0.062* (0.037)	-0.063* (0.037)	-0.062* (0.037)
State IG Rev.	0.019 (0.034)	0.020 (0.034)	-0.0066 (0.030)	-0.0040 (0.030)	-0.0066 (0.030)	-0.0040 (0.030)
General Revenue	0.15 (0.099)	0.15 (0.099)	0.18* (0.096)	0.17* (0.095)	0.18* (0.096)	0.17* (0.095)
General Expenditure	-0.15 (0.13)	-0.15 (0.13)	-0.11 (0.11)	-0.12 (0.11)	-0.11 (0.11)	-0.12 (0.11)
Population	-0.068 (0.15)	-0.069 (0.14)	-0.033 (0.12)	-0.049 (0.12)	-0.033 (0.12)	-0.049 (0.12)
Land Area	0.046 (0.12)	0.041 (0.10)	0.086 (0.11)	0.075 (0.097)	0.086 (0.11)	0.075 (0.097)
Year Trend	0.0079 (0.013)	0.0079 (0.013)	0.017 (0.012)	0.017 (0.012)	0.017 (0.012)	0.017 (0.012)
Constant	-15.5 (26.2)	-15.4 (26.2)	-34.0 (23.2)	-33.9 (23.2)	-34.2 (23.0)	-34.1 (23.0)
Observations	1871	1871	1871	1871	1871	1871

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Figure 4.7: Stage Comparison Plots—MSA Trade Position

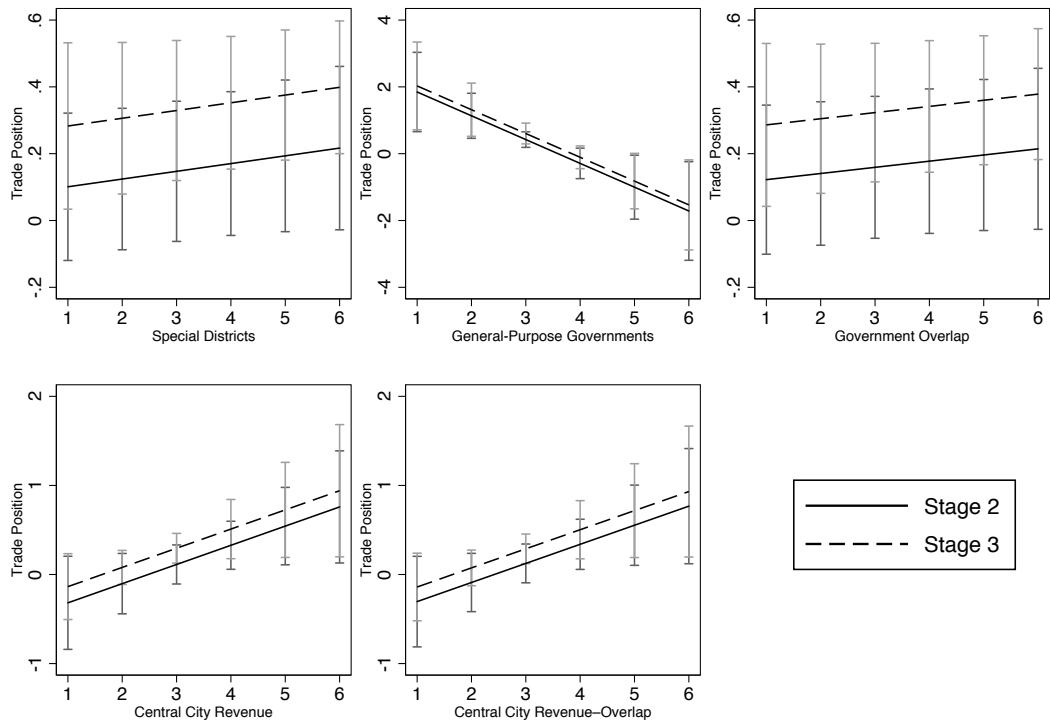
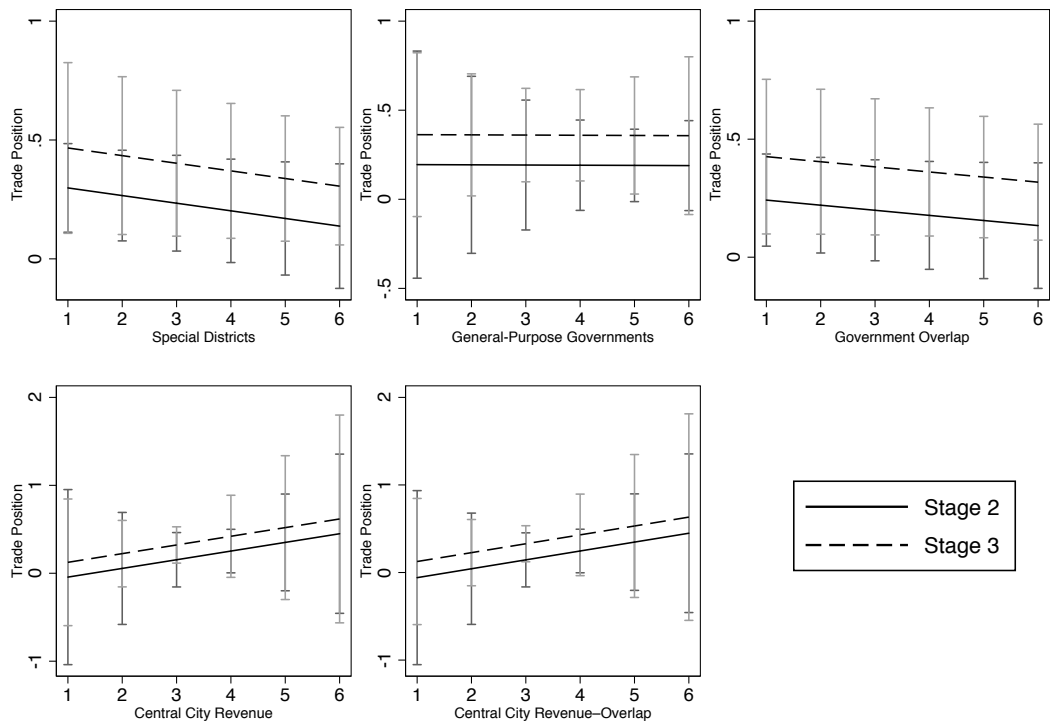


Figure 4.8: Stage Comparison Plots—State Trade Position



Manufacturing Employment

Table 4.12 displays the findings from the models with MSA manufacturing employment as the dependent variable. It should be noted that the manufacturing variable is a proportion of total MSA employment. Proportion dependent variables are subject to the same errors as binary variables in linear regression models. To account for this, manufacturing employment was logit transformed. This alters the interpretation of the coefficients. Instead of the percentage change in MSA or state manufacturing employment, the coefficients represent the percentage change in the ratio of manufacturing to non-manufacturing employment (i.e., all other employment). Returning to the results from Table 4.12, it is apparent that none of the coefficients are statistically significant. The ratio of manufacturing to non-manufacturing employment has no discernable relationship to local political institutions at the MSA level.

This absence of relationships is completely reversed at the state level. As Table 4.13 shows, each of the four institutional variables has a statistically significant relationship to the state ratio of manufacturing to non-manufacturing employment. Furthermore, as the plots in Figure 4.10 demonstrate: special districts, district overlap, and central city revenue exhibit statistically significant differences in their stage 2 and stage 3 impacts. In particular, each effect is stronger in stage 3, producing a higher dotted line in their respective plots and confidence intervals that do not overlap across most of the range. General-purpose governments are the exception, displaying a similar impact across time that leads to little separation between the stages. Because these findings have no counterpart at the MSA-level, however, they are not applicable here. Local institutions

therefore do not have a discernable impact on the ratio of manufacturing to non-manufacturing employment.

While manufacturing employment evinces no statistically significant relationships with the institutional variables, this disconnect is itself useful information. Specifically, because of its function in the trade position variable (i.e., the import-export ratio is multiplied by an MSA's manufacturing employment), these null findings indicate that trade position measures a characteristic that is distinct from an MSA's manufacturing employment share. Trade position is therefore not dominated by its employment multiplier, bolstering the notion that the variable captures overall international trade performance. More importantly, this suggests that the observed positive relationship between general-purpose governments and MSA trade position results from a more generalized competitiveness boost.

Table 4.12: MSA Manufacturing Employment

	Overall (1977-2005)		Stage 2 (1977-1986)		Stage 3 (1987-2005)	
	Manuf.	Manuf.	Manuf.	Manuf.	Manuf.	Manuf.
Special Districts	0.019 (0.023)		0.030 (0.024)		0.017 (0.021)	
General-Purpose Govs.	-0.16 (0.17)		-0.16 (0.17)		-0.15 (0.18)	
District Overlap		0.019 (0.023)		0.029 (0.024)		0.016 (0.022)
Central City Rev.	0.037 (0.029)	0.039 (0.029)	0.044 (0.030)	0.046 (0.031)	0.033 (0.030)	0.034 (0.030)
Stage 2			0.10 (0.11)	0.10 (0.11)		
Districts-Stage 2			-0.013 (0.0099)			
Govs-Stage 2			0.0087 (0.016)			
Overlap-Stage 2				-0.013 (0.0097)		
City-Stage 2			-0.011 (0.011)	-0.012 (0.0094)		
Stage 3					-0.10 (0.11)	-0.10 (0.11)
Districts-Stage 3					0.013 (0.0099)	
Govs-Stage 3					-0.0087 (0.016)	
Overlap-Stage 3						0.013 (0.0097)
City-Stage 3					0.011 (0.011)	0.012 (0.0094)
Federal IG Rev.	0.024* (0.014)	0.024* (0.013)	0.025* (0.015)	0.025* (0.015)	0.025* (0.015)	0.025* (0.015)
State IG Rev.	-0.038 (0.045)	-0.036 (0.046)	-0.038 (0.045)	-0.036 (0.046)	-0.038 (0.045)	-0.036 (0.046)
General Revenue	-0.088 (0.10)	-0.090 (0.099)	-0.089 (0.10)	-0.091 (0.098)	-0.089 (0.10)	-0.091 (0.098)
General Expenditure	0.12 (0.14)	0.11 (0.14)	0.12 (0.14)	0.12 (0.14)	0.12 (0.14)	0.12 (0.14)
Population	-0.065 (0.048)	-0.075 (0.048)	-0.085 (0.068)	-0.100 (0.061)	-0.085 (0.068)	-0.100 (0.061)
Land Area	0.041 (0.37)	-0.042 (0.38)	0.027 (0.38)	-0.049 (0.38)	0.027 (0.38)	-0.049 (0.38)
Year Trend	-0.0018 (0.0019)	-0.0017 (0.0019)	-0.0029 (0.0019)	-0.0027 (0.0019)	-0.0029 (0.0019)	-0.0027 (0.0019)
Constant	1.88 (3.95)	1.87 (3.95)	4.25 (4.35)	4.12 (4.44)	4.36 (4.39)	4.22 (4.48)
Observations	9844	9844	9844	9844	9844	9844

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 4.13: State Manufacturing Employment

	Overall (1969-2005)		Stage 2 (1969-1986)		Stage 3 (1987-2005)	
	Manuf.	Manuf.	Manuf.	Manuf.	Manuf.	Manuf.
Special Districts	0.098*** (0.034)		0.066* (0.034)		0.091*** (0.033)	
General-Purpose Govs.	-0.57*** (0.13)		-0.52*** (0.13)		-0.55*** (0.12)	
District Overlap		0.11*** (0.029)		0.080** (0.033)		0.11*** (0.027)
Central City Rev.	0.16*** (0.044)	0.16*** (0.045)	0.086*** (0.027)	0.089*** (0.029)	0.14*** (0.036)	0.14*** (0.037)
Stage 2			-0.65*** (0.21)	-0.67*** (0.21)		
Districts-Stage 2			0.025*** (0.0080)			
Govs-Stage 2			-0.032** (0.014)			
Overlap-Stage 2				0.026** (0.010)		
City-Stage 2			0.053*** (0.014)	0.052*** (0.015)		
Stage 3					0.65*** (0.21)	0.67*** (0.21)
Districts-Stage 3					-0.025*** (0.0080)	
Govs-Stage 3					0.032** (0.014)	
Overlap-Stage 3						-0.026** (0.010)
City-Stage 3					-0.053*** (0.014)	-0.052*** (0.015)
Federal IG Rev.	-0.020** (0.010)	-0.012 (0.010)	0.0088 (0.018)	0.018 (0.018)	0.0088 (0.018)	0.018 (0.018)
State IG Rev.	-0.025 (0.060)	-0.0098 (0.062)	-0.0055 (0.050)	0.011 (0.053)	-0.0055 (0.050)	0.011 (0.053)
General Revenue	-0.13** (0.058)	-0.14** (0.059)	-0.098* (0.050)	-0.10* (0.052)	-0.098* (0.050)	-0.10* (0.052)
General Expenditure	0.16 (0.11)	0.14 (0.12)	0.059 (0.097)	0.034 (0.11)	0.059 (0.097)	0.034 (0.11)
Population	0.29*** (0.076)	0.23*** (0.080)	0.38*** (0.078)	0.31*** (0.077)	0.38*** (0.078)	0.31*** (0.077)
Land Area	0.060 (0.16)	-0.36*** (0.097)	-0.029 (0.15)	-0.43*** (0.083)	-0.029 (0.15)	-0.43*** (0.083)
Year Trend	-0.048*** (0.0056)	-0.047*** (0.0057)	-0.045*** (0.0051)	-0.044*** (0.0050)	-0.045*** (0.0051)	-0.044*** (0.0050)
Constant	89.1*** (11.0)	90.1*** (11.3)	83.9*** (9.97)	85.1*** (10.2)	83.2*** (9.85)	84.5*** (10.0)
Observations	1871	1871	1871	1871	1871	1871

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Figure 4.9: Stage Comparison Plots—MSA Manufacturing Employment

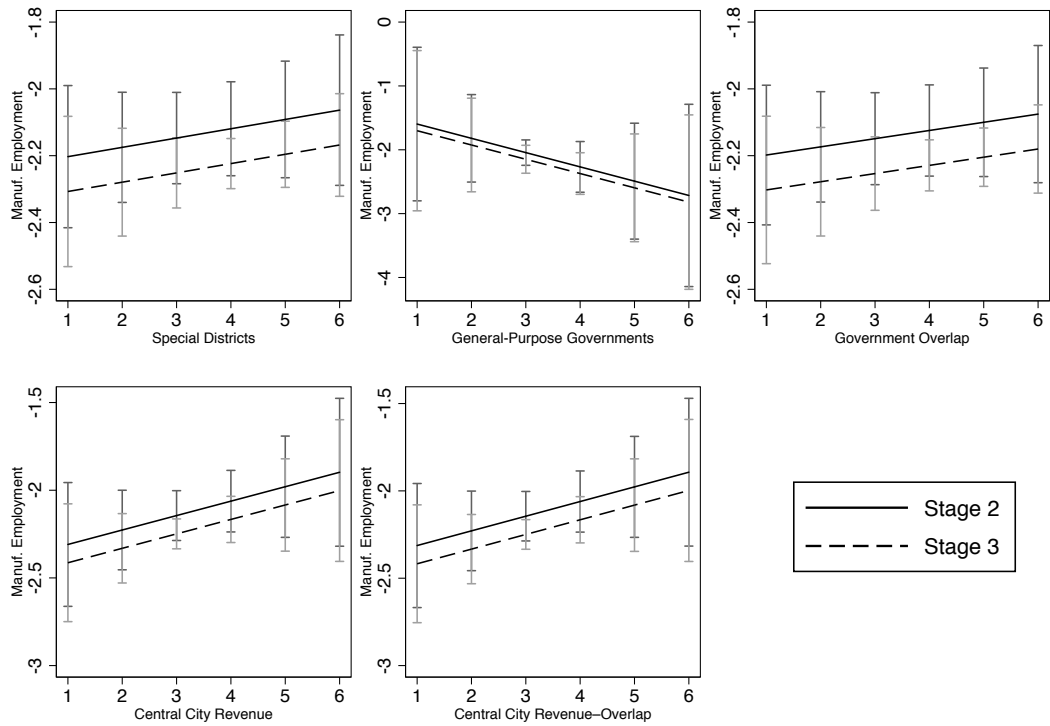
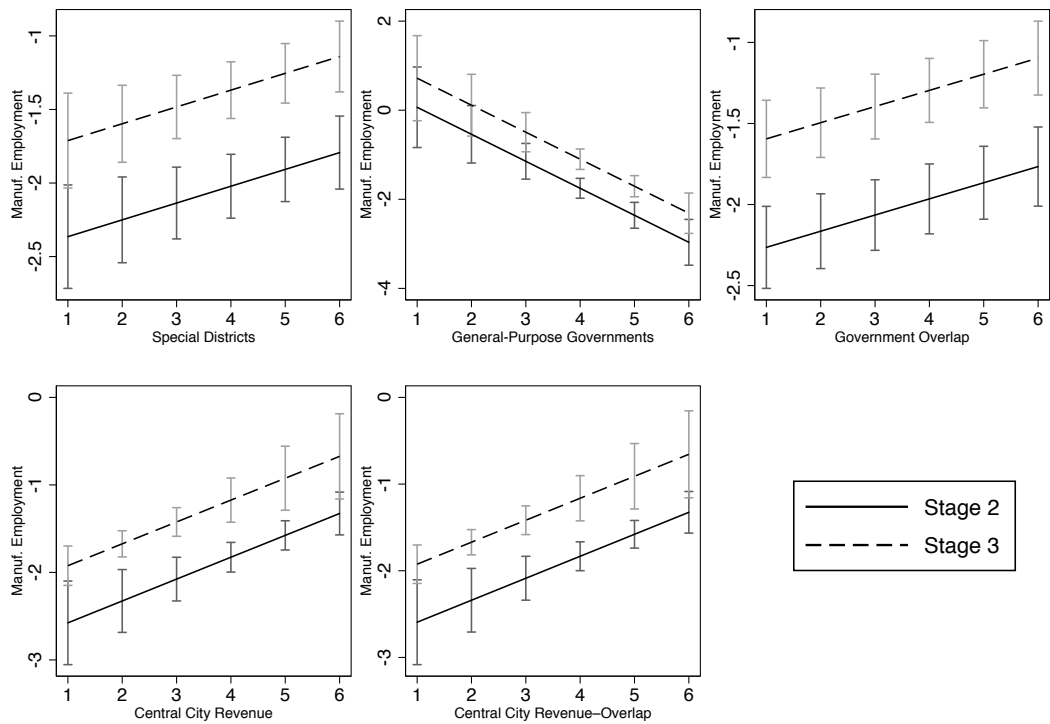


Figure 4.10: Stage Comparison Plots—State Manufacturing Employment



Service Employment

Table 4.14 shows the results for MSA service sector employment. As with manufacturing employment, the service sector variable is logit transformed, meaning that the coefficients represent percentage changes in the ratio of service sector to non-service sector employment. Among the institutional variables, central city revenue is the only one that is statistically significant. In the overall model, a 1% increase in per MSA central city revenue is associated with about a 2% drop in an MSA's ratio of service to non-service sector employment. This remains approximately the same in stage 2, dropping about a tenth of a percent, but increases in stage 3 to a 2.5% reduced ratio for every 1% revenue increase. Looking at the stage comparison plots in the bottom row of Figure 4.11, however, it is apparent that these differences are not statistically significant (i.e., the confidence intervals overlap across the range). The results from Table 4.14 and Figure 4.11 therefore indicate that special districts, district overlap and general-purpose governments have no relationship to an MSA's ratio of service to non-service sector employment, while central city revenue decreases this ratio by approximately 2% throughout the time period.

Table 4.15 presents the state-level service sector results. The findings corroborate the statistically insignificant institutional relationships, but do not provide increased support for the impact of central city revenue. Again, the lack of further evidence at the state-level does not invalidate the MSA-level central city result. However, because other findings resonated at the state-level (see income and per capita income), the evidence for a relationship between central city revenue and MSA service sector employment is

relatively less robust. Overall, the MSA and state-level output indicates that central city revenue reduces an MSA's service to non-service ratio, while special districts, district overlap, and general-purpose governments have no discernable impact.

Table 4.14: MSA Service Employment

	Overall (1977-2005)		Stage 2 (1977-1986)		Stage 3 (1987-2005)	
	Service	Service	Service	Service	Service	Service
Special Districts	0.0025 (0.0098)		0.0070 (0.0097)		0.000054 (0.0099)	
General-Purpose Govs.	-0.075 (0.049)		-0.058 (0.051)		-0.059 (0.050)	
District Overlap		0.0024 (0.0099)		0.0051 (0.011)		-0.00015 (0.0099)
Central City Rev.	-0.021** (0.0095)	-0.020** (0.0095)	-0.027*** (0.0096)	-0.024** (0.0095)	-0.018* (0.010)	-0.019* (0.0099)
Stage 2			-0.060* (0.031)	-0.056* (0.032)		
Districts-Stage 2			-0.0069 (0.0050)			
Govs-Stage 2			-0.00070 (0.0070)			
Overlap-Stage 2				-0.0053 (0.0051)		
City-Stage 2			0.0082** (0.0033)	0.0054* (0.0029)		
Stage 3					0.060* (0.031)	0.056* (0.032)
Districts-Stage 3					0.0069 (0.0050)	
Govs-Stage 3					0.00070 (0.0070)	
Overlap-Stage 3						0.0053 (0.0051)
City-Stage 3					-0.0082** (0.0033)	-0.0054* (0.0029)
Federal IG Rev.	-0.0078** (0.0036)	-0.0079** (0.0036)	-0.0081** (0.0039)	-0.0082** (0.0039)	-0.0081** (0.0039)	-0.0082** (0.0039)
State IG Rev.	-0.033* (0.018)	-0.032* (0.018)	-0.033* (0.018)	-0.032* (0.018)	-0.033* (0.018)	-0.032* (0.018)
General Revenue	-0.0022 (0.021)	-0.0034 (0.022)	0.00039 (0.021)	-0.0010 (0.021)	0.00039 (0.021)	-0.0010 (0.021)
General Expenditure	0.032 (0.034)	0.031 (0.034)	0.031 (0.032)	0.030 (0.032)	0.031 (0.032)	0.030 (0.032)
Population	0.040* (0.023)	0.034 (0.022)	0.040 (0.026)	0.029 (0.024)	0.040 (0.026)	0.029 (0.024)
Land Area	0.20 (0.13)	0.16 (0.13)	0.19 (0.13)	0.16 (0.12)	0.19 (0.13)	0.16 (0.12)
Year Trend	0.0017* (0.00087)	0.0017** (0.00084)	0.0020*** (0.00077)	0.0022*** (0.00075)	0.0020*** (0.00077)	0.0022*** (0.00075)
Constant	-5.18*** (1.76)	-5.19*** (1.75)	-5.82*** (1.50)	-6.01*** (1.50)	-5.88*** (1.50)	-6.07*** (1.51)
Observations	9844	9844	9844	9844	9844	9844

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 4.15: State Service Employment

	Overall (1969-2005)		Stage 2 (1969-1986)		Stage 3 (1987-2005)	
	Service	Service	Service	Service	Service	Service
Special Districts	-0.11 (0.10)		-0.0064 (0.13)		-0.12 (0.11)	
General-Purpose Govs.	1.03 (0.68)		1.05 (0.66)		1.18* (0.69)	
District Overlap		-0.13 (0.11)		-0.034 (0.13)		-0.14 (0.11)
Central City Rev.	-0.027 (0.10)	-0.029 (0.11)	0.072 (0.12)	0.056 (0.11)	0.0086 (0.11)	0.0015 (0.11)
Stage 2			0.32 (0.23)	0.29 (0.25)		
Districts-Stage 2			-0.11** (0.044)			
Govs-Stage 2			0.13* (0.066)			
Overlap-Stage 2				-0.11** (0.047)		
City-Stage 2			-0.063** (0.027)	-0.054** (0.027)		
Stage 3					-0.32 (0.23)	-0.29 (0.25)
Districts-Stage 3					0.11** (0.044)	
Govs-Stage 3					-0.13* (0.066)	
Overlap-Stage 3						0.11** (0.047)
City-Stage 3					0.063** (0.027)	0.054** (0.027)
Federal IG Rev.	-0.18*** (0.054)	-0.19*** (0.054)	-0.10* (0.060)	-0.12* (0.061)	-0.10* (0.060)	-0.12* (0.061)
State IG Rev.	0.0068 (0.19)	-0.0073 (0.18)	0.0095 (0.19)	-0.0081 (0.20)	0.0095 (0.19)	-0.0081 (0.20)
General Revenue	-0.16 (0.18)	-0.14 (0.18)	-0.22 (0.17)	-0.19 (0.17)	-0.22 (0.17)	-0.19 (0.17)
General Expenditure	0.31 (0.25)	0.32 (0.27)	0.29 (0.24)	0.30 (0.25)	0.29 (0.24)	0.30 (0.25)
Population	-0.95*** (0.24)	-0.85*** (0.24)	-1.11*** (0.29)	-0.96*** (0.25)	-1.11*** (0.29)	-0.96*** (0.25)
Land Area	-0.24 (0.96)	0.65 (0.45)	-0.35 (0.94)	0.65 (0.46)	-0.35 (0.94)	0.65 (0.46)
Year Trend	0.048*** (0.011)	0.047*** (0.011)	0.033*** (0.010)	0.032*** (0.010)	0.033*** (0.010)	0.032*** (0.010)
Constant	-82.8*** (22.6)	-84.4*** (22.5)	-51.7** (20.2)	-55.6*** (20.4)	-51.4** (20.3)	-55.3*** (20.5)
Observations	1610	1610	1610	1610	1610	1610

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Figure 4.11: Stage Comparison Plots—MSA Service Employment

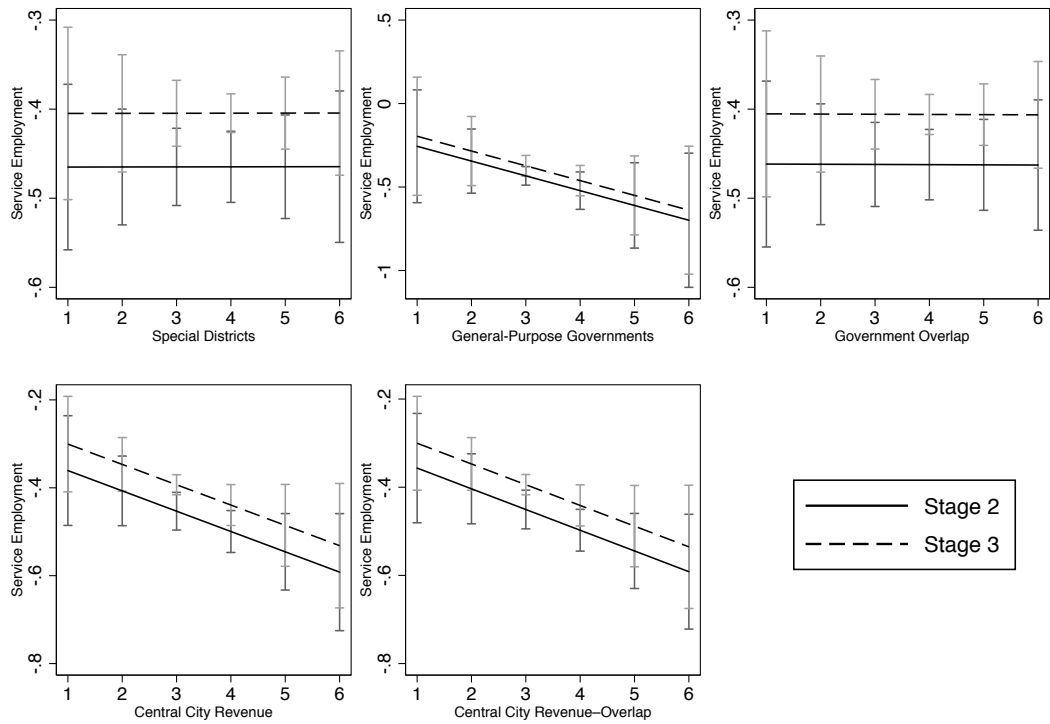
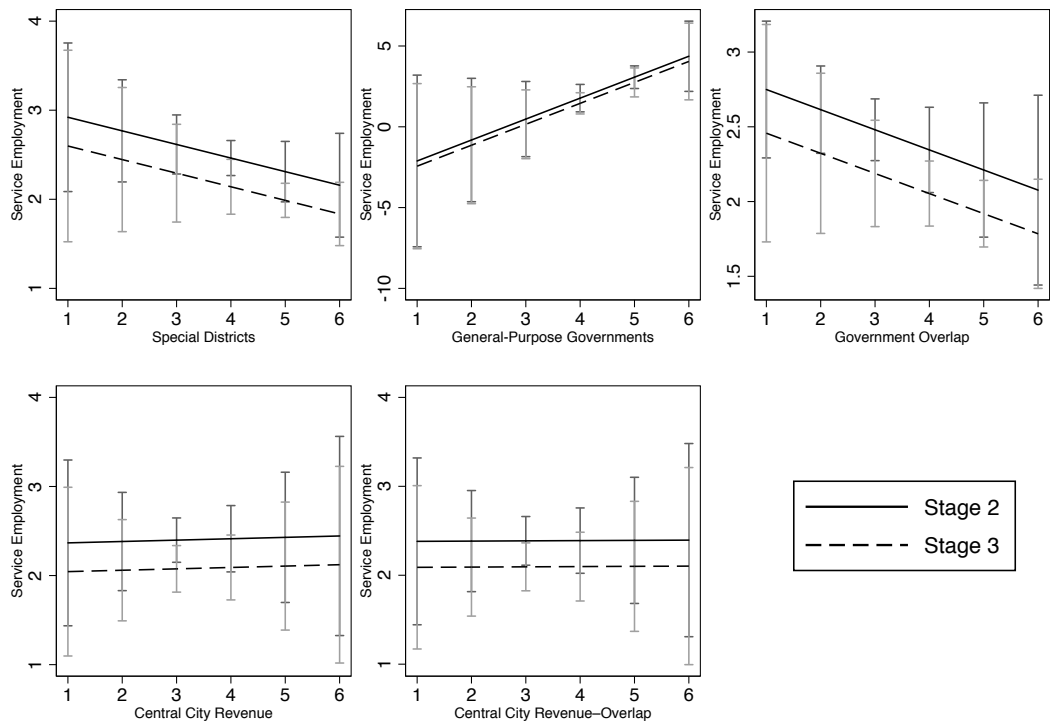


Figure 4.12: Stage Comparison Plots—State Service Employment



FIRE Employment

Table 4.16 has results for the models with MSA FIRE employment as the dependent variable. FIRE refers to employment in either the finance, insurance, or real estate industries. As noted above, these services are singled out because of their high productivity growth and association with the urban resurgence during stage 3. As a subset of the service sector, the FIRE service variable acts as a robustness test for the service sector findings above, as well as a direct test of this increasingly important area of urban employment. As with the other employment variables, FIRE employment is logit transformed, and therefore reflects percentage changes in the ratio of MSA FIRE employment to non-FIRE employment. As the results from Table 4.16 show, none of the four institutional variables has a statistically significant relationship to the ratio of MSA FIRE employment. The FIRE findings therefore add support to the wider service sector conclusion that special districts, district overlap, and general-purpose governments have no relationship to MSA service sector employment. They provide no additional support, however, for the sector's negative relationship to central city revenue.

The state-level FIRE employment results in Table 4.17 generally align with the MSA-level findings. Special districts, district overlap, and general-purpose governments have no statistically discernable relationship with the ratio of state FIRE employment to non-FIRE employment in each model. Central city revenue is not statistically significant in the overall or stage 2 models, but has a statistically significant effect in stage 3. Furthermore, looking at the revenue plots in Figure 4.14, the change in stage 3 produces a statistically significant difference across each revenue plot. While this fits with the

general MSA services finding, the absence of a corresponding relationship in the MSA FIRE models renders the information invalid. Overall, the FIRE employment models do not demonstrate any role for local institutions in explaining the proportion of FIRE services, nor do they buttress the central city revenue relationship found for services in general. At best, the results provide limited additional support for the estrangement between local political institutions (specifically special districts, district overlap, and general-purpose governments) and service sector employment in general.

Table 4.16: MSA FIRE Employment

	Overall (1977-2005)		Stage 2 (1977-1986)		Stage 3 (1987-2005)	
	FIRE	FIRE	FIRE	FIRE	FIRE	FIRE
Special Districts	-0.0045 (0.010)		-0.0015 (0.010)		-0.0047 (0.010)	
General-Purpose Govs.	-0.052 (0.059)		-0.053 (0.060)		-0.051 (0.054)	
District Overlap		-0.0046 (0.010)		-0.0017 (0.011)		-0.0050 (0.010)
Central City Rev.	-0.010 (0.0088)	-0.0099 (0.0090)	-0.0058 (0.010)	-0.0051 (0.010)	-0.011 (0.0088)	-0.011 (0.0092)
Stage 2			0.065* (0.034)	0.065* (0.035)		
Districts-Stage 2			-0.0032 (0.0066)			
Govs-Stage 2			0.0019 (0.0084)			
Overlap-Stage 2				-0.0032 (0.0069)		
City-Stage 2			-0.0055* (0.0030)	-0.0060** (0.0029)		
Stage 3					-0.065* (0.034)	-0.065* (0.035)
Districts-Stage 3					0.0032 (0.0066)	
Govs-Stage 3					-0.0019 (0.0084)	
Overlap-Stage 3						0.0032 (0.0069)
City-Stage 3					0.0055* (0.0030)	0.0060** (0.0029)
Federal IG Rev.	-0.0077 (0.0055)	-0.0078 (0.0054)	-0.0089 (0.0059)	-0.0090 (0.0058)	-0.0089 (0.0059)	-0.0090 (0.0058)
State IG Rev.	-0.019 (0.016)	-0.018 (0.016)	-0.019 (0.016)	-0.019 (0.017)	-0.019 (0.016)	-0.019 (0.017)
General Revenue	0.024 (0.032)	0.024 (0.032)	0.023 (0.032)	0.022 (0.032)	0.023 (0.032)	0.022 (0.032)
General Expenditure	-0.025 (0.045)	-0.025 (0.045)	-0.020 (0.045)	-0.020 (0.045)	-0.020 (0.045)	-0.020 (0.045)
Population	0.060*** (0.022)	0.055** (0.022)	0.050** (0.022)	0.044** (0.022)	0.050** (0.022)	0.044** (0.022)
Land Area	0.12 (0.13)	0.086 (0.12)	0.11 (0.13)	0.082 (0.12)	0.11 (0.13)	0.082 (0.12)
Year Trend	0.0024* (0.0012)	0.0025** (0.0012)	0.0021* (0.0013)	0.0022* (0.0013)	0.0021* (0.0013)	0.0022* (0.0013)
Constant	-8.70*** (2.15)	-8.71*** (2.14)	-8.06*** (2.19)	-8.11*** (2.23)	-8.00*** (2.20)	-8.05*** (2.24)
Observations	9844	9844	9844	9844	9844	9844

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 4.17: State FIRE Employment

	Overall (1969-2005)		Stage 2 (1969-1986)		Stage 3 (1987-2005)	
	FIRE	FIRE	FIRE	FIRE	FIRE	FIRE
Special Districts	0.012 (0.016)		0.029* (0.017)		-0.013 (0.015)	
General-Purpose Govs.	0.20*** (0.061)		0.27*** (0.086)		0.27*** (0.086)	
District Overlap		0.0056 (0.015)		0.0043 (0.019)		-0.014 (0.014)
Central City Rev.	-0.014 (0.023)	-0.015 (0.023)	-0.075*** (0.026)	-0.062** (0.025)	-0.026 (0.021)	-0.021 (0.021)
Stage 2			-0.37*** (0.078)	-0.43*** (0.077)		
Districts-Stage 2			-0.042*** (0.0081)			
Govs-Stage 2			-0.00037 (0.0088)			
Overlap-Stage 2				-0.018** (0.0070)		
City-Stage 2			0.049*** (0.0080)	0.041*** (0.0068)		
Stage 3					0.37*** (0.078)	0.43*** (0.077)
Districts-Stage 3					0.042*** (0.0081)	
Govs-Stage 3					0.00037 (0.0088)	
Overlap-Stage 3						0.018** (0.0070)
City-Stage 3					-0.049*** (0.0080)	-0.041*** (0.0068)
Federal IG Rev.	0.029** (0.011)	0.026** (0.011)	0.022** (0.0097)	0.019* (0.0095)	0.022** (0.0097)	0.019* (0.0095)
State IG Rev.	0.036* (0.020)	0.029 (0.020)	0.026 (0.021)	0.025 (0.019)	0.026 (0.021)	0.025 (0.019)
General Revenue	-0.0065 (0.038)	-0.0051 (0.037)	0.025 (0.032)	0.022 (0.034)	0.025 (0.032)	0.022 (0.034)
General Expenditure	-0.018 (0.065)	-0.0074 (0.066)	-0.045 (0.053)	-0.038 (0.057)	-0.045 (0.053)	-0.038 (0.057)
Population	-0.12*** (0.039)	-0.098** (0.039)	-0.078* (0.040)	-0.095** (0.040)	-0.078* (0.040)	-0.095** (0.040)
Land Area	-0.11** (0.043)	0.076*** (0.023)	-0.19*** (0.060)	0.087*** (0.026)	-0.19*** (0.060)	0.087*** (0.026)
Year Trend	0.0014 (0.0027)	0.0011 (0.0027)	0.0070* (0.0036)	0.0068* (0.0036)	0.0070* (0.0036)	0.0068* (0.0036)
Constant	-3.66 (5.34)	-4.12 (5.39)	-14.4** (7.02)	-14.8** (7.15)	-14.7** (7.04)	-15.2** (7.17)
Observations	1873	1873	1873	1873	1873	1873

Standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Figure 4.13: Stage Comparison Plots—MSA FIRE Employment

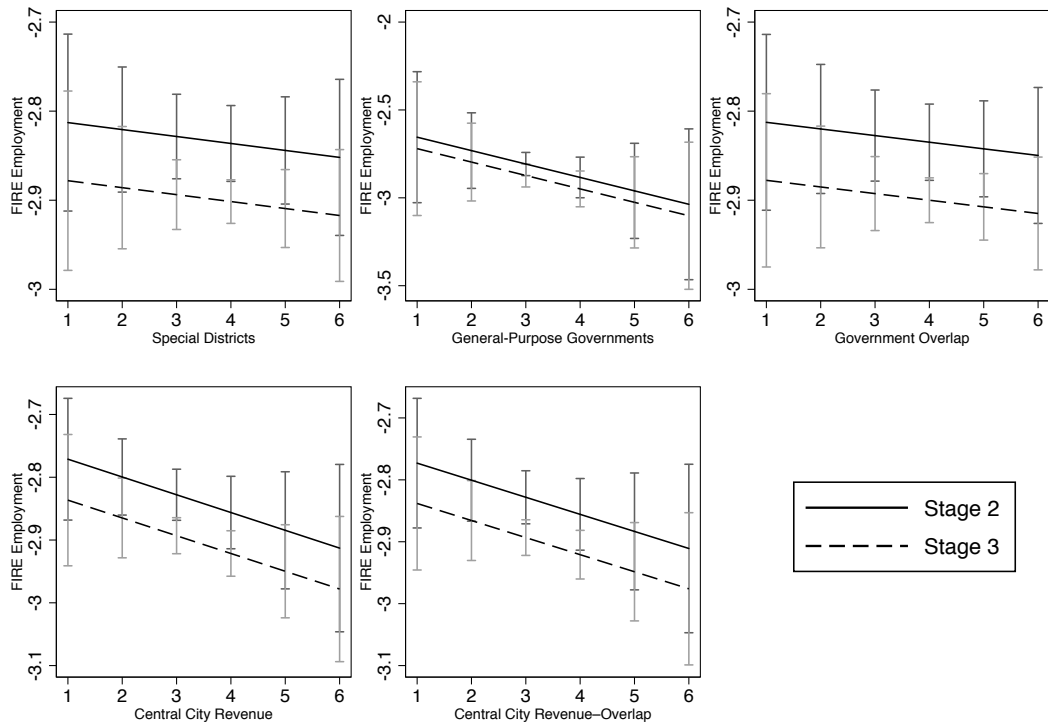
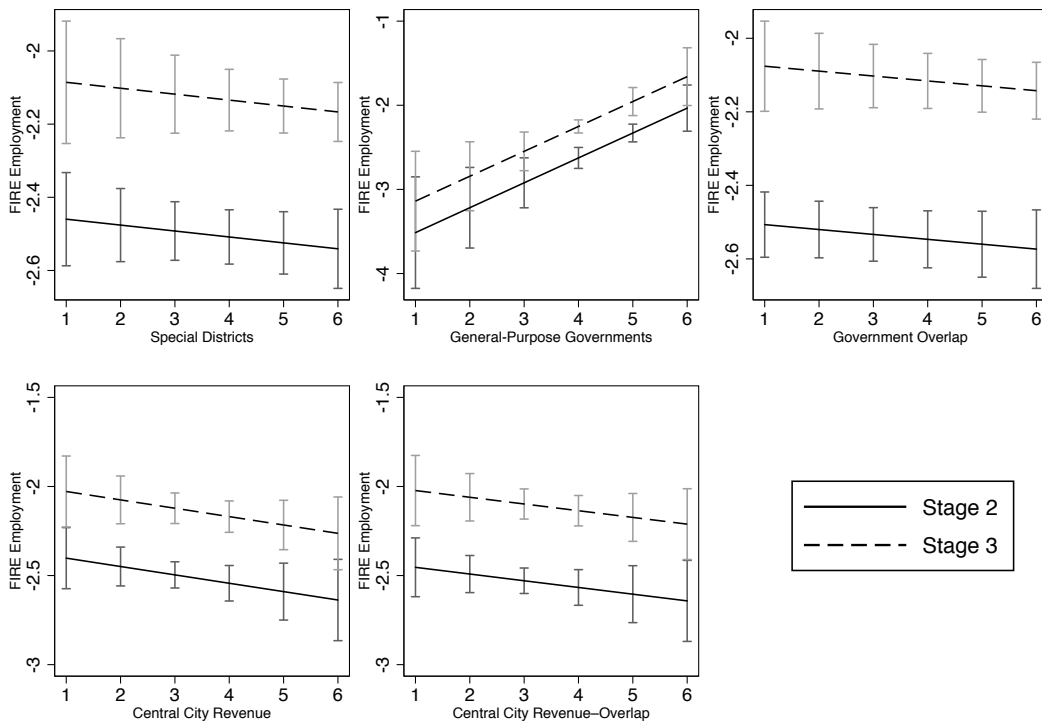


Figure 4.14: Stage Comparison Plots—State FIRE Employment



Results Summary

The full set of results yield the following findings regarding the relationship between local political institutions and local economic outcomes:

Table 4.18: Summary of Panel Regression Findings

Local Institution	Economic Outcome	Finding	Stage Effects	Level of Support
Special Districts	Income	+	None	MSA and State
	Income PC	+	None	MSA and State
	Trade Position:	NR	-----	-----
	Manufacturing	NR	-----	-----
	Services	NR	-----	-----
	FIRE Services	NR	-----	-----
General-Purpose Govs.	Income	NR	-----	-----
	Income PC	+	Stage 3 only	MSA and State
	Trade Position*	+	None	MSA
	Manufacturing	NR	-----	-----
	Services	NR	-----	-----
	FIRE Services	NR	-----	-----
District Overlap	Income	+	None	MSA and State
	Income PC	+	None	MSA and State
	Trade Position	NR	-----	-----
	Manufacturing	NR	-----	-----
	Services	NR	-----	-----
	FIRE Services	NR	-----	-----
Central City Revenue	Income	+	None	MSA and State
	Income PC	+	None	MSA and State
	Trade Position	NR	-----	-----
	Manufacturing	NR	-----	-----
	Services	-	None	MSA
	FIRE Services	NR	-----	-----

*Technically, this coefficient has a negative sign, but a positive sign is used here to signal a positive economic relationship.

V. Theoretical Analysis

The panel regression findings can now be related back to the hypotheses. Table 4.19 below is an augmented version of the hypothesis summary table from Chapter 3 (i.e., Table 3.2). Rather than a summary prediction for all of the hypotheses, it now lists the conceptual components from the theory and indicates whether or not the predicted relationship for each component is supported in the above analysis. Because the time period of the datasets excludes stage 1, I have removed it from the table. A concept is marked with "H₁" if its associated hypothesis is supported by the data and "H₀" if it is unsupported.

Table 4.19: Hypothesis Test Results

	Stage 2			Stage 3		
	Growth Sector	Overall Perform.	Int'l. Perform.	Growth Sector	Overall Perform.	Int'l. Perform.
Territorial Competition	H ₀	H ₀	H ₁	H ₀	H ₀	H ₀
Primary City Government	H ₀	H ₀	H ₀	H ₀	H ₁	H ₀
Special-purpose Governments	H ₀	H ₁	H ₀	H ₀	H ₀	H ₀

As is apparent from the large number of "H₀" results, the stage-based theory is largely unsupported by the data. Specifically, there is no evidence of a relationship between the institutions and the performance of a stage's growth sector, and the expected connections to performance are only accurately predicted three times. Overall, the stage framework does not appear to be a useful tool for explaining how metropolitan political institutions affect the local economy over time.

In addition to these hypotheses, I made an additional claim specifically related to international performance.

Territorial Competition & Special-purpose Government:

- **Stage 2–Positive:** Because territorial competition provides greater fiscal separation from the primary central city than special-purpose governments, I expect territorial competition to have a *stronger positive* relationship to international competitiveness than special-purpose governments.

This hypothesis is supported by the data. Specifically, territorial competition improves trade position throughout the time period, having its strongest effect in stage 2. Special districts, on the other hand, have no relationship to trade position at any point in time.

While the stage theory does not function as expected, three findings nonetheless stand out, one for each institution: 1) primary cities have strong, consistently positive effects on overall economic performance; 2) special districts display the same consistently positive relationship to overall performance (although it is smaller); and 3) territorial competition has a unique relationship to international performance (i.e., it is the only institution that affects international performance, and that is its only role). These findings have significant implications for both the urban political economy sub-discipline and the field of political economy as a whole. For urban political economists, the strong, stable relationship that primary cities have with the local economy serves as a counter to the turn toward polycentric conceptualizations of modern urban areas. Even through the tumult of de-concentration, urban economies have remained basically monocentric. The positive impact of primary city government bolsters this argument and gives it an institutional manifestation. Similarly, the positive impact of special districts stands in contrast to the ascendant view. In particular, it directly contradicts the negative image set

out by Burns (1994) and strongly reinforced by Berry (2009). Importantly, the effect does not change if districts are measured as overlap, or simply counted (calling into question one of Berry's main contributions). Thus, the pessimism about special districts, while warranted in terms of democratic accountability and taxation, needs to be balanced by a more thorough assessment of the return on investment. Finally, the unique relationship between territorial competition and international performance reinforces the link between economic openness and urban de-concentration. Whereas the first two findings stand in opposition to current scholarship, this result buttresses the primary claim of the urban primacy literature while also giving it an institutional component.

For the broader field of political economy, the strongly positive impact of the primary city casts significant doubt on the importance of fiscal equivalence. That is, because the primary city is the local institution offering the least correspondence between taxpayer and beneficiary, its performance relative to districts and territorial competition significantly undermines the economic argument for those institutions. In addition to this implication, the specialized role of territorial competition puts a damper on the wide-ranging enthusiasm for the Tiebout model. While sorting-induced efficiency gains are an attractive idea, the evidence found here indicates that they only impact metropolitan economies under conditions of extreme stress (in this case, import competition). If verified in other settings (i.e., higher levels of government), this would indicate that the mechanism described by Tiebout is far less important to macroeconomic performance than the level of academic interest in this topic would indicate.

Conclusion

In this chapter, I tested the institutional hypotheses derived from the stage theory on two panel datasets, one at the MSA level and one at the state level. Using a dynamic panel estimator, I was able to examine the substantive and statistical significance of the proposed relationships between the MSA institutional and economic variables. Identifying 1986 as the cutoff year for the US economy's transition to stage 3, I was further able to examine these relationships for any evidence of any stage-induced changes. Relating these findings back to the hypotheses, I was forced to conclude that the stage theory is largely unsupported by the data. While the theoretical framework failed these tests, several relevant findings nonetheless emerged. These were: institutional support for a monocentric understanding of metropolitan economies; counter-evidence for the notion that a proliferation of special districts harms local economies; institutional support for a unique relationship between economic openness and urban de-concentration; counter-evidence for the importance of fiscal equivalence to economically beneficial local governance; and scope conditions for the Tiebout model. With these results in mind, I now turn in the concluding chapter to a discussion of how these results apply to Detroit. I then conclude the dissertation by discussing four directions for future research.

Chapter 5: Detroit Case Study and Future Directions

Introduction

At the time of this writing, the city of Chicago is in the midst of serious financial turmoil. On May 12, 2015, Moody's Investor Services downgraded the city's credit rating to "junk" status. Citing an Illinois Supreme Court decision rescinding the most recent attempt at pension reform (for both the city and the state), the ratings agency increased its assessment of the city government's default risk, passing the critical threshold. Aside from causing a significant spike in the city's bond rate, this move also led to a flurry of media coverage. For understandable reasons, Chicago's plight has drawn numerous comparisons to Detroit—which exited bankruptcy just six months prior. Compared to the apocalyptic narratives applied to Detroit, however, analyses of the Chicago crisis have been far more optimistic. Instead of re-hashing past sins and apportioning blame, many commentators have focused on practical ways forward. For example, *Chicago Tribune* columnist Eric Zorn (2015) wrote about the necessity and appropriateness of raising the city's property taxes. To make the case, he noted that Chicago's property tax rate ranks 265 out of 276 in a comparison of Illinois towns of over 10,000, and 47 out of 51 in a comparison of the largest cities in each state (plus the District of Columbia). Following up on this, fellow *Chicago Tribune* columnist Melissa Harris (2015) wrote a column comparing Chicago's tax situation to Detroit's, arguing that, "Chicagoans should consider a modest property tax increase inevitable, though how much of an increase it will be could be affected by Moody's decision, which made it more expensive for Chicago to borrow money. The difference [compared to Detroit] is that Chicago's economy will be

able to withstand it." Indeed, the frequent comparisons to Detroit appear to be at least partly responsible for the difference in tone. In a panel discussion held shortly after the Moody's announcement, Matt Fabian of Municipal Market Analytics offered this much-cited analysis.

Detroit is Iraq. Detroit is a disaster zone. They have no economy. Their economy is in the rubble. They have raised revenues repeatedly, and it's been unsuccessful.... Chicago is the third-largest city in America. It's nothing like Detroit. Chicago is a real city. There are people. There are jobs. There are solutions. There's growth. If anything, the Loop is too crowded. It's a completely different ballgame (Spielman 2015).

Although Fabian's rhetoric is overheated, he clearly conveys why the Detroit comparison is soothing: it draws attention to Chicago's vastly superior economic performance. It is because of this long-standing performance gap that, despite facing similar struggles (de-industrialization, poor climate, corrupt government), Detroit's dramatic fall into bankruptcy is Chicago's "modest" tax increase.

In this dissertation, I have sought to identify the characteristics underlying such large, persistent gaps in urban economic performance. Drawing on research linking national performance to political institutions, I have attempted to develop an analogous understanding of how local political institutions affect the structure and performance of metropolitan economies. While the theory I put forward was largely unsupported by my data analysis, the effort yielded several important insights and, by way of implication, several ways forward for future research. In this chapter, I apply these insights to the case of Detroit and detail these ways forward. The chapter is broken into two sections. In the first section, I discuss how my research enhances current understandings of Detroit. In the second section, I discuss four ways in which future researchers can improve upon my

efforts to understand of the relationship between MSA political institutions and their economies. Finally, I conclude the chapter with a summary.

I. Detroit in Institutional Perspective

In the introduction to Chapter 2, I discussed the "poor investments at critical junctures" theory of urban decline. Emanating from neoclassical urban economists, this line of reasoning roots urban decline in the types of investments that are made when an area's population begins to decline. Summarized briefly: urban investments that attract small businesses, increase population density, and grow the base of high-skilled workers produce rebounds; all other efforts (stadiums, casinos, entertainment districts, etc.) fail. Looking at the argument more closely, it is apparent that it has two parts: a general theory of urban economic growth, and a logical deduction relating these characteristics to specific urban investments. The urban growth theory is premised on the idea that metropolitan areas grow primarily by cultivating the above three characteristics in their primary cities (with the aftereffects sustaining the suburbs). As Edward Glaeser (2012) put it in his popular press book, *Triumph of the City*, "[Boston and New York] have reinvented themselves by returning to their old, preindustrial roots of commerce, skills, and entrepreneurial innovation. If Detroit and places like it are ever going to come back, they will do so by embracing the virtues of the great pre- and postindustrial cities: competition, connection, and human capital" (Kindle Locations 777-783). In large part because of the research prompted by the urban resurgence, this theory is now backed by a great deal of empirical evidence (Henderson and Thisse 2004; Glaeser 2008). The second part of the argument relates these three elements to major urban investment decisions,

typically revitalization efforts. Elaborating on the arguments from *Triumph of the City*, Glaeser demonstrated this second component in a *Boston Globe* opinion piece published the week after Detroit's bankruptcy filing.

The hallmark of declining cities is that they have more buildings and infrastructure than they need. Yet in the 1960s, under Mayor Jerome Cavanagh, Detroit used public money for urban renewal, building new structures that weren't necessary. Under Mayor Coleman Young, the city spent hundreds of millions on an absurd monorail system that glides over empty streets. Instead of spending on schools and safety, Young doubled down on automobile employment, using eminent domain and tax subsidies to induce General Motors to build a plant on what had been the Poletown neighborhood (Glaeser 2013).

This quote is revealing in two ways. One, it clearly shows how the neoclassical urban growth theory has been applied to explain decline: first, researchers identify major revitalization efforts, then they assess whether or not those investments boost one of the three primary city characteristics (e.g., the monorail is a problem because it does not actually create connection/density; the plant subsidy seeks to attract big business rather than many small ones). Two, with its vague references to "schools" and "safety," it also reveals the fundamental flaw in this approach: it offers insufficient guidance in identifying the counterfactual investments that would have prevented decline. In this section, I show how the research in this dissertation can be used to improve the neoclassical explanation of metropolitan decline. I do so by first arguing that an understanding of institutions provides essential context for the "poor investments at critical junctures" theory. I then apply this argument to metropolitan Detroit. First, I provide a brief economic history of the region, structured around the stage-based theory of urban development. I then couple this narrative with the data and findings from

Chapter 4 to show how knowledge of the area's institutional history helps to better identify the investments that might have prevented the area's dramatic failures.

Institutions and Poor Investments

As a researcher, a natural response to Glaeser's analysis of Detroit is to seek a more thorough accounting of primary city revitalization investments. If monorails and stadiums have historically failed, what about increasing higher education funding or providing small business tax breaks? Following the lessons of the national institutions model, however, such an approach would likely prove insufficient. Without an understanding of the more fundamental decision-making structures within which investments are made, it is often impossible to know how a specific investment will be used within an economic setting. For example, one could argue that the Soviet economy would not have collapsed had more resources been put toward developing information technology (a major source of Western growth after 1980). But this ignores the ways in which Soviet political economic institutions would have channeled those resources. Indeed, perverse incentives among Soviet managers—who feared they would be replaced by computers—led to a misuse of the resources that actually were dedicated to developing a nation-wide computer network (i.e., a Soviet version of the internet) (Gerovitch 2008). Applying this logic at the metropolitan level, one could argue that increasing funding for higher education is a good way to boost primary city human capital (one of the three sources of urban growth). But this ignores the particular ways in which an MSA's political economic institutions would channel such resources. For example, it is easy to imagine someone making this case regarding Wayne State, metro Detroit's largest

university. And indeed, increasing its funding would likely increase the university's output. But how would this affect the city of Detroit's skill level? Given what we know about the location choices of college graduates in the contemporary United States, the effect would likely be minimal (Moretti 2012). That is, most of Wayne State's new graduates would move elsewhere for work, either to the suburbs or other metro areas entirely.

Here again it is important to note the differences between national and local political economic institutions. In the Soviet case, the investment capital put toward IT would likely have been ineffective because production decisions were de-coupled from supply-and-demand forces, instead reflecting the incentives of the central planning bureaucracy. Local institutions, by definition, do not alter incentives in such a comprehensive and direct manner. Instead, they affect the characteristics of local public goods in ways that differentially impact local producers. In this way, they provide a public goods environment that is more conducive to certain types of businesses than others, both reflecting and shaping local comparative advantage. Thus, in the Detroit case, an investment in higher education would likely be ineffective at boosting the primary city's growth because the metro area's institutional infrastructure does not channel or attract high-skilled employers to its downtown.

These differences notwithstanding, the reason why the "poor investments at critical junctures" explanation fails is the same in both cases: it does not consider the more fundamental issue of how particular institutional environments channel these investments. Without this understanding, the categorization of good and bad investments

is either too vague (e.g., schools and safety), or too idiosyncratic (e.g., information technology and higher education). If the investments approach is augmented with an understanding of the institutional environment, however, a more focused explanation can be constructed.

Detroit: A Stage-Based History

The benefits of this approach can be demonstrated by applying the findings from this study to Detroit's decline. Before doing so, this section provides a brief history of the metropolitan Detroit economy, using the urban development stage theory to structure the narrative and highlighting the role of institutions where appropriate.

Like most pre-industrial cities, Detroit was founded and grew because of its proximity to a major waterway—the Detroit River. As a narrow, centrally located portion of the Great Lakes trade route, the river allowed for both easy monitoring (aiding in the defense of a settlement) and easy shipping to the northern and southern territories of New France. Recognizing these advantages, the French commandant for the region, Antoine de la Mothe Cadillac, went personally to King Louis XIV in 1699 to make the case for a new settlement. Having been granted his request, he established Detroit upon his return in 1701 (Martelle 2012, 1-7). While the settlement proved durable, Cadillac's vision of a major site for commerce was not truly realized until the nineteenth century. During that period, two major changes provided a major boost to the city. The first was the development of a more extensive internal trade network. In particular, the completion of the Erie Canal in 1825 (connecting the Great Lakes to the East Coast) and the Illinois and Michigan Canal in 1848 (connecting the Great Lakes to the Mississippi River)

established a trade route that greatly enabled internal growth and migration. From 1850 to 1970, five of the US's ten largest cities were located along this route (Glaeser 2012, Kindle Locations 811-813). The second was the US's entrance into stage-one industrialization during the latter half of the century (Stearns 2012). As a result of these changes, Detroit's population grew tenfold between 1850 and 1890—from 21,000 to 206,000; and by 1907, approximately 67 million tons of goods were shipped along its river—more than three times the annual number passing through the ports of New York or London (Glaeser 2012, Kindle Locations 827-831).

As is well known, Detroit's experience with stage-one industrialization resulted in the world's first affordable, mass-produced automobiles, an invention that transformed both the city and the global economy. The story of this innovation fits well within the neoclassical theory of urban growth. As an important shipping hub in a heavily forested state, Detroit was home to both a strong carriage and shipbuilding industry. This filled the area with expertise in the two components that combine to make automobiles: carriages and engines. Added to this mix was the US's status as a newly industrializing country, a period in which cities generally experience a surge of in-migration and a proliferation of small businesses. For Detroit, these circumstances combined to produce an increasingly dense city that brimmed with entrepreneurs and auto-related human capital. Thus, when Germany's Karl Benz sent the first gasoline-fueled automobile to the Chicago World's Fair in 1893, it landed in fertile soil. Just three years later, two Detroit engineers—Charles King and Henry Ford—produced their own versions within three months of each other (Glaeser 2012, Kindle Locations 783-834; Martelle 2012, 69-83). Shortly thereafter,

Detroit became a magnet for auto innovation. In 1899, Ransom Olds moved his family from Lansing to Detroit with the hopes of entering the industry. In 1901, he made his mark by building the first assembly line in a downtown Detroit factory, resulting in the first mass-produced automobiles. Two years later, the Packard brothers moved their burgeoning luxury automobile business from Ohio, taking the assembly line to new heights by constructing a three and a half million square foot downtown facility (photos of the decaying Packard Plant feature heavily in news stories about Detroit). And finally, Henry Ford took all of these advances to their apex with the advent of the conveyor belt assembly line in 1913. The efficiency gains from this innovation both radically increased the volume of automobiles and radically reduced their cost, dropping the price to an average of \$525 by 1919. As a result, automobiles became widely available and affordable for the first time, making them a mainstream consumer product (Martelle 2012, 70-2). The neoclassical combination of small business, density, and skill plainly proved effective in stage-one Detroit.

Conforming to the stage-one prediction, Detroit's industrial success led to massive primary city growth. In his history of the city, Scott Martelle (2012) offers this useful summary.

In 1900, the US Census reported Detroit's population at nearly 286,000 (ranked thirteenth in the country), with just over 115,000 people, age ten or older, working. Of those, some forty-five thousand, or nearly 40 percent, were in manufacturing, led by machine shops and other facilities tied to making railroad automobiles and stoves....By the 1910 federal census, the city had exploded in a new direction, with the population reaching 466,000 (ranked ninth), of whom 215,000 were working and more than half—122,000—laboring in manufacturing. And for the first time, the census counted a new category: exactly 5,304 people were reported working in automobile manufacturing. Ten years later, some 35,000 people were working in that sector, and by 1929, the number of wage

earners in metro Detroit's motor vehicle industry (which would include Ford's massive Rouge plant in Dearborn) had climbed to 158,000 in a city of more than 1.6 million people, trailing only New York, Chicago, and Philadelphia among the nation's largest. And the count of autoworkers didn't include those working in ancillary support industries (71).

While the primary city clearly led the way, as Martelle alludes to with the Dearborn plant, it did not take long for its massive growth to produce pressures for de-concentration. Indeed, Ford's new factory was the city's first major de-concentrating move. Located in a suburb nine miles west of downtown, the seven million square foot facility was the largest factory in the world when it opened in 1928 (Glaeser 2012, *Kindle Locations* 893-894). Ford's ability to make such a move was in large part due to other automobile-related advances. In particular, improved road technology (also pioneered in Detroit) spread throughout the country between 1914 and 1929. This weakened the entire economy's dependence on waterborne transit and lowered the cost of suburban development (Martelle 2012, 72-3). With the burdens of relocation dropping to new lows and Detroit's most successful automobile company leading the way, the city was already primed for stage two by the eve of 1930. The Great Depression and World War II intervened, however, delaying the process for nearly twenty years.

Almost as soon as the war ended, Detroit's de-concentration resumed. This is best evidenced by the re-location decisions of the Big Three (Chrysler, Ford, and General Motors), which by then dominated the area's economy. Between 1947 and 1958, these companies built twenty-five new plants in metropolitan Detroit, all of them outside the jurisdiction of the city, most more than 15 miles from the nearest Detroit boundary (Sugrue 1996, 128). In addition to this internal diffusion, Detroit's automakers also

moved to other small- and medium-sized cities. The total impact from this latter form of de-concentration was quite large. As historian Thomas Sugrue describes it, "In 1950, 56 percent of all automobile employment in the United States was in Michigan; by 1960, that figure had fallen to 40 percent" (128). It is therefore apparent that when the city began de-concentrating in earnest, the process was intense and heavily reliant on territorial competition (i.e., the above re-locations were to suburbs or new cities, not to adjacent parts of the city that could be annexed and/or serviced via special district). Interestingly, these movements were widely noticed at the time and became the subject of academic study. In particular, multiple surveys of Michigan executives were conducted to ascertain the reasoning behind their location decisions. The findings indicated that the primary reasons for moving were high labor and land costs. The land issue was especially problematic as the layout of the moving assembly line required single-story buildings, rendering the city's many multi-story facilities outdated (Black 1958; Mueller and Morgan 1962; Sugrue 1996, 129). Thus, according to those who made the decisions, the logic of Detroit's de-concentration reflected a core component of the stage theory: urban congestion from stage one incentivizes a diffusion of the primary city.

What about the role international competition? According to the stage theory, the de-concentrating effects of urban congestion can be augmented in substantial ways by direct import competition. Furthermore, when this does occur, territorial competition often becomes a more attractive means of de-concentrating (a relationship that was supported by the data). While it is clear that both import pressure and territorial competition played a significant role in the Detroit's economy, the impact of this

relationship on the city's de-concentration only partially conformed to theoretical expectations. On the conforming side, metropolitan Detroit can safely be classified as an open economy during its period of de-concentration, meeting the necessary condition set out by scholars of excessive urban concentration. From its inception until 1981, the US auto industry (and therefore, effectively, the postwar Detroit economy) was characterized by a high degree of economic openness. The industry received almost no government protection and held a clear competitive advantage in the domestic market for most of that time (Abernathy and Klark 1982, 51-3). In that year, however, the US and Japan signed a "voluntary export restraint" agreement that put a quota on cars imported from Japan. As is well known, this was prompted by significant growth in the sale of Japanese cars in the 1970s (Berry, Levinsohn, and Pakes 1999). The agreement lasted until 1994, after which the US auto market returned to a state of near complete openness. Analysts believe this happened both because of the advent of the WTO, and a decision by industry leaders to accept high import penetration in exchange for leverage in trade negotiations with emerging markets (Cooney and Yacobucci 2006, 71-92). Because the city began to de-concentrate almost immediately after World War II and protectionist measures did not arise until 1981, it is safe to say that metropolitan Detroit was an open economy for most of stage two.

Contrary to theoretical expectations, however, imports did not play a straightforward role in the (apparent) heavy use of territorial competition in Detroit. In 1955, imports accounted for just 1% of total US auto sales. By 1970, that number had climbed to approximately 15%, and would increase above 20% in the early 1980s (on the

eve of the Japanese VER agreement) (Abernathy and Klark 1982, 52-5; Cooney and Yacobucci 2006, 72). While it is difficult to say precisely when the US auto industry began to feel import pressure, the small percentage of foreign sales ten years into the postwar period makes it clear that de-concentration was well under way before import competition became an evident concern. Unless the companies were affected by rational expectations of future import competition, the rise in imports at most reinforced the intensity of de-concentration.

Even without the accelerant of import competition, Detroit's stage-two de-concentration was extreme. This is best evidenced by the devastation of the city. Between 1947 and 1967, the city lost nearly 130,000 manufacturing jobs and over three hundred manufacturing firms (Sugrue 1996, 144). As Thomas Sugrue describes it, "Only fifteen years after World War II, Detroit's landscape was dominated by rotting hulks of factory buildings, closed and abandoned, surrounded by blocks of boarded-up stores and restaurants (147). The city's African American population bore the brunt of this decline. Between 1950 and 1970, the city's total jobless rate hovered steadily around 7%. For the black population, however, this rate was 12% in 1950, a shocking 20% in 1960, and 10% in 1970. Thanks in large part to Sugrue's exhaustive study, the reasons for this disjuncture are now well known and not much disputed. African Americans migrated to the city in large numbers in the first half of the twentieth century to take advantage of the auto industry boom. The city's African American population went from 1.2% in 1910 to 16.2% in 1950, and increased to 28.9 by 1960. When they arrived, however, these migrants faced systematic exclusion from both the labor and housing markets. Before

World War II, nearly every manufacturing firm in the city refused to hire African Americans, and a combination of discriminatory lending practices and explicit racial zoning confined African Americans to the oldest, most dilapidated housing. While these policies were reversed in substantial ways in the postwar era, the years of forgone wealth accumulation (as well as continued discrimination in the suburbs) left many African Americans unable to de-concentrate with the rest of the city (Sugrue 1996, 33-123). All of these issues famously boiled over in the 1967 riots.

In the 1970s, most large primary cities in the US were struggling with the effects of de-concentration (Glaeser and Ponzetto 2010). Detroit was no exception. Between 1970 and 1980, the number of high poverty tracts in Detroit doubled ¹, as did the number of Detroiters living in such areas (Sugrue 1996, 270). While this is certainly an indicator of significant decline, the increase ranked only sixth among American cities. New York, Chicago, Newark, Philadelphia, and Cleveland all experienced larger increases in severely impoverished tracts, and all but Cleveland had a larger increase in the population living below the poverty line. It was not until the 1980s that Detroit's decline became exceptional. As discussed in Chapter 2, many US primary cities began to reverse their decline in the 1980s (i.e., the beginning of the stage-three urban resurgence). Detroit, however, experienced the opposite. Between 1980 and 1990, the city developed more high poverty tracts, and filled them with more residents, than any other in the nation. In contrast, all of the cities that outranked Detroit in the 1970s saw their poverty statistics improve, in some cases significantly (Kasarda 1993, 294-5). Worse yet, whereas many of

¹ Defined as neighborhoods where more than 40% of the population lives below the poverty line.

these same cities saw an influx of population (and therefore taxpayers), Detroit's population kept falling, and did so at an increasing rate (Martelle 2012, 233).

As was noted in Glaeser's analysis of Detroit, the city's leaders made serious efforts to reverse its decline. In the mid-1970s, a major downtown office complex—the Renaissance Center—was built. In 1981, with significant inducements from the city, General Motors built a large new factory in the city (the "Poletown Plant"). In 1987, an elevated monorail system was installed in the downtown business district (Glaeser 2012, *Kindle Locations 1122-1133*). In 1996, the city got approval from the state to build three casino resorts, and did so in the late 1990s and early 2000s. Finally, in 2000 and 2002, new downtown stadiums were built for the Lions (football) and Tigers (baseball) (Che 2008).² Thus, even though the city was under significant stress, its leaders found ways to make and/or attract major investments. Furthermore, most of these projects occurred during the stage-three time period, when national economic conditions were conducive to urban revitalization. Despite all of this, the city continued to decline, culminating in its 2013 bankruptcy filing.

Though Detroit's primary city suffered immensely after 1980, its suburbs only narrowly avoided the same fate. Despite significant population growth throughout the postwar era, the foundation of Detroit's suburban economy—the de-concentrated auto industry—slowly deteriorated from the mid-1970s onward (Martelle 2012, 233). The automakers' decline was touched off by the OPEC oil embargo. In response to US involvement in the Yom Kippur War, the alliance of oil exporting countries known as

² A new downtown arena for the Red Wings (hockey) was approved by the city council in the midst of the bankruptcy crisis, prompting much criticism.

OPEC cut off sales to the United States in the fall of 1973. The resulting increase in oil prices (combined with the ongoing stagflation crisis) led to a major downturn in the worldwide auto market. The US automakers were hit especially hard. In 1973, American auto companies sold over 12 million cars and trucks (a record at the time). Just two years later that number dropped to less than 9 million, reflecting a 29% drop in sales (Martelle 2012, 205; Klier 2009, 9). Even though sales increased again in the late 1970s, the oil shock seemed to catalyze the movement of American consumers to more fuel-efficient, foreign cars—especially from Japan. As a result, the aftermath of the embargo left the Big Three struggling for market share in their primary territory, eventually precipitating the VER agreement with Japan in 1981 (Klier 2009, 7). Even with this protection, America's automakers found it difficult to compete against more fuel-efficient foreign competition. To cope, they decided to go in the other direction, investing in new types of light trucks (minivans, SUVs, etc.). In large part because gas prices came down in the 1980s and early 1990s, the strategy paid off, stabilizing the Big Three's US market share by the mid 1990s (Klier 2009, 12). As the 2000s approached, however, a new threat emerged: rising legacy costs. As its workforce aged and retired, the Big Three's cost-per-employee took up more and more revenue. In 2007, a new contract with the UAW sought to address these issues by establishing independent trusts to manage retiree healthcare benefits and creating a two-tier wage system for new hires. Unfortunately, the changes proved insufficient in the face of the 2007-09 recession. When car sales plummeted along with the rest of the economy, two of the Big Three did not have enough cash on hand to pay their expenses. In 2009, Chrysler and GM both filed for bankruptcy (Klier 2009, 13-4).

With special financing from the US government, both companies were able to quickly restructure, returning to profitability in 2010. By the end of 2014, the Big Three were again turning healthy profits and regaining market share (Goolsbee and Krueger 2015). While a stable population and better infrastructure would have left the suburbs in a better position than the city had the industry collapsed, the post-1973 deterioration of the Big Three makes it clear that Detroit's primary city was not alone in its failure to foster a strong economy.

Institutions, Poor Investments, and Detroit

Combining this history and the results from Chapter 4, it is now possible to analyze the role of local institutions in the decline of metropolitan Detroit. The results from Chapter 4 can be summarized as follows:

- 1) Primary cities have a strong, consistently positive effect on an MSA's overall economic performance.
- 2) Special districts have a consistently positive effect on an MSA's overall economic performance, but it is less than the primary city's.
- 3) Territorial competition has a strong, consistently positive effect on an MSA's international performance.

To examine how these results fit with Detroit's experience, I have created time-series plots showing the metropolitan area's relative strength in each institution. Because these variables are examined in isolation from the economic variables, I was able to exploit the longer timeframe of the local government data. The plots therefore run from 1958 through 2005. Each contains both a series reflecting the raw value of the institutional

variable in Detroit, as well as a series reflecting the mean value of the variable for a comparison set of MSAs. The comparison set was constructed by dropping all MSAs with a median population below 1 million over the course of the 1958-2005 time period (reducing the number of MSAs to 38). The mean value series therefore reflects MSA economies of roughly similar size. The three plots are displayed and analyzed briefly below.

Figure 5.1: Detroit Primary City Revenue vs. MSA Mean for Population \geq 1 Million, 1958-2005

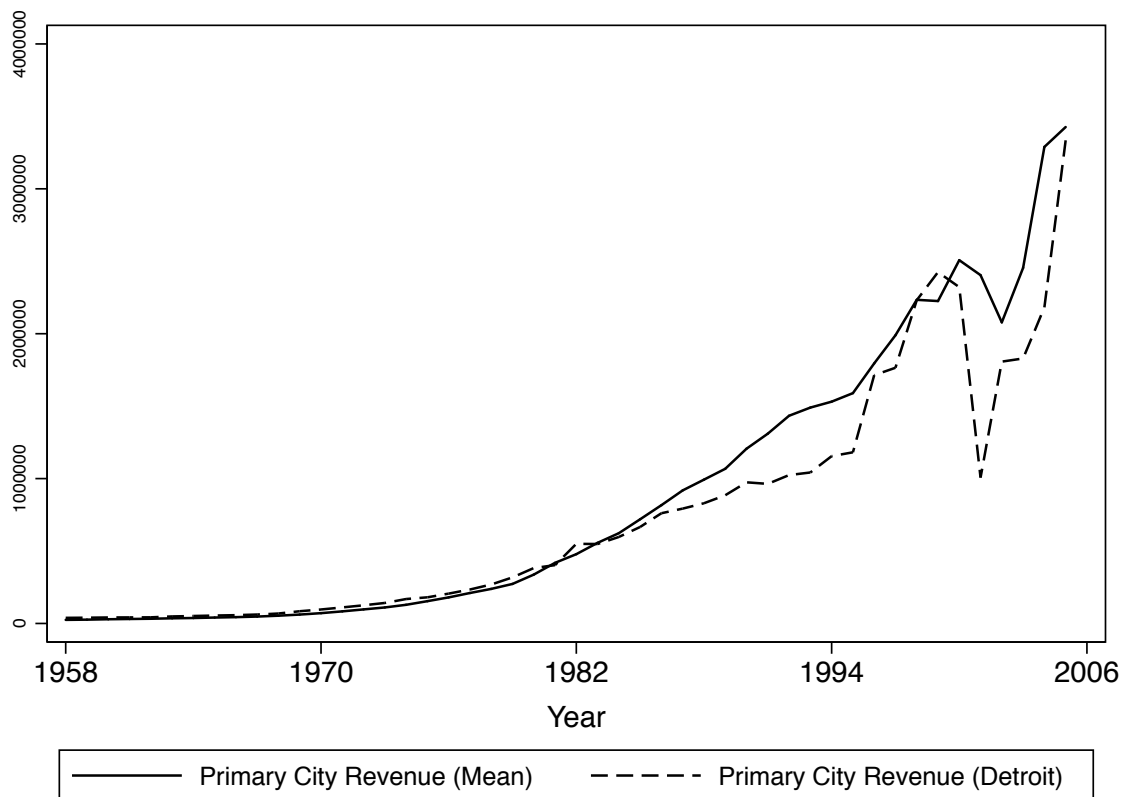


Figure 5.1 above displays the series for primary city revenue. For 1958 until approximately 1983, Detroit's primary city revenue hewed to the mean value for MSAs of its size. After that, the city fell significantly off the pace until the late 1990s, when a noticeable surge pushed it back into line. In the 2000s, however, it fell well below the

mean again and stayed there. Overall, the city clearly lagged behind others of its size from the early 1980s onward, confirming the timing of decline indicated in the historical narrative.

Figure 5.2: Detroit Special District Count vs. MSA Mean for Population \geq 1 Million, 1958-2005

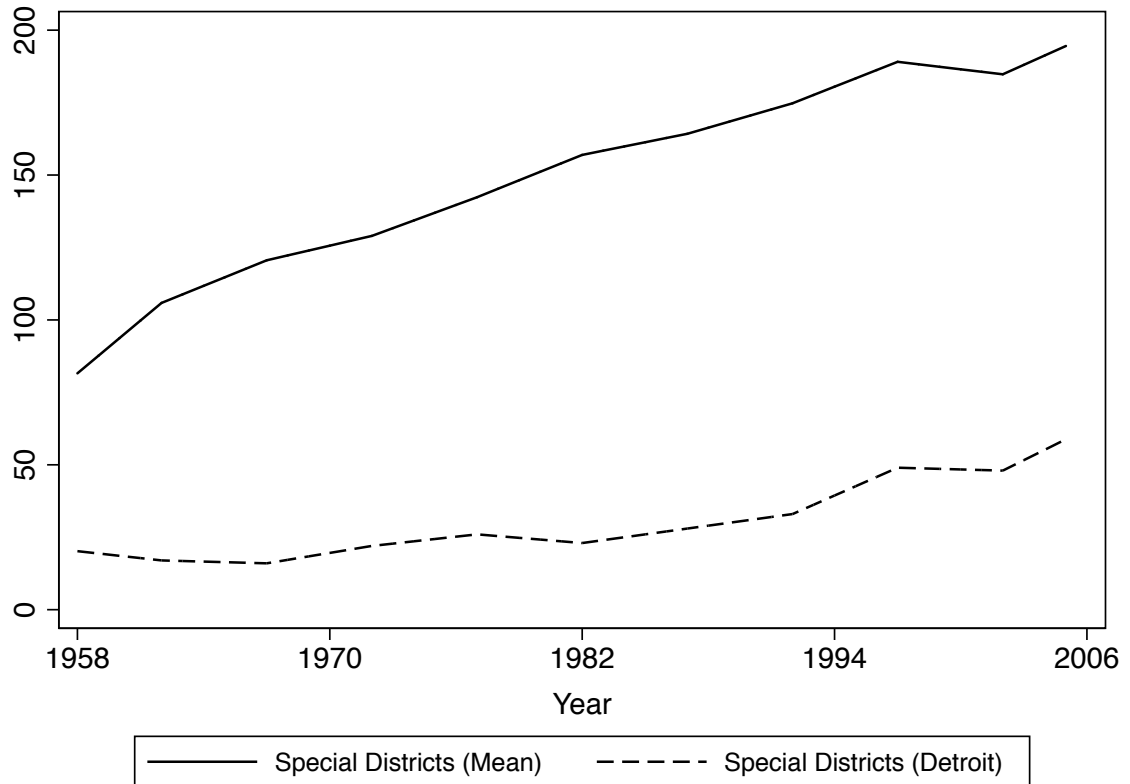


Figure 5.2 above contains the series for special districts. In contrast to the revenue series, Detroit significantly lagged its peer MSAs in special district development throughout the time period, with the gap consistently widening over time. This again fits with the historical narrative, where territorial competition appeared to be Detroit's primary means of de-concentration.

Figure 5.3: Detroit General-Purpose Govs. Count vs. MSA Mean for Population ≥ 1 Million, 1958-2005

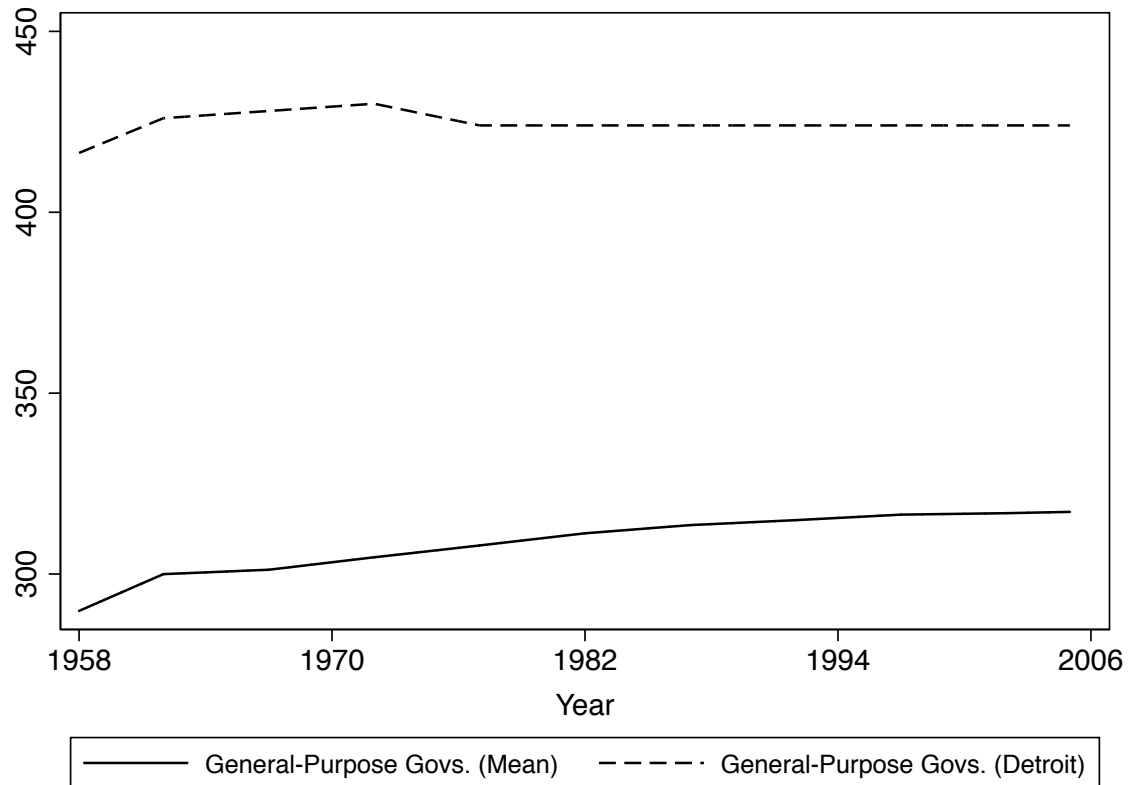


Figure 5.3 above shows the series for general-purpose governments. As explained in Chapter 4, this variable measures the number of territorially distinct governments in an MSA, reflecting its degree of territorial competition. Reversing the pattern for special districts, metropolitan Detroit clearly developed and maintained a well-above average number of general-purpose governments throughout the time period. The pattern is further confirmation that territorial competition played a major role in the area, corroborating the evidence from both the special district series and the stage-based historical sketch.

Considering this evidence in light of the above regression results, postwar metro Detroit appears to have been hindered by an institutional setup featuring an under-funded primary city, excessive territorial competition, and insufficient geographic flexibility. Combining all three sources of evidence (i.e., the historical narrative, the regression results, and the above plots), one can see how these problems emerged and built on one another over time. The special district issue began just after the war, when the city's de-concentrating firms opted for the greater fiscal independence of territorially distinct governments over the flexibility of districts. With import competition low, these early internal movers (i.e., those who stayed in the Detroit area) could have instead chosen to relocate closer to the city. Given the ability to combine existing city services with diffusely funded, tailored add-ons, special districts would likely have proven attractive in such a scenario. If this had happened, districts would have become a more established avenue for new development, increasing the area's institutional flexibility going forward. Critically, such flexibility would have made it easier for businesses and developers to remain part of the city even as parts of it fell into serious decline and government corruption grew (Chicago's high use of districts—which is documented in Berry 2009—may be a model for this). Even though the area lacked the consistent boost provided by special districts, the decision to develop territorial competition was well suited to an auto industry facing increasing foreign competition. While foreign automakers gained significant market share in the 1970s and 1980s, the losses would have been worse without the strong development of this institution. Nonetheless, when other primary cities started to come back, the persistently strong import competition faced by Detroit's

automakers probably hindered a re-evaluation of the virtues of downtown. By the early 1980s, the impact of metro Detroit's intensely independent de-concentration started to catch up with its primary city. As its revenue began to fall off the pace of its peers, the metro economy would increasingly lose the largest of the institutional performance boosts. When the 2007-09 recession hit, this increasingly rickety institutional structure gave way, producing three of the most storied bankruptcies in American history.

The importance of this institutional story comes through when its lessons are applied to the neoclassical explanation for Detroit's decline. As detailed by Glaeser, the neoclassical approach is focused on the investments made to sustain competition, connection (or density), and human capital in an MSA's primary city (with the assumption that the wider metropolitan economy benefits from the results). Applied to Detroit, Glaeser argues that the metro area's key failures occurred as a result of investing in downtown buildings and infrastructure projects instead of people (a problem he calls "The Edifice Complex"). As even he admits, however, formulating alternatives is difficult.

Could an alternative public policy have saved Detroit? By the time Young was elected [in 1974], Detroit was far gone, and I suspect that even the best policies could only have eased the city's suffering. But it is possible to imagine a different path, if it was taken during earlier decades, when the city was far richer. Perhaps if the city had used its wealth and political muscle, starting in the 1920s, to invest in education at all levels, it could have developed the human capital that has been the source of survival for postindustrial cities (Kindle Locations 1142-1145).

Investing in education certainly has merit, but Glaeser does not discuss how this might have been done to best serve Detroit's economy. He also does not bother to examine the investments that were made. For example, Detroit was an early adopter of broad-based

public education (Goldin and Katz 2008, Kindle Location 2222). Had the city fallen off the pace by 1920? Furthermore, the timing of the policy implies that the city should have made investments in 1920 in order to take advantage of economic conditions 60 years in the future. This is highly impractical. Taking the local institutional structure and the history of its development into account does much to clarify the counterfactual side of the investments story. First, it calls attention to a critical feature of Detroit's metropolitan economy: the early and intense movement of its economic base to the suburbs. Any candidate turnaround investments must account for the fact that beneficiaries faced a strong incentive to re-locate. Whether that investment resulted in a better-educated citizenry or higher paying jobs (via casinos, for example), the institutional structure would channel the main beneficiaries out of the primary city. Second, as a byproduct of this issue, the institutional perspective also makes it clear that Detroit's primary city faced an uphill battle as long as its suburbs were duplicating its functions. That is, as long as the metro area's main industries located their human capital-intensive operations in the suburbs, the city would struggle to re-develop its neoclassical role. Nascent successes would face a strong temptation to re-locate near the suburban sources of competition, density, and human capital. These considerations significantly narrowed the number of viable revitalization options. In particular, they likely left Detroit's primary city with only one workable path: convince the Big Three to re-locate their high-skill, non-plant based operations downtown. Doing so would have required major tax incentives (perhaps implemented with a special district), but the follow-on development would likely have made this sacrifice worthwhile. Importantly, due to the urban productivity externality,

such a move would have been mutually beneficial, boosting both the city's revenue and the Big Three's competitiveness. Given the land-intensity of auto production, it is easy to imagine these benefits extending to Detroit's suburbs as well.

Overall, combining a stage-based history of metro Detroit with an analysis of its institutional structure makes it possible to construct a much more precise version of the neoclassical explanation for its decline. Whereas Glaeser's version of this explanation attributed the region's failures to inadequate primary city investments in broad areas like education and safety, the institution-augmented version narrows the critical failure down to an inability to host the human capital-intensive components of the auto industry. This drastic increase in precision and practicality constitutes a significant explanatory improvement. Thus, the analysis of Detroit serves as a proof of concept: incorporating knowledge of local political institutions (both general and case-specific) significantly improves the explanatory power of the neoclassical theory of urban decline.

II. Directions for Future Research

As was demonstrated in the Detroit case study, the results from Chapter 4 have important explanatory value. Nevertheless, the failure to find support for most of the hypotheses developed in Chapters 3 indicates that there is significant room for improvement. In this section, I describe four ways in which future researchers could improve upon my efforts.

1. Expand the Metropolitan Data

The first way in which this line of research could be improved is by expanding the data. As was noted in Chapter 4, state-level data is not ideal for studying phenomena at

the metropolitan level. It was included in this study to expand the timeframe, which was limited by yet-to-be digitized county employment data. According to the US Census Bureau (2015j), however, this data has been recorded consistently since 1964 and is stored at the National Archives in Washington, DC. Furthermore, it is possible with current scanning technology to read-in the paper versions of these tables. While cleaning the data would be tremendously time-consuming, researchers interested in the link between MSA political institutions and their economies would benefit tremendously from the resulting dataset.

Another option for expanding the data is to focus more closely on the development of MSAs. As was noted in the introduction, an MSA is defined by examining commuting ties among counties. The US Census has commuting data at the sub-county level from 1990 to the present (US Census Bureau 2015c). While this is a much more limited timeframe, the level of detail would make it possible to more closely examine the effects of de-concentration. Specifically, it would introduce an explicitly spatial measure of territorial competition that allows for a precise examination of how MSA economies are impacted as new territories are incorporated into the region.

Finally, although the time coverage is also more limited, non-US data is available. The EU has metropolitan area data going back to 1995, and the OECD has data back to 2000. Importantly, both sources include GDP, sectoral, and local governments data (European Commission 2015; OECD 2015). These sources could be used to augment the more robust US data, further testing the generalizability of the findings.

2. More Sophisticated Econometric Tests

The estimation strategy used in Chapter 4 accounted for heteroskedasticity, autocorrelation, and cross-sectional dependence *in the errors* from a fixed-effects OLS model. This approach essentially treats temporal changes and spatial interdependence as nuisance parameters. That is, the effects of variable persistence and MSA interdependencies (e.g., changes in Detroit's economy affect Ann Arbor's, etc.) are omitted from the coefficient estimates, potentially biasing the results. One or both of these issues may be at the heart of the high number of unsupported hypotheses in Chapter 4. Because of this, exploring the various modeling techniques that directly incorporate these features of the data may significantly improve similar analyses in the future.

One potentially fruitful option would be to deploy panel vector autoregressions (Love and Zicchino 2006). This approach incorporates the temporal features of the data by using the lagged values of all variables to explain variation (i.e., each variable is explained by both the lags of itself and those of the other model variables). The impulse response functions from such models allow for an analysis of both the strength and persistence of variable relationships. Importantly, under this approach the data could still be split according to stage, and the error ranges from the resulting impulse response functions compared to test the statistical significance of any stage-induced changes. The major issue with VARS, however, is the generally large error bands they produce (Box-Steffensmeier et. al. 2014, 118).

Another useful corrective would be to directly incorporate spatial dynamics. This is often done via a spatial autoregressive model. With these models, a spatial weighting

matrix reflecting the impact of nearby observational units is incorporated into the estimation procedure (Franzese and Hays 2007). For a dataset based on US MSAs, this matrix could be constructed from the data on commuting ties, which goes back to 1960 at the county level. The rest of the estimation strategy in this case would look similar to the one used in Chapter 4, but with a different error adjustment.

Finally, while it is still in the early stages, there is some work attempting to incorporate spatial weights into a VAR setup (Mutl 2009). Depending upon its development, this may also be fruitful for future researchers to explore.

3. Expand the Case Studies

The Detroit case study was illuminating, but future researchers could significantly improve its usefulness by developing other cases for comparison. In the context of this study, the frequent comparisons between Chicago and Detroit strongly recommend a similar analysis of Chicago, regardless of the potential selection bias issues. Beyond this, however, studying a more rigorously selected set of cases would be useful. A potentially fruitful approach to this would be to pick cases from two segments of the dataset: one containing only those MSAs with an average population above the 75th percentile, and one containing only those with average populations below the 25th percentile. By limiting the possibilities to these subsets, the comparison is among MSAs of similar economic size, the number of potential cases is pared down, and the robustness of the findings to what are likely quite different economic conditions is tested. Within these segments, new regression analyses could be run, and regression-line scatterplots produced. From here, specific cases could be chosen based on the method that looks most promising given their

distribution (e.g., most-similar, most-different, deviant, influential, etc.) (Gerring 2007, 89-90). Such an undertaking would (hopefully) not only buttress the importance of the institutional relationships discovered in the large-N analysis, but also provide insight into the patterns of historical development that lead to particular variations in local institutional structure.

4. Further Examine Primary City Government

As was apparent throughout this study, the primary city has an outsized impact on metropolitan economies. Both my results and those of many other economic researchers support this (see the section on primary city government in Chapter 2). As noted, the consistency of this finding is especially impressive in the context of twentieth century suburbanization. Despite all of this, there is a dearth of political science research on how a primary city's government impacts its performance in this role. The closest approximation is Richard Feiock's work on how the distinction between managerial and mayoral systems impacts the choice of development policy (again, see Chapter 2). Using his data on Florida cities as a guide, it would be useful to develop a larger dataset that includes city government types, development policies, and economic outcomes (in both the cities themselves and the wider metropolitan areas). Again, given its exceptional role, better understanding how primary city government affects the local economy would significantly improve understandings of metropolitan success and decline.

Conclusion

In this chapter, I applied the results from Chapter 4 to the decline of metropolitan Detroit and discussed four directions for future research. To analyze Detroit, I first

discussed how knowledge of local institutions is vital to identifying the critical decisions that precipitate decline—the essence of the "poor investments at critical junctures" explanation proffered by neoclassical urban economists. Following this, I laid out a brief economic history of the region, structured around the development stages discussed in Chapter 3. I then coupled this narrative with the data from the Chapter 4 to analyze how Detroit's institutional structure evolved between 1958 and 2005. Finally, I used this information to explain how the development of this structure severely limited Detroit's revitalization options after stage-two de-concentration. In particular, I argued that the only viable way to avoid decline—for the city and the metro area—was to lure the human capital-intensive operations of the Big Three to a downtown district. Absent this, all other efforts would suffer from the pull of a suburban economy that duplicated (without much success) the economic role of the city.

Following the discussion of Detroit, I offered four ways in which future researchers could improve upon my efforts. The first was to expand the metropolitan data. I suggested this could be done by inputting yet-to-be digitized US data, incorporating data on commuting ties, and/or using metropolitan data from other countries (via Eurostat and the OECD). The second suggestion I made was to use more sophisticated econometric tests. In particular, I advocated using models that make better use of the temporal and spatial structure of the data. My third proposal was to expand the number of MSA case studies. For this task, I recommended splitting the dataset according to population groups and using regression analysis to identify relevant cases. Finally, my fourth suggestion was to further examine the economic impact of primary city

governments. Specifically, I proposed adding economic outcome variables to Richard Feiock's work on the relationship between city government type (e.g., mayoral or managerial) and urban development policies. Taking up these suggestions might not redress the failed hypotheses from this study, but following through on any one of them has the potential to add significantly to our understanding of the political economic characteristics that differentiate economically successful metropolitan areas from those that fall into decline.

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