

METROPOLITAN GOVERNANCE STRUCTURE AND INCOME GROWTH

ARTHUR C. NELSON*
Georgia Institute of Technology

KATHRYN A. FOSTER
State University of New York at Buffalo

ABSTRACT: *There has long been debate on the extent to which the structure of government in metropolitan areas helps or hinders income growth. Polycentrists contend that numerous local governments lead to competition that streamlines government, produces services at least cost, and leads to higher incomes. Centrists argue that large, multiple service governments have scale economies leading to more efficient production of services and hence higher incomes. What matters to regionalists is whether there is a metropolitan governance arrangement that effects an improvement in the distribution of economic activity that increases income. Which school of thought is right? This article evaluates the association between metropolitan governance structures and growth in per capita personal income among <287 of the largest metropolitan statistical areas for the period 1976 to 1996. After controlling for several factors, we find empirical support for the centrist and regionalist schools of thought but very little support for the polycentrist school.*

Agrowing literature addresses the link between the structure of governance at the metropolitan level and income growth (Foster, 1993; Nelson, 1990; Ward, 1987). This literature is advanced by “polycentrists,” “centrists,” and more recently “regionalists” (for a review, see Wallis, 1996).

Polycentrists argue that fragmented structures offer greater choice among service and tax/fee bundles for residents and firms with diverse preferences, constrain the costs of local government through competition, elevate overall government performance through experimentation by many units of governments at different levels, and increase the level of political representation and participation by individuals. Centrists counter that consolidated structures are more desirable because they capture efficiencies in economies of scale and agglomeration of talent, internalize externalities, promote fiscal equity, facilitate more efficient coordination of land use and facility planning, and economize on the potentially costly concessions common to many well-publicized competitions for “marquee” firms. In recent years, a third school of thought, espoused by regionalists, has downplayed traditional concerns about the actual arrangement of municipal governments to focus instead on the existence of regionwide mechanisms for collaborative decision making.

The persistence and intensity of the debate stem from its policy relevance. As regions respond to the imperatives of global competition, public officials, policy analysts, and citizens seek to know

*Direct all correspondence to: Arthur C. Nelson, Georgia Institute of Technology, 245 Fourth Street, Atlanta, GA 30332.

whether and how certain arrangements of local governments may be better than others in improving income, a near universal goal of metropolitan policy makers (Elkin, 1987; Logan & Molotch, 1983; Peterson, 1981). Determining the relative growth effects of alternative governance structures is of considerable concern to regional decision makers, as evidenced by a growing popular and professional literature on the merits of restructuring governance structures for economic gain (for example, see Dodge, 1996; Downs et al., 1996; Mahtesian, 1995; Peirce, 1993; Rusk, 1993, 1995; Wallis, 1996).

Despite considerable attention, however, questions about whether certain governance structures are superior to others in their ability to improve income and which of the three schools of thought are supported by the statistical evidence remain unanswered. Empirical evidence linking governance structures to income growth is scant and inconclusive. Mixed findings provide little incentive for advocates to stray from their theoretical allegiances and give policy makers and voters little guidance on issues of governance structure.

This study casts new empirical light on the relationship between metropolitan governance structures and growth in personal per capita income in metropolitan statistical areas (MSAs). The analysis examines changes between 1976 and 1996 in personal per capita income among the 287 largest MSAs considering measures of governance representing each school of thought, after accounting for a variety of factors. The analysis indicates that the centrist and regionalist schools, not the polycentrist school, are mostly right, suggesting a composite view of how governance structures influence income growth. The article proceeds with a review of the literature supporting the three contending schools of thought, a model of metropolitan personal per capita income growth, statistical assessment, and conclusions for policy.

REVIEW OF THE LITERATURE

There is consensus in the literature that metropolitan governance structure may affect choices made by households, firms, and developers. Because government arrangements may influence the type and quantity of services, facilities, and amenities in an area, they may also influence residential and commercial location and investment decisions (Danielson & Doig, 1982). Little consensus exists, however, about how metropolitan governance structure may affect economic development. Three schools of thought—centrist, polycentrist, and regionalist—contend for dominance in the debate over how the structure of metropolitan governance may influence growth in per capita personal income.

Centrist Perspectives

Centrists argue that large, multiple-purpose governments are most efficient in administration and production. Potential investors are repelled by multiple layers of government, confusing lines of authority, duplication of service, and the transaction costs of interacting with multiple small units of government (Committee for Economic Development, 1970; Ward, 1987). Regional governments, centrists allege, are best suited to internalize the externalities of growth (especially congestion) and realize economies of scale in service delivery (Rusk, 1993, 1995; Wingo, 1972). Centralized systems can draw upon a larger pool of human, material, and financial resources and offer a wider variety of services to residents and businesses than can governance systems comprised of relatively small, resource-limited, sometimes part-time-staffed municipalities (Felbinger, 1984; Frisken, 1991).

Centrists are especially critical of interjurisdictional competition for development, which they contend promotes zero- or negative-sum games, leads to inefficiently and inequitably located facilities, encourages haphazard development and overzoning of commercial and industrial land uses, and induces local governments to relax environmental standards (Barlow, 1991; Hanson, 1974; Netzer, 1991; Oates & Schwab, 1988; Peirce, Johnson, & Hall, 1993). Centralized governments, in contrast, can better rationalize metropolitan-wide development, narrow intraregional disparities, and spur investment in central city revitalization (Downs, 1994; Lewis, 1995; Mattoon, 1995; Orfield, 1997; Pastor, Dreier, Grigsby, & Lopez-Garcia, 1997).

To investors, regulatory consistency, a professionalized bureaucracy, and fewer interactions with large central governments relative to multiple smaller ones speed projects, reduce frustration, and lower development risks, all of which attract economic investment (Barlow, 1991; Cox & Nartowicz, 1980; Lind, 1997; Ward, 1987). Regional government attracts developers for whom the benefits of one-stop shopping outweigh the costs of uniform and monopolistic public service. The higher odds of dominating policy choices in a large, heterogeneous jurisdiction rather than in a small, homogenous, less fiercely participatory one may also draw developers to centralized governments (Lewis, 1996).

Polycentrist Perspectives

In contrast, polycentrists argue that politically fragmented governance systems are superior to centralized ones for attracting economic growth. Drawing upon the public choice and local political economy views of metropolitan political structure (Advisory Commission on Intergovernmental Relations [ACIR], 1987; Mueller, 1989), polycentrists argue that a system with many local governments offers firms and residents greater choice among service/tax bundles and, therefore, a greater probability of finding a close match for their service/tax preferences (Bish, 1971; Boyne, 1996; Ostrom, Tiebout, & Warren, 1961; Tiebout, 1956). The driving force is interjurisdictional competition, which polycentrists view as essential for ensuring customers the quantity, quality, and cost of services they demand (Dye, 1990; Kenyon, 1997; Nunn, Klacik, & Schoedel, 1996; Schneider, 1989). Multiple, overlapping governments signal not chaos or inefficiency, polycentrists contend, but, rather, responsiveness to heterogeneous demands and recognition that different urban services achieve efficient production levels at different scales (ACIR, 1987; DeTorres, 1972; Honey, 1976; Parks & Oakerson, 1989).

To investors, polycentric systems may be attractive because they facilitate playing one community off against the other to obtain tax breaks, offer lenient environmental regulations, and provide other economic inducements unlikely in a less competitive setting (Breton, 1983; Kenyon & Kincaid, 1991; Oates, 1990; Van Dyne, 1997). The one-size-fits-all model of regional government yields a public service monopoly, which polycentrists fault for lacking competitive incentives to operate efficiently, strike a bargain favorable to potential investors, or satisfy the needs of a heterogeneous customer base for tailored service packages. Polycentric systems also attract investment because they offer development capitalists, economic elites, and large businesses shields against the redistributive policies typical of regionalized systems (Cox & Nartowicz, 1980; Danielson, 1976; Logan & Molotch, 1987; Orfield, 1997).

Regionalist Perspectives

Rising above the centrist-polycentrist fray is a third school of thought represented by regionalists who contend that the number, size, or arrangements of local governments are relatively incidental when dealing with regional issues. Of primary concern is the role of metropolitan governance structures in making decisions on issues of regional significance (Dodge, 1996; Orfield, 1997; Yaro & Hiss, 1996). Regional governance structures have authority over the allocation of one or more resources that everyone in the region needs to sustain economy activity. Water, wastewater treatment and disposal, port management, airport management, flood control, and air pollution control, among other functions, generally operate best at the regional scale (Adams, 1997; Bollens, 1997). To regionalists, even nominally regional governments, such as Unigov in Indianapolis (composed of Marion County and the city of Indianapolis) or New York City (composed of five boroughs), are part of a larger regional governance system that needs such overarching decision-making mechanisms to achieve regional effectiveness (Hollis, 1998).

The attractiveness of regional governance systems to households, firms, and developers rests primarily on the assurance that regional concerns such as water, economic development, airports, and transit will receive regional consideration. Also attractive is that regional governance systems that

downplay the underlying local government structure free residents and businesses from divisive jurisdictional battles over service levels and the political turmoil of government reform proposals.

Regionalists further argue that because regional outcomes are politically difficult to achieve and require sustained collaborations, regional governance itself signals that the region is committed to making regionalism work despite the barriers (Nunn & Rosentraub, 1997). The commitment to metropolitan governance thus attracts particularly large corporate interests that have a long history of support for regionalized governance (Foster, 1997a; Teaford, 1979; Wallis, 1995).

There is, finally, the argument simply that regionalization of local public services can increase a metropolitan area's wealth. Using theoretical gaming, McAndrews and Voith (1993) observe that when individuals and firms act in their self-interest, they do not bear directly the costs of congestion they impose on others. Likewise, local governments acting in their own self-interest will impose costs (externalities) on others. The region's wealth and, by implication, the incomes of individuals suffer. Either by itself or more likely through coordination among different providers, a regional authority can improve the distribution of economic activity when compared to a region without such an authority or a region composed of only local governments. This seems to be the heart of the regionalist view.

Prior Empirical Evidence

Empirical evidence from case studies, business surveys, and aggregate analyses yields few conclusions linking metropolitan governance structures and economic growth. For example, Feiock and Carr (1997) found no relationship between the 1973 consolidation of the city of Jacksonville with Duval County, Florida, and job growth in manufacturing, retail, and services. Owen and Willbern (1985) found that Unigov, formed by the consolidation of the city of Indianapolis and Marion County, Indiana, was associated positively with economic growth (see also Blomquist & Parks, 1995). The extent to which the Unigov structure itself accounts for these changes is difficult to assess given implementation since consolidation of a host of economic development tools, including tax abatements, enterprise zones, and tax-increment financing. Durning's (1995) analyses of the 1991 consolidation of the city of Athens and Clarke County, Georgia, indicate that high pre-consolidation expectations for economic growth disappeared 30 months later, but it is much too early to assess the effects on the local economy.

More consistent are survey findings, which reveal strong support among business and community elites for regional government (for example, Crosby & Bryson, 1995; Greer, 1963; Henderson & Rosenbaum, 1973; Lyons, 1977; Teaford, 1979). At least on the metropolitan scale, the potential for one-stop permitting is apparently more attractive to business interests than is the opportunity to play one community off against another. For many elites, support for regional government stems from their perception that centralized structures foster economic growth. Corroborating evidence is offered by Edwards and Bohland (1991), who found a strong link between support for economic growth and consolidation proposals in Virginia. Persons with favorable attitudes toward economic growth tended to support city-county consolidation; those who preferred slow economic growth tended to oppose consolidation. Regardless of whether government consolidation actually does promote growth, then, the popular perception is that it will.

In contrast, a study of likely voters in Santa Clara County, California, found that support for regional government is strong among persons concerned with the negative effects of growth, such as traffic congestion and pollution (Gerston & Haas, 1993). To the extent that social, economic, and environmental problems have passed some threshold of dissatisfaction, residents indicate support for regional mechanisms to manage issues affecting the regional quality of life. A survey of citizens in consolidated Lexington-Fayette County and the politically decentralized Louisville metropolitan area in Kentucky found the same or higher levels of satisfaction with urban service delivery and government institutions among citizens in the regionalized metropolis relative to the decentralized one (Lyons, Lowery, & DeHoog, 1992). Whether such satisfaction would translate into higher income is not clear.

Evidence from aggregate studies is also ambiguous. Rusk (1993, 1995) finds that metropolitan regions with “elastic” central cities (those exhibiting increases in land area and population between 1950 and 1990) grew faster in population and manufacturing employment and had higher bond ratings on average than did regions with “inelastic” central cities. Rusk reports that politically integrated metropolitan regions had consistently higher growth rates between 1950 and 1990. A more sophisticated treatment of Rusk’s elasticity hypothesis found support for the link between metropolitan population growth and elasticity, but only weak evidence linking elasticity to metropolitan economic welfare (Blair, Staley, & Zhang, 1996).

Foster’s (1993) analysis of growth rates in the 129 largest MSAs between 1962 and 1982 may be the most direct analysis of the link between governance structure and growth. Her study found mixed evidence on the extent to which integrated or decentralized metropolitan areas have the edge in influencing growth, after controlling for regional differences. Supporting polycentrist arguments, metropolitan areas with relatively high proportions of unincorporated population (more political integration) had lower growth rates than areas that were more fully incorporated. Supporting regionalist arguments was the finding that metropolitan areas with relatively regionalized school districts relative to municipalities grew more rapidly.

MODELING METROPOLITAN GOVERNANCE STRUCTURE AND INCOME GROWTH

Growth can be defined in many ways. Two of the most common are population and employment change (Carlino & Mills, 1987; Clark & Murphy, 1996; Foster, 1993; Nelson, Drummond, & Sawicki, 1994). Population and employment growth per se does not mean necessarily that the economic well-being of residents is improved, however. A better measure of improvement from the perspective of individual welfare would be change in personal per capita income. Increases could be consistent with either population and employment growth, decline, or stability. A model that allows for evaluation of the association between metropolitan governance structure and growth in personal per capita income is necessarily composed of two components: the baseline factors contributing to change in per capita personal income per se and those relating to governance structures.

Baseline Factors

For more than two decades, economists and regional scientists have studied factors that contribute to growth, measured usually as population and/or employment change over time. The focus of much of the work is the Rustbelt-to-Sunbelt movement, the deconcentration of urban development into formerly rural areas, and movements between suburban and urban areas. Researchers have analyzed the role of factor prices, markets, and fiscal differences in explaining trends (Bartik, 1985; Helms, 1985; Mieszkowski, 1979; Nelson et al., 1994; Plaut & Pluta, 1983; Romans & Subrahmanyam, 1979; Wheat, 1986). Others have analyzed the contribution of such factors as agglomeration economies (Carlino, 1985; Ó hUallacháin, 1992), publicly provided inputs (Garcia-Mila & McClure, 1992), and public policy (Bartik, 1991; Blair et al., 1996; Erickson, 1992; Foster, 1993; Ingram, 1987; Nelson, Drummond & Sawicki, 1998). In their study of population and employment growth at the county level during the 1970s, for example, Carlino and Mills (1987) found that income and climate (measured through regional dummy variables) were important determinants of population and employment growth. Clark and Murphy (1996) refined their approach by analyzing such factors as amenities and socioeconomic conditions, finding some association.

Building on those studies, we consider baseline factors that contribute meaningfully to growth, such as local ecology, local socioeconomic conditions, local labor force characteristics, local economic structure, and regional controls. Local ecology includes accessibility to markets such as being a metropolitan area with more than one million residents or within 100 miles of one that is (positive association with income change); age of the metropolitan area’s classification by the Bureau of the Census because newer MSAs suggest by virtue of their growth to MSA status are frontiers for de-

velopment (positive association); and climate because milder climates mean fewer energy inputs, thereby lowering costs relative to more harsh climates (positive association). Local socioeconomic conditions include the population base because larger areas are more likely to see net outmigration than smaller ones (negative association), and features that may dissuade outside investment, such as the percentage of the population that is living under poverty-level incomes (negative association) and the crime rate (negative association). Labor force characteristics include personal per capita income at the base year of analysis because higher incomes signal a skilled labor (positive association); percent of the labor force that is employed indicating labor force employability (positive association); location within a right-to-work state as well as percent of labor belonging to a union (both negative associations) because right-to-work states act against collective bargaining efforts that can increase wages, while high union membership may have a dampening effect because declining industries (often dominated by unionized labor) or industries under intense competition from foreign markets negotiate wage concessions; and percentage of adults aged 25 and over with college degrees, which indicates an educated labor force (positive association).

Local economic structure characteristics include local conditions that may influence growth and control variables that reflect the structure of the local economy. Local conditions include the extent to which the local economy captures all potential economic activity. Such activity is defined as the sum of metropolitan economic activity among the major economic sectors divided by the total metropolitan personal income; higher ratios indicate fewer opportunities for income growth through important substitution (negative association) and effective local tax rates among all taxes because higher rates are presumed to dampen competition (negative association). (Put differently, the lower the ratio, the higher the economic leakage and the greater the opportunity for local import substitution.) Controls for the structure of the local economy are variables for MSA income derived from each of the major economic sectors (construction; manufacturing; transportation and utilities; wholesale trade; retail trade; finance, insurance, and real estate; and services). Depending on the metropolitan area, these variables can indicate an overreliance on certain sectors or opportunities for growth in others, but this study views them as essentially a set of controls to account for differences in local economic structure. Regional location controls here as elsewhere refer to the location of any given metropolitan area in one of the nine census divisions for which we use the most populous division, the South Atlantic, as the referent.

Governance Factors

Whether an area grows, declines, or is stable over time, how does governance structure affect growth in per capita personal income? To answer this question, we must consider, from an economic perspective, the role of local government *per se*. Local governments provide goods and services—be they public goods, private goods (Fisher, 1996), social goods, or merit goods (Musgrave & Musgrave, 1989)—that the private sector is unable to deliver and that the public believes government is more efficient at providing (presumably because of allocative efficiencies). Many of these goods and services, such as education, roads, and water supply and treatment, improve the local standard of living. Police and fire services that are provided by local governments protect property, thereby reducing losses from casualty. In metropolitan areas, many local governments provide the same general types of goods and services but with vastly different mixes of quality, quantity, and cost per unit. This variability reflects differences in tastes and preferences among individuals who sort themselves out spatially to maximize their self-interest given a budget constraint. This is the heart of the polycentrist view.

Duplication of some services, such as when two special districts run parallel water lines down the same street, can lead to higher costs per unit relative to the alternative of a single agency. Moreover, many services have economies of scale that require large size (in production and area) to achieve the lowest cost. Finally, only large governmental units have the wherewithal to marshal resources to effect major changes that benefit the public as a whole, such as providing air or rail transportation. Such economies of scale and agglomeration can lead to higher incomes. This is the heart of the centrist view.

Perhaps it is not so much who provides publicly demanded goods and services but how they are coordinated. A metropolitan governance arrangement that allows for efficient allocation of resources based on local governments, minimizes congestion costs across local government boundaries, and facilitates economies of scale and agglomeration throughout the region may lead to higher incomes. This is the heart of the regionalist perspective.

A model of the metropolitan economy must allow for an exploration into the relative influences of different governance structures on personal per capita income. The daunting task is measuring metropolitan governance structure in ways that reveal potential influences on growth. Early studies focused on the absolute number of governments in metropolitan areas or on a relative measure of governments per capita (for example, Burns, 1994; Hawkins & Dye, 1971; Nelson, 1990). Other researchers have devised governance structure measures or indices that incorporate expenditure data (Dolan, 1990; Lewis, 1996) and ratios of central city population to metropolitan population (Zeigler & Brunn, 1980).

Numerous problems are raised with the simplicity and/or singularity of these measures (Foster, 1993). No single measure can capture the manifold nature of governance structure, which in the public realm alone involves municipalities, counties, townships, special districts of various functions and geographic scopes, and the relations between these entities. Equating total government units in a metropolitan area to “fragmentation” neglects the fact that local governments have widely different influences on regional integration. A regional sewer authority, for example, may actually integrate lower level governments, a consideration neglected by a tally of governments. Even units of the same local government type have different impacts on governance structure. A central-city government that encompasses a large percentage of metropolitan area residents has more influence on the governance of the region than does a municipality of smaller size. The influence of township governments varies by state, whereas some townships function as relatively passive arms of state or county government with others functioning as full-service municipalities. Variation is even more pronounced across special district governments, which can range from a subdivision-sized drainage district to a multicounty, multipurpose land use authority (Foster, 1997b), even though each counts as one local government unit. Foster’s work (1993) provides a taxonomy of structures that we use as a point of departure here. Our taxonomy is composed of local and regional governance factors.

Local Governance Factors

Within metropolitan areas, governance is provided by central cities, suburban cities, counties, townships, and special service districts. We first consider central cities. Given post-World War II trends, metropolitan growth has occurred mostly at the cost of central cities’ share of metropolitan population, and central cities’ per capita personal income has lagged. Nevertheless, central cities have considerable resources that can be marshaled for a variety of purposes. Those resources are frustrated if central cities are unable to expand territory to keep pace with growth, which Rusk (1993, 1995) calls “central city elasticity.”

Rusk (1993, 1995) and later Blair, Staley, and Zhang (1996) show that metropolitan areas with elastic central cities enjoy higher per capita incomes than areas with inelastic central cities. We capture the essence of these phenomena with two variables. The first is central-city dominance, which is defined as the percentage of the MSA population residing in the central city in a base year (see Foster, 1993). The second is a measure of central-city elasticity, which is defined as the ratio of central-city population in 1980 to 1960 divided by the ratio of land area in 1980 to that in 1960. An inelastic city will have a low elasticity score that is perhaps negative but, in any event, around 0. (For example, San Francisco lost population even though it added housing units in part because it has been unable to expand its corporate boundaries more than a century.) A city that adds population but not land area during this period probably already had the land it needed in which to grow, so its ratio will be above 0. (Oklahoma City, with more than 1,500 square miles of land, annexed much of it before 1980 and still has hundreds of square miles of undeveloped area. Other examples include Kansas City, Missouri, and Denver, Colorado. Most consolidated city-county governments also enjoy this advantage.) A city that added both population and land will also have a ratio higher than 0. (The central

cities of Texas enjoy flexible annexation laws allowing them quite literally to capture each successive ring of development outward. Austin, Houston, and San Antonio are especially aggressive.) A negative association with per capita income growth is expected with respect to central-city dominance because its income growth will lag behind the metropolitan area as a whole; but a positive association is expected with respect to elasticity since it indicates the extent to which the central city is able to keep pace with metropolitan growth. These expectations are consistent with the centrist view.

Do higher percentages of people living outside central cities stimulate or dampen income growth? It depends on whether they live in unincorporated areas or suburban municipalities, and in municipalities it depends on how big they are. The centrist view is that metropolitan areas with relatively high proportions of unincorporated population will have lower income growth than areas that are more fully incorporated in a large number of competing municipalities (Foster 1993). The reason is that unincorporated areas are highly fragmented through the presence of numerous, usually small scale, special-service districts. Consistent with the centrist view, a negative association is expected between the percentage of unincorporated population and income growth.

In contrast, centrists would argue that few, larger suburban general-purpose governments are preferable to many smaller ones because larger cities are better able to provide services efficiently. Consistent with their view, a positive association is expected between suburban municipality size and income growth. While consistent with the centrist view that larger is better, this association could also be consistent with the polycentrist view since it recognizes the benefits of multiple municipal general-purpose governments within metropolitan areas.

The influence of special districts on income growth must also be considered. There are two kinds of special districts to consider. The first are those that have single service-provision purposes such as water, wastewater, drainage, fire, and mosquito-control services. The second is school districts because, while not everyone living in metropolitan areas receives the same kind of benefits from special-service districts, they all receive education services. Polycentrists would associate more single-purpose districts with income growth, but centrists would not. After Foster (1993), we create a variable for special-service district dominance that is defined as the ratio of special-purpose (excluding schools) to general-purpose governments (counties, municipalities, townships). Our variable for school districts is simply the number of districts per one million population. For reasons advanced by Foster (1993) and theorized by McAndrews and Voith (1993), we expect that income growth will be negatively associated with both forms of special districts, an expectation consistent with the centrist perspective.

Representative democracy is founded on the principle that the public elects officials to manage the affairs of government. To polycentrists, the more elected officials the more responsive government is to public needs. This can be translated into delivering goods and services tailored to citizens' tastes, preferences, and willingness to pay. To centrists, having only a few elected officials raises the level of public scrutiny and enhances accountability. There are two kinds of elected officials, however: those elected to manage general-purpose governments such as cities, counties, and townships, and those elected to manage special-service districts (including school districts). We create a variable for both kinds of elected officials that is defined as elected officials per one million population. Consistent with the centrist view, a negative association is expected between general-purpose and special-service elected official density and income growth, for reasons implied by Foster (1993) and McAndrews and Voith (1993).

Regional Governance Factors

Forms of regional governance include city-county consolidation; single-county, two-tiered federations of government; regional special purpose districts (which we limit to water and wastewater districts) that substantially influences growth; and regional multipurpose districts (such as Minneapolis-St. Paul, Portland, and Seattle).

Although some cities extend across county boundaries and some special purpose districts extend across metropolitan areas (such as park, zoo, and port districts), truly regional forms of governance are by design intended to influence growth throughout the regions. City-county consolidations merge

central cities with mostly unincorporated county populations. To centrists, the effect on income growth should be positive as it is central cities' ability to annex territory commensurate with growth.

More problematic are single-county two-tiered federations of government wherein a countywide entity establishes the framework for decision making that is implemented by subordinate local governments (such as Metropolitan Dade County, Florida [Miami]). These arrangements suffer from not being truly regional in scope and not really being consolidations of services. Polycentrists would view them as inefficient because they add one level of decision making without necessarily improving accountability, while centrists would worry that more, not fewer, people are involved in making decisions affecting any given service. Based on our interpretations of both schools of thought, we expect a negative association between single-county, two-tiered governments and income growth.

To polycentrists, centrists, and regionalists alike, regional single-purpose districts based on the economies of scale associated with large-scale infrastructure provision should be associated positively with income growth. Water and wastewater systems are known well for their scale economies that lead to efficient delivery typically over large areas and to large numbers of customers. The presence of such districts should be associated positively with income growth.

More debatable is the role of regional multipurpose governments. Such entities are anathema to polycentrists because they threaten to frustrate the efficiencies associated with competition among local governments and because they reduce responsiveness to local needs. To centrists and regionalists, however, such forms of governance allow issues affecting the region to be raised and addressed at a regional level. Following McAndrews and Voith (1993) and consistent with the regionalist view, we expect a positive association between income growth and the presence of multi-jurisdictional, multipurpose regional governments.

Empirical Model

The empirical model is shown in Equation (1). The analysis is applied to the period 1976 to 1996 because those years represent high points in national economic productivity. The specification is linear. Data come from the County and City Data Book (1983), census of government finance for 1977 (1980), local climatological data (Savageau & Loftus, 1997), the census of population for 1960, 1970, 1980, and 1990, and the Regional Economic Information System (Bureau of Economic Analysis, 1998). Where possible, the base year for variable definition is 1976. In many cases, and mostly affecting variables based on the decennial census, the base year is 1980. Thus, the model is designed to indicate causality.

(1) Personal-per-capita-income-change

$$\begin{aligned}
 &= B_0 + B_1\text{Local-Ecology} \\
 &\quad + B_2\text{Local-Socioeconomic-Conditions} + B_3\text{Labor-Force-Characteristics} \\
 &\quad + B_4\text{Economic-Structure} + B_5\text{Regional-Location} \\
 &\quad + B_6\text{Local-Governance} + B_7\text{Regional-Governance}
 \end{aligned}$$

RESULTS AND INTERPRETATIONS

Table 1 reports regression results. There is no evidence of problematic multicollinearity among the variables. (The correlation matrix and plot of standardized residuals is not reported for brevity.) The casewise plot of standardized residuals did not reveal systematic bias. At 0.76, the adjusted coefficient of determination is substantial and the F-ratio is significant beyond the 0.01 level. For the most part, variables have the correct signs, and where they do not, the coefficients are not significant at any conventionally accepted level. We review results first for baseline variables of note and then for local and regional governance structures.

TABLE 1

Regression Estimates on Change in Per Capita Income, 1976–1996

Independent Variables	Coefficient	t-statistic
Local Ecology		
Metro area over 1 million within 100 miles	-111.58	-0.43 ^{ns}
Metro age (Census year of designation)	7.04	1.08 ^{ns}
Heating and cooling degree days	-0.09	-0.55 ^{ns}
Local Socioeconomic Conditions		
Population base (in 1000s)	6.56	0.82 ^{ns}
Percent population in poverty	-99.88	-2.99 ^{p<.01}
Violent crimes (per 100,000 population)	0.26	-0.39 ^{ns}
Labor Force Characteristics		
Personal per capita income	1.81	8.09 ^{p<.01}
Percent labor force employed	37.69	1.49 ^{p<.05}
Right-to-work state	-680.00	-1.68 ^{p<.05}
Percent union membership	-64.95	-2.49 ^{p<.01}
Percent age 25+ with college degree	161.13	8.25 ^{p<.01}
Economic Structure Characteristics		
Metropolitan economic capture rate	-16.80	-2.22 ^{p<.05}
Local effective tax rate	0.58	0.60 ^{ns}
Pct. income, construction (in 1,000s)	0.22	0.17 ^{ns}
Pct. income, manufacturing (in 1,000s)	-0.04	-0.18 ^{ns}
Pct. income, transp., utility (in 1,000s)	0.79	0.49 ^{ns}
Pct. income, wholesale trade (in 1,000s)	-0.13	-0.08 ^{ns}
Pct. income, retail trade (in 1,000s)	-0.00	0.87 ^{ns}
Pct. income, fin., ins., real est. (in 1,000s)	-0.18	0.14 ^{ns}
Pct. income, services (in 1,000s)	-0.37	0.53 ^{ns}
Regional Location		
North East	998.22	1.06 ^{ns}
Middle Atlantic	-220.91	-0.28 ^{ns}
East North Central	-190.94	-0.30 ^{ns}
West North Central	-914.71	-1.23 ^{ns}
East South Central	317.55	0.64 ^{ns}
West South Central	-1444.73	-2.92 ^{p<.01}
Mountain	-1286.16	-2.05 ^{p<.05}
Pacific	-1686.75	-2.41 ^{p<.01}
Local Government Structure		
Central city population, percentage	-23.54	-2.65 ^{p<.01}
Central city annexation ratio	316.87	1.32 ^{p<.10}
Unincorporated population, percentage	-902.27	-0.98 ^{ns}
Suburban city average population (in 1,000s)	31.81	1.79 ^{p<.05}
Special service district dominance	-9.71	-1.28 ^{p<.10}
School district density (per million)	-1.82	-0.68 ^{ns}
Elected general purpose density (per million)	-0.09	-0.52 ^{ns}
Elected special district density (per million)	-0.69	-1.54 ^{p<.05}
Regional Governance Structure		
City-county consolidation	423.76	0.68 ^{ns}
Single-county, two-tier federation	-5579.65	-2.47 ^{p<.01}
Regional utility district (water, sewer)	260.01	0.44 ^{ns}
Regional multipurpose district	1479.11	1.29 ^{p<.10}
(Constant)	6919.94	3.29 ^{p<.01}
Adj. R-sq.	.76	
Durbin-Watson Test	2.07	
N of cases	287	
F-ratio	24.18 ^{p<.01}	
Mean change in personal per capita income	16,527	

Notable Baseline Results

The mean change in per capita personal income between 1976 and 1996 is \$16,527. (Because we look at change over time only with respect to personal per capita income, there was no need to adjust for inflation.) All of the variables for labor force characteristics possess correct signs and are significant at conventionally accepted levels. Variables relating to unionization (location of MSAs in right-to-work states and percentage of labor force union membership) have coefficients of $-\$681$ and $-\$65$, respectively. (We round numbers in text to the nearest dollar unadjusted for inflation.) Although unionization appears to dampen income change, right-to-work policies appear to dampen them more. On the positive side, a one percentage change in adults (aged 25 and over) with a college degree increases income by \$161. The only variable of real interest among the economic structure characteristics is that for MSA economic capture, which shows that an increase in the ratio of economic capture is associated with a decrease in income change ($-\$17$); put another way, the lower the ratio, the greater the opportunity for import substitution and, hence, a positive change in income.

Local Governance Structure

All local governance structure variables possess the expected signs, and most are significant at conventionally accepted levels. The ratio of central-city dominance is negatively associated with income growth ($-\$24$ for each percentage increase), but central-city elasticity is positively associated ($\$317$ for each unit increase in the elasticity measure). It would seem that Rusk's elasticity argument is supported in this work (see also Blair, et al., 1996, for corroboration). The percentage of unincorporated population is negatively associated with income growth ($-\$902$), although it is not significant statistically, while suburban municipality size is positively associated ($\$32$).

Both variables for special districts show a negative association with income growth, although only the variable for special districts is significant statistically ($-\$10$). Likewise, both variables for elected official density (officials per million) show a negative association with income growth, although only the variable for special-service district elected official density is significant statistically ($-\$1$). We surmise that while numerous elected special district officials blur the lines of accountability along the electorate, higher profile officials elected to general-purpose governments may lessen this blur. This is an interesting avenue of additional research that should be pursued.

Regional Governance Structure

The regional governance structure variables also possess the expected signs. City-county consolidation shows a positive association with income growth, although it is not significant statistically, while the variable for single-county two-tiered governments was both negatively associated with income change and significant statistically ($-\$5,580$). We do not suspect, frankly, that such forms of governance punish local economies to such an extent, even though our modeling is designed to account for other factors. This is another area worthy of more investigation. Both variables for multi-jurisdictional, regional utility service and governance are positively associated with income change, but only the regional government variable was significant statistically ($\$1,479$). The magnitude seems reasonable, and the direction of association is consistent with theoretical expectations advanced by McAndrews and Voith (1993).

POLICY IMPLICATIONS

Policy analysts and practitioners have long sought guidance on how to improve the welfare of people living in complex metropolitan areas through different governance arrangements. Competing views abound. This article may help to narrow those views by illuminating the role of large general-purpose governments and regional decision-making structures and downplaying the role of numerous small local governments in improving individual welfare.

We begin with central cities. It seems that when central cities are unable to expand their boundaries commensurate with growth, their metropolitan areas lag behind others in improving income. When

allowed to be “elastic,” as Rusk puts it, central cities can elevate incomes throughout metropolitan areas. We are not sure, however, that perfectly elastic central cities—those that merge first with their host central counties and eventually with the region as a whole—will lead to higher incomes relative to simply merging with their host counties. We surmise that central-city elasticity leading to city-county consolidation probably raises metropolitan incomes close to their highest potential levels, but this is certainly a topic for further research.

The reason we suspect there is an upper limit to the territory over which central cities may operate to maximize metropolitan-wide income growth is that large suburban municipalities also appear to contribute meaningfully to personal per capita income. Consider that the mean suburban municipality population in 1980 was 7,300 and our results suggest that metropolitan per capita personal income rises by \$32 for each increase in population of 1,000. Very large suburban municipalities, perhaps rivaling their central cities and especially if they enjoy some level of elasticity, may be important factors in increasing metropolitan income. Polycentrists may be wrong about guiding metropolitan areas to ever smaller and more numerous local governments, but we suspect they are right about the need for a sufficient number of municipalities able to truly compete with each other. A region characterized by a few large municipalities may enjoy higher income growth relative to regions dominated by only the central city or numerous smaller municipalities. This is another area for further research.

What does this say about the influence of large shares of unincorporated populations on income growth? The results suggest a negative association between the percentage of a metropolitan area’s population living in unincorporated areas and income growth. Although the coefficient is not significant statistically at conventionally accepted levels ($p < .16$ of the one-tailed t-test), it has the expected sign and is worthy of comment. Polycentrists would argue they are correct in the sense that the alternative would be for that population to live in suburban municipalities (of various sizes), which in their view would improve individual welfare. This assumes that unincorporated populations have all their needs met by a general-purpose county government. This may be the case in some regions, but unincorporated populations are more likely than incorporated populations to be served by numerous small-scale special-service districts, and based on results for special districts, individual welfare may be reduced because of fragmented government decision-making, consistent with expectations of centrists. More work needs to be done to tease out these competing explanations for the negative association between unincorporated population percentage and income growth.

Two other effects seem clear. First, as decision making becomes fragmented, as evidenced by numerous special districts and elected officials, growth in personal income declines. This is consistent with concerns raised by centrists. Second, the presence of a regional government has a decidedly positive effect on personal income growth, even when fragmentation exists. This is consistent with the views of regionalists and supportive of the theoretical expectations of McAndrews and Voith (1993) on the individual welfare advantages of regional governance arrangements.

CONCLUSION

If a reasonable measure of economic well-being is change in personal per capita income, our results support views of centrists and regionalists but not necessarily those of polycentrists. Elastic central cities supplemented by large suburban municipalities operating in a climate where resource allocation decisions affecting the region are coordinated through cross-jurisdictional, multipurpose regional governance arrangements may satisfy individual welfare best. We are not necessarily saying that especially complex metropolitan areas would be better off with a few (or just one) general-purpose governments managed by a few elected officials. We suspect that polycentrism at some level is important, which supports our suggestion that several large general-purpose governments are important to advancing individual welfare. A reasonable conclusion that may be drawn from the analysis is that individual welfare appears to be advanced by the presence of elastic central cities, large suburban municipalities, few elected special service district officials, and a metropolitan governance structure capable of coordinating decisions among local governments for regional benefit.

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