

EXPLORING THE HORIZONTAL AND VERTICAL DIMENSIONS OF THE GOVERNING OF METROPOLITAN REGIONS

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A metropolitan region does not have formal institutional structures such as nations, states, and cities, but it is a system that can be conceptualized and studied as a whole. The study of metropolitan areas too often ignores the dynamic relationships at the intersection of state and local governments. This study suggests a two-dimensional typology of governance in metropolitan regions. The authors found that governance affects the long-term competitiveness of the metropolitan economy. Governance does not determine economic outcomes but reduces the ability to adapt. The worst combination for metropolitan competitiveness is decentralization within regions where there is a centralized state government.

Keywords: metropolitan; governance; centralization; decentralization; competitiveness; region

THE METROPOLITAN UNIT OF ANALYSIS

This article is influenced by the notion that processes and components are linked so that the whole is greater than the sum of the parts. Systems theory conceptualizes the world as a “grouping of component parts that individually establish relationships with each other and that interact with their environment both as individuals and as a collective” (Cavaleri and Obloj 1993, 13). A

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metropolitan region can be conceptualized and studied as a collective, even though it lacks the political and institutional structure of formal political jurisdictions such as nations, states, and cities.

The road to the metropolitan region starts with local governments, as they are key building blocks. The American system of governing is a territorially based distribution of power and responsibility steeped in both law and popular culture. More than 40 years ago, Arthur Maas (1959) defined the structure of local government in the United States as an “areal” division of power wherein the territorially bounded local governments were, by culture and practice, an integral part of a system that divided power between the federal, state, and local governments. In 1868, Justice Dillon (*City of Clinton v. The Cedar Rapids and Missouri Railroad*, 24 Iowa 455, 1868) articulated America’s legal doctrine on local governments, calling them “mere tenants at will of their respective state legislatures” that could be “eliminated by the legislature with a stroke of the pen.” Dillon also articulated America’s popular doctrine on local governments by calling the elimination of a local government “so great a folly, and so great a wrong.” Such is the paradox of local government in United States—so weak, yet so strong.

To the degree there is an emergence of metropolitan governance, it has occurred within the context of an older system of intergovernmental relations and represents an adaptation of that older system. One must begin with that traditional system of relationships, presented in the model below. In this simplification, there are four principal actors: the citizen, local governments, state governments, and the federal government. When we use the term *citizen*, we mean it in the broadest sense to include individual, local businesses, other users of metropolitan services, and those who provide the financial resources to governments. The term *local governments* is used to define localized governmental entities such as towns, cities, counties, special districts, and school districts.

As depicted in Figure 1, there is a fundamental structure to the intergovernmental system. That structure is made up of administrative networks, financial flows, and authority relationships such as state and federal mandates. Although this figure appears orderly, it is better viewed as loosely structured relationships among the actors. Nonetheless, citizens have a set of expectations about what the social world around them should look like. They provide resources to various levels of governments in anticipation that those governments will be able to match their desired social world. In most instances, citizens are not concerned with which level of government provides their services as long as they are provided. This is particularly true for services generally considered as local. These governments, then, provide ser-

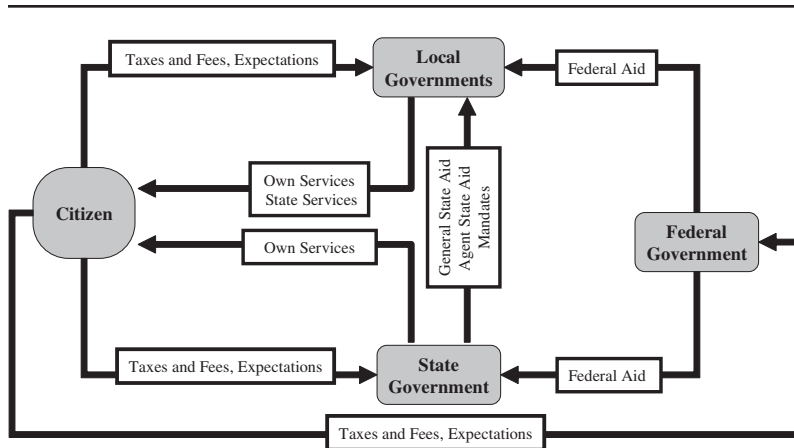


Figure 1: Model of Intergovernmental Relations

VICES directly to the citizens or work through other governments and non-governmental organizations in the provision of services.

Although this representation can be universally applied to the United States, there are 50 different structures of relationships—1 for each state. Furthermore, these state systems have evolved over the past 300 years and have become deeply institutionalized with rigid rules and expectations about how each government performs its responsibilities as a component in the system. The system reflects overlapping citizenship, but the governments themselves do not. Each citizen is a member of each level of government—local, state, and federal.

The metropolitan region has emerged as the new player in this rich milieu of relationships. The concept of the metropolitan region is attached to those existing patterns of relationships and thus defined them as well. As shown in Figure 2, the region is an overlay on this system. It is an amorphous entity with no legal standing or political constituency but is fast becoming an important economic and governing unit. One understands how the old system works but is just beginning to understand the new system. The dashed lines and oddly shaped depiction of the metropolitan region reflect this lack of clarity in our understanding.

For instance, the dashed line from the citizen to the metropolitan region is hardly visible in the current system. Few regions have metropolitan-level officials and institutions that are even vaguely known by citizens. The line

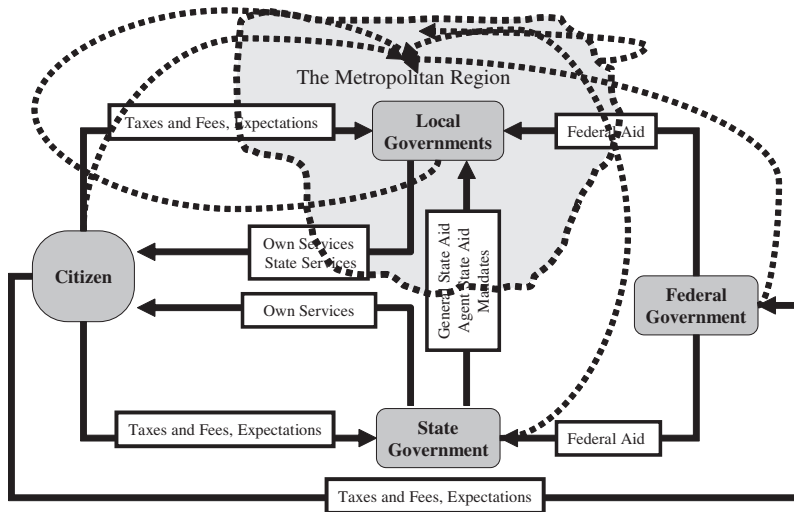


Figure 2: Model of Intergovernmental Relations in Metropolitan Regions

from state government to the metropolitan region usually goes through institutions of local governments. The line from the federal government to the metropolitan region varies from federal agency to federal agency. One agency of the federal government, the Office of Management and Budget, defines metropolitan regions but then warns against using those definitions for any application but statistical applications. Conversely, the U.S. Department of Transportation has forced the flow of federal highway dollars through a metropolitan regional organization, generally using the definitions supplied by the Office of Management and Budget.

The emergence of the metropolitan concept coincides with a move from a conceptual framework centered on government to one centered on governance. Governance is the act of public decision making and is no longer the exclusive domain of a single government. All too often, the study of metropolitan areas fails to capture the dynamic relationships that exist between state and local policies. The metropolitan region is not a government but governments at all levels, nonprofit organizations, and the private sector working together in new partnerships and relationships that blur sectoral, jurisdictional, and geographic lines. The region is at the intersection between the state and local governments. Understanding regional governance requires a

sense of the authority relationships between the state and governing institutions at the local level. There is an emerging set of research activities analyzing this area (Advisory Commission on Intergovernmental Relations 1987, 1992b; Hamilton 1999; Miller 2002; Parks and Oakerson 1993; Oakerson 1999; Cisneros 1995; Dodge 1996; Katz and Bernstein 1998; Rusk 1993; Peirce 1993).

Relationships vary between and even within states. On one hand, local governments are creatures of the state. Conversely, state governments are often populated by former representatives of those local governments and heavily influenced by official and unofficial agents of local interests on whom they rely for political support. If the metropolitan region represents innovation, that innovation will be structured vertically around the existing state-local relationship and horizontally structured around the existing relationships between the local governments within the metropolitan area. Such a representation suggests a typology of metropolitan regions. Vertically, states can elect to create empowered local governments (an act of decentralization) or they can retain control and power (an act of centralization). Conversely, horizontal relations can be concentrated in the metropolitan area or diffused broadly throughout the metropolitan area. Figure 3 depicts a typology of authority relationships considering the extent of state devolution of authority to local governments and the extent of local government fragmentation in metropolitan areas.

This line of reasoning suggests four types of metropolitan structures. The first would be a region where the state has retained a greater share of power and there is a concentration of power within the local governments. Such a region would have a few dominant local governments, but they would lack power. A second regional structure would be where the state has retained considerable power and there are many local governments in the region. In this structure, many local governments would be sharing a relatively limited amount of power. A third regional structure would be one in which the state has devolved power to local governments in the region and there are many local governments that take advantage of that power. A fourth type of region would be one where the state has devolved power to the local governments and there are a few dominant local governments in that region.

In this article, after reviewing the literature on the nature of regional governing and the states' centralized or decentralized relationship with their respective local governments, we employ a variety of quantitative measures to test whether our theoretical propositions about the impact of horizontal and vertical structures of regions on regional economic growth are valid. To test our propositions, we look at that part of regional economic performance that can be attributed to local and state decision-making processes. We offer

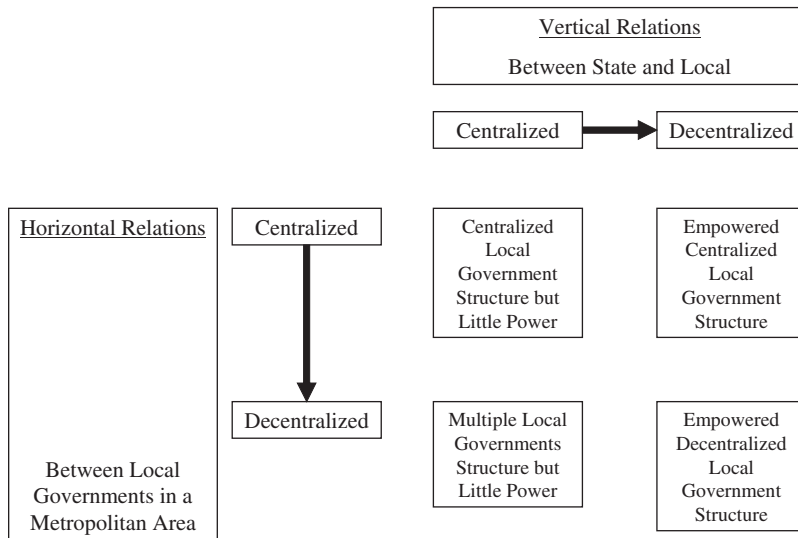


Figure 3: Typology of Governance Structure of Metropolitan Regions

the results as an exploratory effort to add to the knowledge of metropolitan regions and stimulate interest in further research in this area.

CENTRALIZED AND DECENTRALIZED HORIZONTAL GOVERNING SYSTEMS

Rapid urbanization and annexation of growth outside traditional city boundaries in the nineteenth century brought the structure of local government in a metropolitan region to the forefront (Fishman 1987; Jackson 1985; Teaford 1979). Beginning in the late nineteenth century and continuing through the twentieth century, relaxed incorporation laws and political resistance to forced annexation have contributed to the current polycentric governing system. As a result, each metropolitan area is unique in terms of numbers and types of governments, but metropolitan areas generally have a decentralized, polycentric system of governing.

Since the beginning of the twentieth century, efforts have been made to consolidate governments or establish some type of overarching metropolitan governing system. Brenner (2002) characterizes the early regionalist move-

ment until the Great Depression as a civic boosterism and a “city beautiful” movement led by business and good government groups to plan and coordinate housing, transportation, and parks throughout the metropolitan area. To accomplish these goals, larger, more centralized, and more efficient government administrative frameworks based upon the principles of scientific management were thought to be required.

Regionalists during this period based their argument on efficiency gains that they expected from an area-wide approach to metropolitan problems. This was manifested in recommendations to adopt business organization models and to reduce politics from government to the greatest possible degree. William Anderson, one of the early regional reformers, summarized the reformers’ agenda for regional reform in 1925 very simply as the concept that each major urban area should be organized by only one unit of local government (Bish and Ostrom 1973, 7-8). Supporters of regionalism asserted that regional government would reduce government duplication and overlap, which would improve efficiency and reduce costs (Wood 1961, 51-64).

The second major period in advocacy for a more centralized local governing system was the post–World War II regionalism movement. This movement took place during a time of rapid suburbanization of metropolitan America. In addition to the efficiency argument, regionalists asserted that the mismatch of needs and resources faced by central cities whose political boundaries do not coincide with economic boundaries would be solved by a more centralized government system (Wood 1961, 51-64). John Bollens and Henry Schmandt (1965, 177-80) claimed that excessive numbers of local governments resulted in a lack of public control and accountability, the inability to arrive at metropolitan consensus on area-wide matters, conflicting programs by the fragmented governments, and the inability to effectively handle regional problems.

During this period, business groups continued to advocate area-wide reform. For example, the Committee for Economic Development (CED) (1966, 11-12) argued that even the largest cities find major problems insoluble because of the limits on geographic areas, their taxable resources, or their legal powers. Moreover, small tax bases severely limit the ability of many jurisdictions to provide a full range of services. The CED felt that confusion from the many-layered system, the profusion of elective offices without policy significance, and the increasing mobility of the population made solving regional problems difficult, if not impossible, and resulted in ineffective citizen participation and popular control of government. Another business-funded group, the New York Regional Plan Association, in its regional plan for the New York metropolitan area, asserted that the inefficiency of the fragmented governance system of the New York region is “demonstrated by the

dramatic rise in government revenues and expenditures. . . . These increases, of 21% in revenues and 42% in expenditures over just 16 years, came during a period in which the region's population only grew by about 2%" (Yaro and Hiss 1996, 204).

The most recent manifestation of regionalism commenced in the 1990s. This wave of political metropolitan reform has been named "the new regionalism." The major rationale for the new regionalism is economic development and maintaining economic competitiveness in an increasingly globalizing economy. Studies have focused on the urban region as the unit of analysis for analyzing and studying economic growth (Barnes and Ledebur 1998; Ledebur and Barnes 1993; Peirce 1993; Rusk 1993; Savitch et al. 1993). This research purports to show that individual municipalities within urban regions are economically interdependent. According to this research, economic flows are not constrained by political borders, and private companies are more concerned about regional comparative advantages and amenities in making location decisions than local government policies.¹ Other research using the region as a unit of analysis makes the case that with governance issues becoming more regional in scope, local governments must work together to solve governance problems (Advisory Commission on Intergovernmental Relations 1987, 1992b; Parks and Oakerson, 1993; Oakerson, 1999). Observers have started calling for a new metropolitan agenda and a regional governance focus (Cisneros 1995; Dodge 1996; Katz and Bernstein 1998).

The new regionalism movement does not advocate government consolidation or focus on structure. It advocates cooperation, collaboration and networking, and partnerships among governments and with the private sector to address regional governance problems. Brenner (2002) argues that the new regionalism movement is not uniform but is heterogeneous and place specific. There is no set of overarching principles that can be institutionally and politically applied to all metropolitan areas that are engaged in new regionalism projects. Instead, new regionalism efforts are permeated by significant internal conflicts and contradictions.

There is substantial controversy regarding the impact of government organization on metropolitan areas. One question that is significant in this debate over centralized and decentralized local governing systems is, "Does local government organization make a difference on the governing of the region?" Miller (2002) characterized two schools of thought on this subject: region as an organic whole (regionalists) and region as polycentricity (localists). The regionalists' rationale has been described above. The localists' arguments are reviewed below.

In contrast to the regionalists, supporters of the region as polycentricity contend that a decentralized, multinuclear system of small, autonomous governments is preferable as it promotes competition and may actually reduce costs while providing citizen choices as to the kinds and level of services they desire. According to supporters of this school, as local governments compete with each other for development, the negative effects of big government, such as empire building, remoteness, unresponsiveness, and inefficiency, are minimized.

Supporters of the polycentric system argue that governments are like firms in the marketplace competing for development. The competition and discipline of the market keep costs down as local governments compete for residents and commerce. More local governments make the market more competitive and thus more efficient. Supporters of this school contend that large bureaucratic governments restrain competition and hence the efficient allocation of goods and services. They suggest that the marketplace is the most efficient allocation system, supplying only that which is demanded by consumers. Thus, the workings of the market keep government costs down whereas bureaucratic-dominated systems result in oversupply and the unnecessary production of goods and services. Moreover, the polycentric metropolitan area offers a differentiated market through the numerous municipal governments, allowing people to choose the level of services and taxes they desire. The politically diffused metropolitan area is desirable, according to advocates of this model, because it better meets the diverse needs of citizens (DiLorenzo 1983; Eberts and Gronberg 1990; Ostrom and Ostrom 1971; Wagner and Weber 1975).

There is a substantial body of theoretical and empirical literature supporting the polycentric system of local government (Buchanan 1971; Kenyon and Kincaid 1991; Ostrom, Tiebout, and Warren 1961; Oakerson 1999; Parks and Oakerson 1993; Wagner and Weber 1975; Zax 1988). Localists argue that empirical research is inconclusive as to whether metropolitan areas are in fact better served by one government than by more decentralized systems. Moreover, they point to an increasing body of literature that refutes the notion that highly centralized and bureaucratic administration is more efficient than a proliferation of autonomous, small governments.

For example, the Advisory Commission on Intergovernmental Relations (ACIR) conducted a study of Allegheny County, the most fragmented county in the nation in the ratio of residents to governments. The ACIR study concluded that there was no evidence of a negative relationship between per capita service costs and jurisdictional population. For example, they found that police costs per capita were not out of line with other metropolitan areas. Total local expenditures per capita for police services ranked the county 18th

out of 21 American counties with populations more than 1 million. The county also ranked 18th out of the 21 counties in reported serious crimes. Even though smaller jurisdictions generally had higher per capita police expenditures, expenditures tended to be more related to resident income, intergovernmental aid, tax capability, and the ratio of employment to population. Also, most smaller jurisdictions were not experiencing substantial diseconomies because aspects of the police function that benefited from scale economies, such as police dispatch, were being produced in cooperation with other departments. They found a slight decline in per capita costs as population increased in street services. However, as with police expenditures, per capita income, intergovernmental aid, and tax capacity were more important indicators of costs of street services. The per capita costs ranked the county 10th of the 21 counties with more than 1 million population. The researchers concluded that because of the extensive functional consolidation, coordination, and cooperation between municipalities, the fragmented system does not engender substantial inefficiency (ACIR 1992b).

Studies with larger samples have mixed results but tend to support the localists' arguments. For example, Hawkins and Ihrke (1999) analyzed 30 empirical studies of the effect of fragmentation and concluded that 21 supported the competition hypothesis that fragmentation lowers the cost of public services or does not increase expenditures. Only 9 studies in their analysis concluded that fragmentation increases costs or has other damaging effects. For example, a study of 218 metropolitan areas found that a polycentric suburban municipal system constrains locally raised taxes (Eberts and Gronberg 1990). Oakerson (1999) concluded from a nationwide sample of metropolitan areas that police services benefit from decentralized government. He found that the greater the number of jurisdictions in a metropolitan area, the less they tend to spend for policing in the aggregate. DiLorenzo (1983) found mixed results in his empirical study of government expenditures in 65 of the largest counties. He concluded that his study generally showed that inter-jurisdictional competition tends to reduce the cost of providing local public services.

The debate between those favoring a polycentric system of local government and those favoring a regional, more centralized government system in metropolitan areas continues to rage, with both sides striving to demonstrate the superiority of their approach. The clash between the two schools of thought was never more evident than in a study of St. Louis. The ACIR (1993a) identified St. Louis as one of the most fragmented areas in the United States and commissioned case studies of the region. Interestingly, shortly after the ACIR issued its report on St. Louis extolling the effectiveness of the fragmented system of government in meeting regional governance needs

through a system of overlapping jurisdictions, two regional citizen study groups issued reports completely at odds with the ACIR findings. They listed confusion, discord, and lack of cooperation as major reasons for recommending a significant reorganization of the fragmented government system in the St. Louis area (Elliott 1989, 18).

We have broadly sketched the two schools of thought on the normative arguments for organizing governments in metropolitan areas. The complexities of metropolitan regionalism are much greater than outlined above. Indeed, Brenner (2002) makes a compelling argument that the new regionalism involves nothing less than a political rescaling of our governmental institutions at all levels as old patterns of territorial and scalar organizations change to keep abreast of regional and global economic and social changes.

In our analysis, we consider the role of the state in the regional scale because the state ultimately has legal authority over local governments and their policies can have major implications on local and regional governance. Although recognizing that federal policies have had a major impact in metropolitan areas, we have forgone a discussion of the federal role because it has no legal control over local governments. Our analysis deals with political structures chartered and ultimately controlled by the state.²

CENTRALIZED AND DECENTRALIZED VERTICAL GOVERNING SYSTEMS

One cannot study regional governing without consideration of the impact of the state on local governments, but state government impacts have been noticeably absent from the literature on regionalism. It stands to reason that state policies toward local governments have a major effect on how a metropolitan region is governed. The types of local governments, the amount of local control, and the ease or difficulty of incorporation and annexation are examples of state policies that determine the configuration of the local government system. During the first half of the twentieth century into the 1960s, state policies generally supported the development of the polycentric system of government. During this period, state policies toward urban areas were generally benign (with some regional variation), allowing governments in urban areas substantial freedom³ (Bollens and Schmandt 1975, 239; Salins 1993, 161). Beginning in the 1960s, states have become more involved with their local governments by restricting sprawl and new municipal incorporations through statewide land-use controls, growth-management laws, or tightened incorporation requirements (Berman 1990, 59-61; Harrigan 1993, 303; O'Keefe 1991; Wallis 1995; ACIR 1992a, 1993b).

The amount of discretionary authority vested with local governments in a particular state is one way to assess the centralized or decentralized nature of state-local relations. Zimmerman (1983) has operationalized discretionary authority based on four criteria. Those criteria are the degree to which a local government can raise revenues necessary to support the functions it has decided to undertake (finance), the ability of a local government to choose activities or functions it wishes to undertake (function), the ability of a local government to regulate and determine the makeup and responsibilities of its workforce (personnel), and the degree to which a local government can define its own organizational structure (structure).

When one applies this indexed measure of local discretionary authority to fiscal features of the intergovernmental system, a number of important observations emerge. Initially, it is clear that some states have retained considerable powers (centralized) whereas others have granted broader powers to local governments (decentralized). Furthermore, the states with more units of local government have a greater tendency to grant increased discretionary authority to those units. Apparently, having more local governments creates more complexity for state officials, and as a result, local governments are afforded a greater opportunity to exercise their own initiatives.

Population serves a similar function. More populous states also tend toward greater local discretion. This observation is consistent with the findings of Berman and Martin (1988). However, density works in the opposite direction. As density increases, the amount of discretionary authority tends to decrease. Apparently, density creates pressure on the state system to regulate the interplay of local government actors. Interestingly, as the variation in population density within a state increases, the resulting wide differences lead to local governments' having greater discretionary authority. In states where there are both highly urbanized areas and highly rural areas, the practical implications are two very different realities—the rural and the urban—such that greater discretionary authority would be necessary to respond to those different realities.

To quantify the impact of the state on regional governance, we use the Stephens index (Stephens 1977; Stephens and Wikstrom 2000). This index rises with the level of state centralization, classified as the extent of services delivered, financial responsibility for public services, and personnel adjusted for state and local differences in labor inputs versus inputs of cash and capital. According to this index, in 1957, the average state had an index of 47.1; it increased to 58 in 1995. In 1957, the most decentralized category had 13 states; in 1995, there were no states in this category. The next most decentralized category had 8 states in 1957; in 1995, only California remained. The most centralized category had 4 states in 1957 and 17 in 1995.

The Stephens index is a verification of the increasing role that states have taken in local affairs since the 1960s. Brenner (2002) terms this increasing state involvement as a rescaling of the federal system. He contends that as the federal government disengaged from domestic programs and reduced its support for local government programs in the 1980s and 1990s, states were required to assume a larger role.

The Stephens index provides a reasonable measure of vertical relations between state and local governments. We apply it as a measure in assessing the impact of structure on the quality of life in metropolitan areas. Questions such as, What impact does the increasing state centralization have on regional governance? can be considered with this measure. Intuitively, one would assume that greater state centralization would improve the prospects for, and the effectiveness of, acting regionally. One could also assume that increased state centralization would reduce the need for the myriad types of local government.

MEASURING THE HORIZONTAL STRUCTURE OF METROPOLITAN REGIONS

The preferred option for measuring regional governance or horizontal structure would be a measure that rigorously compares the quality of governance and the extent that it is regional versus local. Most efforts to measure regional governance have focused on the negative dimension of jurisdictional fragmentation, based as they are on easily observable counts of the number of units (Goodman 1980) or the number of units per capita (Hill 1974; Bollens 1986; Zeigler and Brun 1980; Hawkins 1971; Parks and Oakerson 1993; Post and Stein 2000). The idea that having more units of government, either in absolute or per capita terms, diffuses power in the region has merit. Creating a government establishes another actor with political power and rights of entry into the decision-making process. One significant problem is that simply counting units fails to account for the contribution of each unit of government. As such, having a significant number of governments that exist "on paper" can overinflate that statistic as a meaningful indicator.

Although the absolute and proportional measures of fragmentation remain popular, another approach used patterns of taxing and spending to measure fragmentation. Dolan (1990) calculated the standard deviation of per capita expenditures of all categories of government spending in a county. This measure incorporated both the physical distribution of units and the functional distribution of responsibilities that varied from region to region.

TABLE 1: Measures of the Horizontal Relations of Regional Governance

<i>Type</i>	<i>Authors</i>
Dummy (1-0)	Carr and Fieock (1999)
Absolute (count of units)	Hill (1974), Goodman (1980) (split general and special purpose units)
Proportional (pop/units)	Hawkins (1971), Hill (1974), Zeigler and Brun (1980), Schneider (1986), Oakerson (1987), Parks and Oakerson (1992), Post and Stein (2000)
Proportional, size restriction	Bollens (1986) (suburban only), Morgan and Mareschal (1999)
Fiscal (expenditure)	DiLorenzo (1983) (include tax), Dolan (1990), Lewis (1996) (land use only), Miller (2002)

Dolan's fiscal dispersion measure was resilient to the level of expenditure in the metropolitan area. In this manner, his measure did not penalize large areas for higher expenditures. However, his measure also failed to account for differences in the level of responsibility at the state and local levels and is therefore inadequate for comparing municipalities or metropolitan areas across state boundaries (see Table 1).

Lewis (1996) developed a measure called the Political Fragmentation Index (PFI), which, like Dolan's, was a more sophisticated measure of differentiation than the count of units or the ratio of units to population or area. Lewis's unique contribution was to explicitly account for the variation in power, functions, and capacity both across and within metropolitan areas and states. However, a serious problem with the PFI was how it handled the distribution of expenditures within the metropolitan area. Calculating the sum of the squares exaggerated the role of the large players even though, according to Lewis's own political logic, the small players constituted a roadblock to regional action.

The Metropolitan Power Diffusion Index (MPDI) devised by Miller (2002) resolved many of the problems of measuring the political effects of fragmentation. Using data from the Census of Governments, Miller calculated the MPDI for 311 metropolitan statistical areas (MSAs) in 1972 and 1992 using the 1992 MSA definitions in all calculations. Total operational expenditures were added together for each government to generate the total spending by those governments. Each government's percentage of the total spending was computed, and the square roots were taken and added together to generate the diffusion index for each region. Miller's index exaggerated the influence of the smaller units, whereas Lewis diminished their contribution to metropoli-

tan fragmentation. Thus, Miller's index was better suited to capturing the ability of even small players to block progress, change, and regional action.

Mathematically, the Miller scale generates a number from 1 to infinity. If a metropolitan region had one government that spent 100% of all local government expenditures, its score would be 1.0. As the number of governments and resulting diffusion of expenditures increases, so does the score. The index in 1972 ranged from a high of 14.3 for the Philadelphia metropolitan region to a low in the Midland, Texas, metropolitan region (1.3). Other highly diffused metropolitan areas in 1972 included St. Louis (12.3); Boston (11.2); Pittsburgh (10.7); Scranton/Wilkes-Barre, Pennsylvania (9.3); Minneapolis/St. Paul (8.5); and Chicago (8.3). In 1992, the Philadelphia metropolitan region continued to have the highest score on the index at 15.4. St. Louis and Boston retained the second and third positions, respectively. Chicago jumped to fourth, with a 46.1% increase in its score from 8.3 to 12.1. Pittsburgh; Scranton, Pennsylvania; and Minneapolis/St. Paul remained as the other most diffused metropolitan regions (see appendix).

TESTING VERTICAL AND HORIZONTAL STRUCTURES OF METROPOLITAN REGIONS

Figure 3 presented a typology of governance structures for metropolitan areas that distinguished between the distribution of power between local government units, as well as between state and local governments. The distribution of power in a metropolitan area reflects only one dimension of a region's ability to control its own fate that is set in the context of state-local power relations. The MPDI provides a rough estimate of the horizontal distribution of power and responsibility at the local level, but it does not explicitly consider the delegation of power between states, counties, and municipalities.

To measure the vertical power relationships between states and local governments, the Stephens index (state centralization index [SCI]) calculated for 1957 and 1995 is used. The SCI does not differentiate between specific functions that are performed by states versus local governments. The SCI has already been described in depth. The advantage of the SCI is that it has been reviewed and published, it is available for all 50 states, and it has been calculated for two points in time. To reflect recent conditions regarding the level of state centralization, the analysis uses the 1995 SCI.

The model to test horizontal and vertical measures also includes a term to capture the interaction of state centralization and metropolitan fragmentation for all levels of local government ($MPDI \times SCI$). Diffusion may not be as critical in a centralized state, whereas a centralized metropolis in a centralized

state may have conflicts with the state government. The 1957 SCI is used in the interaction term to reflect the centralization and diffusion at the beginning of the period of interest. Overall, states are centralizing (Stephens and Wikstrom 2000) and metropolitan areas are decentralizing (Miller 2002), so these initial conditions establish the important differences between metropolitan areas as metropolitan and state governments converge.

MEASURING REGIONAL ECONOMIC PERFORMANCE

Measuring regional governance is not the only challenge for this analysis. It is also necessary to have a measure of the competitiveness of the metropolitan economy that is not dominated by business cycles or industry effects. We do not argue that governance is the major influence on short-term economic growth. Quite the contrary, annual or even decennial employment growth is most likely to be influenced by business cycles and industry effects. Government does not create jobs, but it does affect economic capacity by regulating the market in which firms compete, thereby “creating the playing field.”

Measures that provide insight into the dynamics of a sector, cluster, or industry are too narrow and do not reflect the metropolitan economy as a whole. Cluster measures are particularly ill suited to a long-term, large-sample analysis that includes regions that experienced economic restructuring during the period of study. Other measures, such as the frequently used indicators of city-suburb inequality, mistakenly assign causality to the correlations between these two parts of the metropolitan economy.

Another alternative is to use straightforward measures of the absolute growth or percentage change in income, population, or employment. Absolute growth measures will be biased by the size of the metropolitan area. Rate of growth measures, on the other hand, disguise as much as they inform about metropolitan economic performance. For example, a region that attracted low-wage employment may experience a boom in employment and population, but when growth is measured through income, these gains evaporate. The reverse case could also be made. Absolute and rate of growth measures also fail to clarify whether the growth was attributable to macro effects such as national or industry-specific trends that happened to benefit a particular region such as an industry-specific boom.

Shift-share analysis is a common—if controversial—technique for isolating the influences on the performance of a metropolitan economy.⁴ The shift-share technique assumes that change in employment or income is explained by growth in the national economy, the local mix of industries, and a residual

that represents the competitive strength of the regional economy—the metropolitan shift. Using the shift-share technique provides an indicator of regional competitiveness that is comparable across regions and that reflects changes over time without ignoring internal and external cycles. Shift-share has been compared to and augmented by more rigorous statistical approaches, especially analysis of variance (Theil and Ghosh 1980; Berzeg 1984; Patterson 1991). The gains from these more sophisticated approaches have been achieved at the expense of clarity, communicability, and simplicity. Shift-share is extremely flexible and adaptable to a variety of data and forms of analysis. The technique is conceptually simple and communicates regional change in terms that are both powerful and easy to communicate. For descriptive purposes, shift-share is a superior technique because of its technical and conceptual simplicity. This may explain why shift-share continues to be a popular technique and is applied to new challenges such as the impact of international trade on regional economies (Gazel and Schwer 1998; Markusen, Nojonen, and Driessen 1991; Nojonen and Markusen 1997).

The dynamic shift-share technique developed by Barff and Knight (1988) is used to operationalize the measure of metropolitan competitiveness. The shift-share was calculated with two-digit-level income data for each year from 1972 to 1997 for all 285 MSAs in the data set. Because the dynamic technique calculates the shift-share annually, it is not manipulated by the variability between the starting and ending points. Income, rather than employment, is used in the shift-share because it better reflects improvements in standard of living. Creating large numbers of low-wage jobs can lower the regional standard of living and therefore does not represent competitiveness. The annual shift measure was then normalized by the total metropolitan employment in the base year. Subsequently, the annual competitiveness measures were summed for 1972 to 1997 to provide a single long-term metropolitan competitiveness measure.⁵

Agglomeration effects are expected to have a net positive effect on economic performance and competitiveness. Population growth affects the labor market and is in turn affected by growth in the economy. Changes in population are closely connected, but not entirely dependent, on competitiveness and economic growth. Regions with large and growing populations create more opportunities for growth because they have more human capital. Every individual has the potential to start a successful business that can contribute to regional growth; therefore, the larger the region, the more “tickets” it holds in the economic lottery. However, there is a window of opportunity in each person’s life for starting a business or holding a job, so a region cannot hold its tickets forever. To capture this dynamic effect of population agglomera-

tion, we measured change in the total population. The population change variable was calculated as the difference between the log of the 1992 population and the log of the 1972 population.

Competitiveness can be a self-reinforcing cycle where a competitive advantage has a cumulative effect on future performance. Regions such as New York, Chicago, and Los Angeles may not be the top performers in every economic cycle, but they have been consistently dominant regions. The control variable for this cumulative causation effect was developed in the same manner as the competitiveness variable using an income-based shift-share formulation for 1969 to 1972 to establish prior competitiveness.

The analysis includes a dummy variable for region, which is a frequently employed strategy to account for unspecified factors such as industry structure, regional economic trends, institutional dynamics, cultural traditions, and similar characteristics. Generally, the use of regional dummy variables increases the statistical power of the results, but this analysis also controls for several aspects of region in a more direct fashion: Regional economic trends and industry structures are controlled in the shift-share-based competitiveness variable. In this case, the variable is coded 1 for metropolitan areas in the Northeast or Midwest and 0 for all other regions. Dummy variables with more regional categories created problems with autocorrelation because the competitiveness variable directly accounts for the industry structure and the governance variables account for other institutional effects that might be associated with region.

MEASURING THE IMPACT OF METROPOLITAN REGIONAL STRUCTURE ON ECONOMIC PERFORMANCE

Matching the MPDI with other data produced an initial data set of 286 metropolitan areas that was further reduced to 285 MSAs after screening the data for outliers. To examine the impact of regional governing structure on the metropolitan economy, two models were used (specified in Table 2). The first model used the expenditure-based index, and the second model used the tax version. The models were tested using ordinary least squares regression. Overall, the models explain 58% to 61% of the variation in long-term metropolitan competitiveness. For the expenditure model, the most significant positive influences on competitiveness are change in population (0.58) and prior competitiveness (0.16). Expanding labor markets, represented by the change in population, also fuel competitiveness, but these regression results do not indicate the direction of causality. Competitiveness may fuel growth in popu-

TABLE 2: Analysis of Centralization and Decentralization on the Regional Economy

	<i>Expenditure Beta</i> <i>MPDI</i>		<i>Tax Beta</i> <i>MTDI</i>	
Change in population, 1972-1992	0.58***	(12.01)	0.61***	(13.29)
Index of state centralization (SCI), 1995	-0.15***	(-2.45)	-0.11*	(-1.75)
Interaction of metropolitan expenditure diffusion and state centralization	1.33***	(3.49)		
Interaction of metropolitan tax diffusion and state centralization			1.02**	(2.77)
MPDI, 1972	-1.36***	(-3.45)		
MTDI, 1972			-1.012***	(-2.73)
Northeast-Midwest	-0.03	(-0.50)	-0.06	(-1.17)
Prior competitiveness	0.16***	(3.77)	0.14***	(3.47)
Adjusted R^2	0.58***	(65.52)	0.61***	(75.12)

NOTE: MPDI = metropolitan power diffusion index; MTDI = metropolitan tax diffusion index; F statistics provided in parens.

* = significant at .10. ** = significant at .05. *** = significant at .01.

lation or vice versa. The findings for prior competitiveness sustain a cumulative causation hypothesis, although the coefficient is not high. Regions that are able to develop a competitive advantage are able to sustain that advantage over time and translate it to new industries and markets.

State centralization (-0.15) has a slight negative influence on metropolitan competitiveness. The results indicate that state centralization cannot serve as a proxy for regional government. Given the political difficulties in achieving metropolitan solutions, the price of relying on the state as the de facto regional government may be a reduction in metropolitan economic performance.

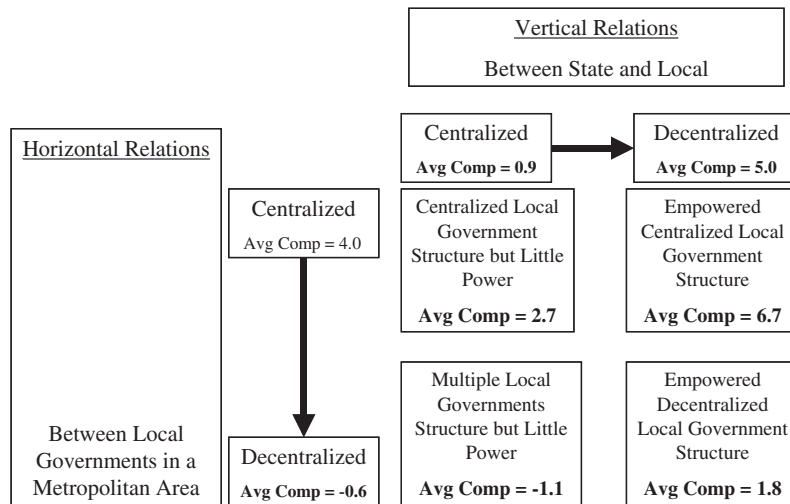
Location in the Northeast or Midwest has no significant influence on competitiveness. This finding is expected because the dependent variable controls for the industry mix effects that contributed to the decline of many metropolitan areas in these regions as they gave way to the newer, developing regions of the South and West. Northeastern and midwestern regions also tend to be more fragmented. The importance of including this regional dummy variable is that it provides a tougher test for the influence of governance on economic competitiveness as it controls for unspecified intervening variables that might explain the relationship between governance and competitiveness. The lack of significance for this variable reinforces the findings related to the other factors.

The MPDI, representing variation in horizontal metropolitan structures, had a significant negative influence (-1.36) on long-term metropolitan com-

petitiveness. Regional governance structure does not ordain success or failure in economic competition, but it does influence the probability of success. To sustain a competitive position, a regional economy must be flexible and adaptable (Chinitz 1961; Jacobs 1969; Saxenian 1994). Local government is a critical element in adapting to economic change. In a difficult economic time, companies must be responsive to the interests of their owners or shareholders and not the interests of the regional economy. As a result, companies will contract employment, move, or close their operations. This is exactly what good companies should do. Local governments are left as the responsible entity to develop a response to economic changes. It is hard to model the flexibility of the regional economy directly, but the MPDI acts as a proxy for the flexibility of regional governance. As such, these results indicate that decentralized local government does not generate a more effective or competitive regional economy and that, in fact, decentralized regions are likely to be less competitive and face a greater challenge in sustaining economic performance. Our measures and our analysis do not account for the role of regional councils or nongovernmental organizations that may provide some level of metropolitan cooperation. However, these bodies ultimately rely on gaining the acquiescence of independent government units within their territory. Our findings with the measures for tax and expenditure centralization suggest that the formal structures play a significant role regardless of extra-governmental efforts.

Substituting the diffusion of local taxation for expenditures, using the Metropolitan Tax Diffusion Index (MTDI), explains 61% of the variation in competitiveness and provides results similar to the expenditure model. The consistency between the models provides further validation of the MPDI and MTDI measures. Some level of consistency is expected because the units that collect the taxes spend the taxes. Of course, this is not always true. Centralized states may collect taxes and distribute them to local governments to expend. In this way, the expenditure measure might inflate fragmentation in centralized states. Because the tax measure demonstrates the same results, it can be concluded that the use of expenditures as a surrogate does not bias the results.

The tax measure is slightly less significant and has a smaller coefficient than the expenditure measure does. How taxes are collected is less important than how they are spent, although the difference is not large. States that have centralized tax collection but dispersed local government expenditures might get efficiency gains on tax collection, but it does not offset local government fragmentation. State centralization is also less powerful in this model, a finding consistent with the explanation that centralized tax collection is less significant.



Source: Analysis by the authors.

Figure 4: Average Economic Competitiveness Score by Type of Metropolitan Regional Structure

Figure 4 demonstrates the effect of the interaction of state centralization and metropolitan governance on competitiveness. States were sorted using the typology presented in Figure 3. Considering the interaction of state and local governance, the worst-case scenario is a decentralized region in a centralized state, where the average competitive shift is -1.1 , compared to an average of 1.8 for a decentralized region in a decentralized state. A centralized region in a centralized state does not fare much better, with an average competitiveness of 2.7 . On average, the metropolitan areas that are the most competitive are centralized regions in decentralized states (6.7).

State centralization compresses the range between the worst and best performers. State centralization has a positive benefit in that the minimum competitiveness scores are not as low as in the more decentralized states. Unfortunately, the metropolitan areas in the centralized states do not achieve the highest competitiveness scores. This evidence suggests that state centralization limits the options and flexibility of a metropolitan region. Whereas a centralized state might use its power to assist the low-performing regions in its borders, it is likewise limiting the competitiveness of the top performers (see Table 3 and appendix).

TABLE 3: Example Regions

<i>Metropolis</i>	<i>State</i>	
	<i>Centralized, Highest 20%</i>	<i>Decentralized, Lowest 20%</i>
Unified lowest 20%	Owensboro, KY (MSA) Las Cruces, NM (MSA) Santa Fe, NM (MSA) Great Falls, MT (MSA) Monroe, LA (MSA) Albuquerque, NM (MSA) Pine Bluff, AR (MSA) Billings, MT (MSA) Clarksville–Hopkinsville, TN-KY (MSA)	Tucson, AZ (MSA) Pueblo, CO (MSA) Naples, FL (MSA) Reno, NV (MSA) Ocala, FL (MSA) Tallahassee, FL (MSA) Sarasota-Bradenton, FL (MSA) Fort Myers–Cape Coral, FL (MSA) Fort Pierce–Port St. Lucie, FL (MSA)
Fragmented highest 20%	Philadelphia, PA-NJ (PMSA) Boston–Worcester–Lawrence– Lowell–Brockton MA-NH (NECMA) Pittsburgh, PA (MSA) Scranton–Wilkes-Barre– Hazleton, PA (MSA) Harrisburg–Lebanon–Carlisle, PA (MSA) Johnstown, PA (MSA) Allentown–Bethlehem–Easton, PA (MSA) York, PA (MSA) Reading, PA (MSA) Bangor, ME (NECMA) Lancaster, PA (MSA) Seattle–Bellevue–Everett, WA (PMSA) Springfield, MA (NECMA) Sharon, PA (MSA)	Denver, CO (PMSA) Rochester, NY (MSA) New York, NY (PMSA) Riverside–San Bernardino, CA (PMSA) Albany–Schenectady–Troy, NY (MSA) San Francisco, CA (PMSA) Nassau–Suffolk, NY (PMSA) Oakland, CA (PMSA) Syracuse, NY (MSA) Los Angeles–Long Beach, CA (PMSA) Utica–Rome, NY (MSA) Sacramento, CA (PMSA)

NOTE: MSA = metropolitan statistical area; PMSA = primary metropolitan statistical area; NECMA = New England county metropolitan area.

GOVERNANCE DOES MATTER

The above analysis demonstrates important findings at several levels. First, at the micro level, when it comes to regional economic performance, the structure of governance in a metropolitan region does matter, even with alternative explanations, such as agglomeration and cumulative causation,

included in the model. Agglomeration feedbacks represented by both population change and prior competitiveness contribute to the performance of the economy, but these positive effects may be inhibited either by decentralized regional governing or centralized state governmental authority. The findings indicate that state and local interaction is important, and they urge caution in substituting centralized state functions for metropolitan mechanisms because the measures and model used here do not distinguish which functional areas matter most.

These results do not fit neatly into theories or explanations of regional growth. Short-term regional growth is mostly likely to be influenced by national and international trends, as well as industry mix and performance. This analysis focuses on long-term competitiveness, which creates the conditions for growth. Governing structures do not create a form of economic determinism, but they do affect the long-term capacity to adapt. The conditions of competition change—and regional economies need to change with them—our governance, and political systems can either help or hinder this flexibility.

At the macro level, this article theorized that measuring the structure of regional governing based on the horizontal distribution of power within a metropolitan area and the vertical distribution of power between the state government and its constituent local governments could be an effective tool in the emerging discipline of the study of regional governing and metropolitan America. In this latter regard, it has proved most promising. Although we have applied it to regional economic performance, its application is much more widespread and could be used to study a wide variety of policy questions surrounding the governing of our metropolitan regions. It certainly could inform decision makers at both the state and local level about the implications of various structural arrangements on the multiple dimensions of regional decision making. One could suggest, at least, three dimensions: the efficiency dimension, the economic dimension, and the political dimension. The efficiency dimension of regional governance, represented primarily by the public choice scholars, has been explored and debated the most but will remain unresolved until analysts can accurately test the cost, quantity, and quality of service. To date, none of the methodologies applied to either side of the efficiency debate have provided such a test on a generalized sample of regions.

The second dimension of the regional governance debate is the economic dimension. Whether the structure of regional governing inhibits or promotes the performance of the economy has been largely ignored. This oversight is due in part to methodological issues and in part to the expertise and focus of the scholars engaged in the debate. The third is the political dimension of how

local or regional systems affect questions of representation, democracy, and accountability. This dimension, although not addressed in this article, is critical to the debate. One of the goals was to enhance the debate with more powerful analytical tools.

We believe that the economic performance debate would be greatly enhanced by more work on the modeling of the differential federal role in regions. Except for the use of regional dummy variables, this analysis has assumed that the federal role is geographically neutral. The next logical extension of the analysis would be to provide a complete model that accounts for federal, state, and local interactions. Another area of further research would be to examine differences in state centralization. Based on the current index, two states with identical scores could be radically different in the functions that are centralized. At this time, we cannot say if it matters which functions are centralized at the state level, but it is worthy of investigation.

The current decentralization trend in metropolitan governance, particularly in more centralized states, may be reducing the ability of these regions to remain competitive and generate growth over the long term. Ultimately, it is this economic performance that determines the capacity to carry out the tasks of governing at the local level. Reliance on state government is not a viable option for maintaining the competitiveness of the metropolitan economy. We have explored alternative visions for the organization of metropolitan governance and for long-term economic conditions; the clearest vision is a unified metropolitan region in a decentralized state.

APPENDIX Metropolitan Areas and Key Variables

<i>Name</i>	<i>Statistical Area</i>	<i>Metropolitan</i>		<i>Competitiveness, 1973-1997</i>
		<i>Power Diffusion Index, 1972</i>	<i>State Centralization Index, 1995</i>	
Abilene, TX	MSA	3.01	51.8	-1.76
Akron, OH	PMSA	4.61	56.1	-10.99
Albany, GA	MSA	1.98	51.2	3.32
Albany-Schenectady-Troy, NY	MSA	6.04	50	-4.58
Albuquerque, NM	MSA	1.81	63.7	1.99
Alexandria, LA	MSA	2.61	60.4	-4.57
Allentown-Bethlehem-Easton, PA	MSA	7.75	62.4	0.77

(continued)

APPENDIX (continued)

Name	Statistical Area	Metropolitan		Competitiveness, 1973-1997
		Power Diffusion Index, 1972	State Centralization Index, 1995	
Altoona, PA	MSA	3.51	62.4	-4.55
Amarillo, TX	MSA	1.99	51.8	-0.69
Ann Arbor, MI	PMSA	3.05	56.2	6.65
Anniston, AL	MSA	2.25	56.7	-0.81
Appleton-Oshkosh-Neenah, WI	MSA	5.35	52.9	5.93
Asheville, NC	MSA	2.55	53.4	4.37
Athens, GA	MSA	3.29	51.2	9.42
Atlanta, GA	MSA	7.17	51.2	13.55
Atlantic-Cape May, NJ	PMSA	5.37	55.8	4.05
Augusta-Aiken, GA-SC	MSA	3.25	51.2	2.01
Austin-San Marcos, TX	MSA	2.74	51.8	22.71
Bakersfield, CA	MSA	4.29	44.4	2.32
Baltimore, MD	PMSA	3.03	58.7	-3.17
Bangor, ME	NECMA	5.99	65.3	-0.70
Baton Rouge, LA	MSA	3.55	60.4	3.43
Beaumont-Port Arthur, TX	MSA	4.06	51.8	-5.78
Bellingham, WA	MSA	2.75	62.2	6.96
Benton Harbor, MI	MSA	4.25	56.2	-12.39
Bergen-Passaic, NJ	PMSA	7.89	55.8	-4.11
Billings, MT	MSA	1.92	64.9	-0.36
Biloxi-Gulfport-Pascagoula, MS	MSA	2.95	55.9	1.72
Binghamton, NY	MSA	4.68	50	-7.41
Birmingham, AL	MSA	5.5	56.7	3.00
Bismarck, ND	MSA	3.33	64.8	2.03
Bloomington, IN	MSA	2.32	52.8	0.68
Bloomington-Normal, IL	MSA	4.38	53.1	3.69
Boise City, ID	MSA	2.52	57.7	12.23
Boston-Worcester-Lawrence- Lowell-Brockton, MA-NH	NECMA	11.16	62.4	-1.59
Boulder-Longmont, CO	PMSA	2.74	47.1	21.18
Brazoria, TX	PMSA	3.77	51.8	10.45
Bremerton, WA	PMSA	2.81	62.2	15.43
Brownsville-Harlingen- San Benito, TX	MSA	3.75	51.8	6.94
Bryan-College Station, TX	MSA	1.72	51.8	10.20
Buffalo-Niagara Falls, NY	MSA	3.62	50	-13.43
Burlington, VT	NECMA	3.56	67.8	5.50
Canton-Massillon, OH	MSA	4.46	56.1	-6.34
Casper, WY	MSA	1.72	54.6	-5.58
Cedar Rapids, IA	MSA	2.31	53.6	0.67

(continued)

APPENDIX (continued)

Name	Statistical Area	Metropolitan		Competitiveness, 1973-1997
		Power Diffusion Index, 1972	State Centralization Index, 1995	
Champaign-Urbana, IL	MSA	4.64	53.1	-5.84
Charleston-North Charleston, SC	MSA	3.23	59.9	5.81
Charleston, WV	MSA	3.21	66.6	-12.43
Charlotte-Gastonia-Rock Hill, NC-SC	MSA	4.93	53.4	15.18
Charlottesville, VA	MSA	1.76	55.4	9.35
Chattanooga, TN-GA	MSA	3.22	51.2	0.14
Cheyenne, WY	MSA	1.77	54.6	0.72
Chicago, IL	PMSA	8.3	53.1	-5.62
Chico-Paradise, CA	MSA	3	44.4	4.95
Cincinnati, OH-KY-IN	PMSA	6.54	56.1	1.24
Clarksville-Hopkinsville, TN-KY	MSA	2.13	62.1	10.88
Cleveland-Lorain-Elyria, OH	PMSA	6.15	56.1	-8.32
Colorado Springs, CO	MSA	2.44	47.1	11.53
Columbia, MO	MSA	2.18	53	6.15
Columbia, SC	MSA	2.54	59.9	6.16
Columbus, GA-AL	MSA	1.76	51.2	2.87
Columbus, OH	MSA	6.69	56.1	1.23
Corpus Christi, TX	MSA	3.28	51.8	-1.45
Cumberland, MD-WV	MSA	2.98	66.6	-9.63
Dallas, TX	PMSA	5.41	51.8	13.34
Danville, VA	MSA	1.78	55.4	2.07
Davenport-Moline-Rock Island, IA-IL	MSA	5.74	53.1	-7.94
Dayton-Springfield, OH	MSA	6.44	56.1	-5.54
Daytona Beach, FL	MSA	3.38	47.8	8.55
Decatur, IL	MSA	3.64	53.1	-11.23
Denver, CO	PMSA	6.52	47.1	6.20
Des Moines, IA	MSA	3.42	53.6	1.90
Detroit, MI	PMSA	8.05	56.2	-7.53
Dothan, AL	MSA	3.08	56.7	2.10
Dubuque, IA	MSA	2.14	53.6	3.20
Duluth-Superior, MN-WI	MSA	4.52	50.9	-9.09
Eau Claire, WI	MSA	4.32	52.9	-1.42
El Paso, TX	MSA	1.88	51.8	6.38
Elkhart-Goshen, IN	MSA	3.1	52.8	6.75
Elmira, NY	MSA	2.73	50	-13.22
Enid, OK	MSA	1.9	58.3	-11.41
Erie, PA	MSA	3.98	62.4	-7.93
Eugene-Springfield, OR	MSA	2.72	57.4	0.04

(continued)

APPENDIX (continued)

<i>Name</i>	<i>Statistical Area</i>	<i>Metropolitan</i>		<i>Competitiveness, 1973-1997</i>
		<i>Power Diffusion Index, 1972</i>	<i>State Centralization Index, 1995</i>	
Evansville–Henderson, IN-KY	MSA	4.17	52.8	0.27
Fargo–Moorhead, ND-MN	MSA	4.58	50.9	0.54
Fayetteville, NC	MSA	1.66	53.4	9.07
Fayetteville–Springdale–Rogers, AR	MSA	3.4	65.3	15.61
Flint, MI	PMSA	3.6	56.2	-11.51
Florence, AL	MSA	2.7	56.7	1.47
Florence, SC	MSA	2.62	59.9	3.75
Fort Collins–Loveland, CO	MSA	3.1	47.1	19.31
Fort Lauderdale, FL	PMSA	4.16	47.8	11.91
Fort Myers–Cape Coral, FL	MSA	2.2	47.8	19.39
Fort Pierce–Port St. Lucie, FL	MSA	2.37	47.8	15.80
Fort Smith, AR-OK	MSA	4.47	58.3	7.66
Fort Walton Beach, FL	MSA	2.63	47.8	10.80
Fort Wayne, IN	MSA	4.55	52.8	1.44
Fort Worth–Arlington, TX	PMSA	4.63	51.8	15.11
Fresno, CA	MSA	4.38	44.4	3.75
Gadsden, AL	MSA	2.56	56.7	-1.14
Gainesville, FL	MSA	2.58	47.8	6.44
Galveston–Texas City, TX	PMSA	2.63	51.8	-4.14
Gary, IN	PMSA	4.89	52.8	4.48
Glens Falls, NY	MSA	4.52	50	-1.96
Grand Forks, ND-MN	MSA	4.78	64.8	-2.19
Grand Rapids–Muskegon– Holland, MI	MSA	4.4	56.2	3.39
Great Falls, MT	MSA	1.75	64.9	-9.49
Greeley, CO	PMSA	2.96	47.1	5.22
Green Bay, WI	MSA	3.01	52.9	10.89
Greensboro–Winston-Salem– High Point, NC	MSA	4.04	53.4	7.14
Greenville–Spartanburg– Anderson, SC	MSA	4.3	59.9	-1.76
Hagerstown, MD	PMSA	2.12	58.7	-2.27
Hamilton–Middletown, OH	PMSA	3.02	56.1	3.97
Harrisburg–Lebanon–Carlisle, PA	MSA	7.93	62.4	1.75
Hickory–Morganton, NC	MSA	3.33	53.4	6.34
Houma, LA	MSA	2.58	60.4	-6.37
Houston, TX	PMSA	4.73	51.8	16.95
Huntington–Ashland, WV-KY-OH	MSA	4.78	51.8	-1.76
Huntsville, AL	MSA	3.06	56.7	3.31
Indianapolis, IN	MSA	6.52	52.8	-2.62

(continued)

APPENDIX (continued)

Name	Statistical Area	Metropolitan		Competitiveness, 1973-1997
		Power Diffusion Index, 1972	State Centralization Index, 1995	
Iowa City, IA	MSA	2.22	53.6	7.05
Jackson, MI	MSA	2.87	56.2	-8.32
Jackson, MS	MSA	2.77	55.9	1.72
Jackson, TN	MSA	1.46	53.6	9.44
Jacksonville, FL	MSA	3.84	47.8	9.86
Jacksonville, NC	MSA	1.67	53.4	9.95
Janesville-Beloit, WI	MSA	3.27	52.9	-6.07
Jersey City, NJ	PMSA	3.4	55.8	-10.52
Johnson City-Kingsport- Bristol, TN-VA	MSA	4.4	53.6	-0.31
Johnstown, PA	MSA	7.76	62.4	-6.15
Joplin, MO	MSA	3.86	53	0.38
Kalamazoo-Battle Creek, MI	MSA	4.72	56.2	-1.17
Kankakee, IL	PMSA	4.31	53.1	-11.87
Kansas City, MO-KS	MSA	6.6	52.9	0.70
Kenosha, WI	PMSA	2.28	52.9	-7.27
Killeen-Temple, TX	MSA	3.52	51.8	7.97
Knoxville, TN	MSA	3.72	53.6	5.23
La Crosse, WI-MN	MSA	2.84	52.9	3.55
Lafayette, LA	MSA	2.68	60.4	7.15
Lafayette, IN	MSA	2.59	52.8	1.23
Lake Charles, LA	MSA	2.69	60.4	-0.08
Lakeland-Winter Haven, FL	MSA	2.84	47.8	6.22
Lancaster, PA	MSA	5.62	62.4	2.74
Lansing-East Lansing, MI	MSA	4.78	56.2	-2.70
Laredo, TX	MSA	1.6	51.8	15.75
Las Cruces, NM	MSA	1.52	63.7	4.48
Las Vegas, NV-AZ	MSA	2.5	49.7	25.03
Lawrence, KS	MSA	2.29	52.9	5.64
Lawton, OK	MSA	1.98	58.3	-0.51
Lewiston-Auburn, ME	NECMA	3.38	65.3	-2.89
Lexington, KY	MSA	3.61	62.1	7.09
Lima, OH	MSA	6.6	56.1	-4.04
Lincoln, NE	MSA	1.7	50.2	0.24
Little Rock-North Little Rock, AR	MSA	3.45	65.3	4.07
Longview-Marshall, TX	MSA	2.88	51.8	-1.83
Los Angeles-Long Beach, CA	PMSA	5.31	44.4	-11.51
Louisville, KY-IN	MSA	4.6	52.8	-7.10
Lubbock, TX	MSA	1.71	51.8	-2.03
Lynchburg, VA	MSA	2.35	55.4	3.57

(continued)

APPENDIX (continued)

Name	Statistical Area	Metropolitan		Competitiveness, 1973-1997
		Power Diffusion Index, 1972	State Centralization Index, 1995	
Macon, GA	MSA	3.34	51.2	4.01
Madison, WI	MSA	4.14	52.9	1.86
Mansfield, OH	MSA	3.3	56.1	-9.91
McAllen-Edinburg-Mission, TX	MSA	4.45	51.8	11.97
Medford-Ashland, OR	MSA	3.04	57.4	6.83
Melbourne-Titusville-Palm Bay, FL	MSA	3.27	47.8	5.11
Memphis, TN-AR-MS	MSA	2.34	53.6	-1.40
Merced, CA	MSA	3.47	44.4	3.64
Miami, FL	PMSA	3.05	47.8	-1.30
Middlesex-Somerset-Hunterdon, NJ	PMSA	7.29	55.8	8.77
Milwaukee-Waukesha, WI	PMSA	5.13	52.9	-4.42
Minneapolis-St. Paul, MN-WI	MSA	8.53	52.9	1.88
Mobile, AL	MSA	3.51	56.7	2.79
Modesto, CA	MSA	3.82	44.4	9.82
Monmouth-Ocean, NJ	PMSA	8.19	55.8	2.00
Monroe, LA	MSA	1.78	60.4	-0.84
Montgomery, AL	MSA	2.82	56.7	3.15
Muncie, IN	MSA	2.47	52.8	-7.73
Naples, FL	MSA	1.76	47.8	28.12
Nashville, TN	MSA	5.16	53.6	10.51
Nassau-Suffolk, NY	PMSA	5.71	50	-4.34
New Orleans, LA	MSA	3.24	60.4	-3.22
New York, NY	PMSA	6.06	50	-12.26
Newark, NJ	PMSA	7.79	55.8	-16.34
Norfolk-Virginia Beach- Newport News, VA-NC	MSA	2.16	55.4	3.57
Oakland, CA	PMSA	5.53	44.4	4.25
Ocala, FL	MSA	1.96	47.8	14.18
Odessa-Midland, TX	MSA	1.46	51.8	3.11
Oklahoma City, OK	MSA	4.49	58.3	0.03
Olympia, WA	PMSA	2.73	62.2	13.99
Omaha, NE-IA	MSA	3.61	53.6	1.07
Orlando, FL	MSA	3.72	47.8	19.30
Owensboro, KY	MSA	1.38	62.1	-2.35
Panama City, FL	MSA	2.51	47.8	10.28
Parkersburg-Marietta, WV-OH	MSA	3.64	56.1	2.00
Pensacola, FL	MSA	2.47	47.8	3.58
Peoria-Pekin, IL	MSA	6.51	53.1	-6.28
Philadelphia, PA-NJ	PMSA	14.31	62.4	-6.04
Phoenix-Mesa, AZ	MSA	3.16	49.3	17.44

(continued)

APPENDIX (continued)

Name	Statistical Area	Metropolitan		Competitiveness, 1973-1997
		Power Diffusion Index, 1972	State Centralization Index, 1995	
Pine Bluff, AR	MSA	1.89	65.3	0.96
Pittsburgh, PA	MSA	10.68	62.4	-9.06
Pittsfield, MA	NECMA	4.57	62.4	-5.47
Portland, ME	NECMA	4.26	65.3	5.71
Portland-Vancouver, OR-WA	PMSA	5.37	57.4	9.21
Provo-Orem, UT	MSA	3.33	58.1	17.26
Pueblo, CO	MSA	1.74	47.1	-4.62
Racine, WI	PMSA	2.79	52.9	-5.53
Raleigh-Durham-Chapel Hill, NC	MSA	3.42	53.4	14.12
Rapid City, SD	MSA	2.19	57.5	1.88
Reading, PA	MSA	6.07	62.4	1.67
Redding, CA	MSA	2.61	44.4	6.87
Reno, NV	MSA	1.93	49.7	11.92
Richland-Kennewick-Pasco, WA	MSA	3.71	62.2	3.41
Richmond-Petersburg, VA	MSA	2.33	55.4	6.83
Riverside-San Bernardino, CA	PMSA	6.04	44.4	12.14
Roanoke, VA	MSA	2.11	55.4	-1.01
Rochester, MN	MSA	2.3	50.9	-11.66
Rochester, NY	MSA	6.29	50	-16.24
Rockford, IL	MSA	3.96	53.1	-3.97
Sacramento, CA	PMSA	4.83	44.4	9.96
Saginaw-Bay City-Midland, MI	MSA	4.71	56.2	-2.65
St. Cloud, MN	MSA	5.55	50.9	6.94
St. Joseph, MO	MSA	2.47	53	-5.88
Salem, OR	PMSA	3.56	57.4	4.10
Salinas, CA	MSA	3.46	44.4	-0.95
Salt Lake City-Ogden, UT	MSA	5.32	58.1	8.66
San Angelo, TX	MSA	1.41	51.8	-2.38
San Antonio, TX	MSA	2.9	51.8	7.78
San Diego, CA	MSA	4.37	44.4	9.69
San Francisco, CA	PMSA	5.73	44.4	-11.08
San Jose, CA	PMSA	3.37	44.4	22.72
Santa Barbara-Santa Maria- Lompoc, CA	MSA	3.08	44.4	-2.44
Santa Cruz-Watsonville, CA	PMSA	2.6	44.4	10.66
Santa Fe, NM	MSA	1.69	63.7	12.80
Santa Rosa, CA	PMSA	3	44.4	14.08
Sarasota-Bradenton, FL	MSA	2.19	47.8	10.30
Savannah, GA	MSA	2.55	51.2	2.16

(continued)

APPENDIX (continued)

Name	Statistical Area	Metropolitan		Competitiveness, 1973-1997
		Power Diffusion Index, 1972	State Centralization Index, 1995	
Scranton-Wilkes-Barre-				
Hazleton, PA	MSA	9.26	62.4	-4.28
Seattle-Bellevue-Everett, WA	PMSA	5.6	62.2	14.60
Sharon, PA	MSA	4.98	62.4	-4.83
Sheboygan, WI	MSA	3.18	52.9	-2.70
Sherman-Denison, TX	MSA	2.98	51.8	5.90
Shreveport-Bossier City, LA	MSA	3.28	60.4	-4.32
Sioux City, IA-NE	MSA	2.82	53.6	-7.18
Sioux Falls, SD	MSA	2.6	57.5	8.20
South Bend, IN	MSA	3.47	52.8	-5.77
Spokane, WA	MSA	2.55	62.2	2.89
Springfield, IL	MSA	4.22	53.1	-6.17
Springfield, MO	MSA	2.31	53	7.90
Springfield, MA	NECMA	5.03	62.4	-5.64
State College, PA	MSA	4.19	62.4	3.92
Steubenville-Weirton, OH-WV	MSA	4.82	56.1	-8.41
Stockton-Lodi, CA	MSA	3.45	44.4	1.26
Syracuse, NY	MSA	5.39	50	-7.74
Tacoma, WA	PMSA	3.1	62.2	5.38
Tallahassee, FL	MSA	2.09	47.8	7.80
Tampa-St. Petersburg-Clearwater, FL	MSA	4.18	47.8	11.45
Terre Haute, IN	MSA	4.23	52.8	-4.11
Texarkana, TX-Texarkana, AR	MSA	3.26	65.3	0.71
Toledo, OH	MSA	5.27	56.1	-8.39
Topeka, KS	MSA	3.62	52.9	-3.55
Trenton, NJ	PMSA	3.49	55.8	-4.49
Tucson, AZ	MSA	1.56	49.3	4.44
Tulsa, OK	MSA	4.72	58.3	0.13
Tuscaloosa, AL	MSA	1.62	56.7	10.08
Tyler, TX	MSA	1.88	51.8	4.70
Utica-Rome, NY	MSA	5.15	50	-8.99
Vallejo-Fairfield-Napa, CA	PMSA	3.82	44.4	7.05
Victoria, TX	MSA	1.72	51.8	0.73
Vineland-Millville-Bridgeton, NJ	PMSA	2.84	55.8	-7.82
Visalia-Tulare-Porterville, CA	MSA	4.61	44.4	2.71
Waco, TX	MSA	2.51	51.8	-0.31
Washington, DC-MD-VA-WV	PMSA	4.73	55.4	3.33
Waterloo-Cedar Falls, IA	MSA	2.89	53.6	0.38
Wausau, WI	MSA	4.42	52.9	1.93
West Palm Beach-Boca Raton, FL	MSA	4.77	47.8	16.87

(continued)

APPENDIX (continued)

<i>Name</i>	<i>Statistical Area</i>	<i>Metropolitan</i>		<i>Competitiveness, 1973-1997</i>
		<i>Power Diffusion Index, 1972</i>	<i>State Centralization Index, 1995</i>	
Wheeling, WV-OH	MSA	4.71	66.6	-13.11
Wichita, KS	MSA	3.56	52.9	-1.44
Wichita Falls, TX	MSA	2.73	51.8	-4.92
Williamsport, PA	MSA	4.6	62.4	-5.17
Wilmington-Newark, DE-MD	PMSA	3.97	71.1	2.77
Wilmington, NC	MSA	2.88	53.4	7.23
Yakima, WA	MSA	3.56	62.2	0.87
York, PA	MSA	7.14	62.4	-1.72
Youngstown-Warren, OH	MSA	4.89	56.1	-9.86
Yuba City, CA	MSA	3.33	44.4	-0.76

NOTE: MSA = metropolitan statistical area; PMSA = primary metropolitan statistical area; NECMA = New England county metropolitan area.

NOTES

1. There is, however, a competing body of research that maintains that location decisions by some private businesses (e.g., manufacturing firms) are influenced by local taxes and location advantages existing within metropolitan areas (see Schneider and Kim [1996] for a discussion of this research).

2. Any federal government transfers to local governments are included in the local government data and thus reflected in the power of the local units.

3. State aid programs in many cases have provided more money to suburban communities than to central cities. A study of the 68 largest metropolitan areas showed that as late in the post-war period as 1970, the amount of state aid was evenly split on a per capita basis between the central cities and their suburban areas, despite the extensive problems and poverty of the central cities and the relative affluence and prosperity of most of the suburbs. There were extreme cases of disparity in per capita state aid in which many central cities received 75% or less of the amount of state aid flowing to the suburbs (Advisory Commission on Intergovernmental Relations 1977, 58-59, 78-79).

4. The controversy around the use of the shift-share technique centers more on its use in forecasting than in descriptive analysis. The shift-share is used in this analysis to generate a descriptive measure of economic performance.

5. Another method is to average the annual components, but this tends to reduce the variation in the variable.

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