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Is There A Link Between Regional Planning and Economic Growth?

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Is There A Link Between Regional Planning and Economic Growth?

Introduction

Regionalism is being explored by a wide variety of community players who include representatives from the public, private, and not-for-profit sectors (Dodge 1996, 1). Intermunicipal agreements, county service expansion, new region-wide special-purpose governments, and multi-sector coalitions of "civic regionalists" have proliferated throughout the country during the last decade, even though the benefits of regional cooperation remain elusive in many ways (Foster 1997, 375).

Hence, the question remains: Do greater metropolitan planning efforts lead to higher levels of community prosperity and quality? Nelson and Foster (1999) have found some evidence that more coordinated regional governing structures, particularly regional utilities, seem to promote higher levels of economic welfare. But more coordination in service delivery does not necessarily stem from, or lead to, more coordination in planning. In fact, Foster (1997) has pointed out that it is easier for regions to develop coordinative mechanisms around systems maintenance functions, such as transportation and sewer system operation. However, these represent only two of the many inputs that are required to generate local investment and business growth.

This paper attempts to answer the question.

Background

Global political and economic change are undermining the autonomy and importance of nation-states and increasing the importance of urban regions. Federal devolution within the U.S. has pushed many responsibilities down to the state level or below, yet many of the responsibilities—for welfare, education, labor force development, etc.—far exceed the capacity of any one municipality. The nation-state, a relatively new means of governance, is being bypassed by new international arrangements that dissolve boundaries

using technology and electronic communication and forge direct links between city-states worldwide (Sassen 1994, 2-4). In his ground-breaking work *The End of the Nation State*, economic futurist Kenichi Ohmae asserts that future economic prosperity requires limiting the power and role of nation-states and granting increasing autonomy, not to states, provinces or municipal corporations, but to wealth-producing regions (Ohmae 1995, 142). A decade earlier, Jane Jacobs argued that urban regions, not nations, are the basic, salient entities of economic life: " ... indeed, the failure of national governments and blocs of nations to force economic life to do their bidding suggests some sort of essential irrelevance" (Jacobs 1984, 29). It has been further argued that the capacity of the United States to deliver a rising standard of living and to compete globally rests ever less on the volume of its resources and ever more on how those resources are leveraged in urban areas (Hicks & Rees 1993, 2-3).

Our governance system must develop new ways of recognizing the importance of urban regions. It is these regions, which transcend and ignore political boundaries, that are the geographic units in which goods and services are created. The national labor force is organized regionally. Regional transportation and infrastructure are ubiquitous. And life occurs in regional environments where water and air and the toxins they bear easily cross jurisdictional lines (Hershberg 1996, 25). People share regional symbols, images, cultural facilities, sports teams, and many other assets. Moreover, it is increasingly rare to find an individual who lives, works, shops, and plays in only one metropolitan jurisdiction. People live regionally.

One of the most hotly debated assertions of the 1990s was that regional unity, however defined, leads to higher levels of economic growth. Hershberg (1996, 27) states that, in the global economy, regions whose cities and suburbs succeed in finding ways to work together will fare better than those whose constituent governments choose to "go it alone". Peirce *et al.* (1993, 3) assert that urban regions will have difficulty attracting and retaining mobile global capital unless they show "a stable, dependable face to the world". Others argue that fragmented decision-making and outright interjurisdictional competition not only waste scarce resources but damage the overall well-being of the economic commons (Barnes & Ledebur 1998; Edwards & Bohland 1991). Moreover, Nelson and Foster (1999) have found some empirical evidence that

higher levels of regional coordination lead to higher levels of economic prosperity.

The most often-cited case for the link between regional unity and economic growth has been made by David Rusk in his seminal book, *Cities Without Suburbs* (1993, 1995). Using population change, poverty, per capita income, and city/suburban income ratios as measures of economic success, Rusk found that metropolitan areas in which the central city can grow or has grown since 1950 are more successful, both economically and socially. Such cities have lost fewer or gained more manufacturing jobs; city residents earn more relative to their suburban counterparts; both blacks and Hispanics are less segregated; poverty rates are lower; and all incomes, central-city and suburban alike, increase faster. Rusk suggests that central cities that exercise greater control over their surroundings and suffer less competition from suburban rivals are stronger regional economic engines and, hence, should be more competitive in the global economy.

A related body of literature addresses the more specific issue of city-suburban interdependence, one of the most important components of the argument for regional economic development. Noyelle and Stanback (1984) were the first to question the extent to which economic development should be a common concern of an entire metropolitan area or the independent concerns of its constituent municipalities. The debate heated up in the late 1980s when public-choice advocates argued that competition, even for economic development, improves the quality, responsiveness, and efficiency of each community (Niskanen 1988, 13). In the early 1990s, advocates of regionalism and central-city dominance began to fight back, averring that suburban independence "is an impoverished idea selectively applied to ward off central city problems while enjoying its resources" (Savitch *et al.* 1993, 341). Richard Voith, in a study prepared for the Federal Reserve Bank of Philadelphia (1992), found that metropolitan areas with relatively high central-city growth tended also to have relatively high suburban growth, suggesting complementarity; moreover, in some cases it was central-city growth, not suburban growth, that improved a metro area's ranking against other metro areas. Collins (1994) found that, controlling for variables such as age, density, percent black, and degree of suburban fragmentation, the proportion of the metropolitan population that resides within the central city (its inclusion index) is negatively related to central city-suburban income disparities.

This body of studies has several limitations. The sample size of areas studied usually does not exceed 60, yet to fully evaluate the dynamics of regional economic growth requires a number of cases capable of modeling a large number of variables. Also, regional coordination has been operationalized primarily with reference to its opposite, fragmentation, typically using population per government unit (municipality, county, school district or special-purpose district). By this measure, the Twin Cities metropolitan area with its nearly 200 general-purpose governments looks highly fragmented and would be expected to perform poorly in economic terms; yet this is not the case. Similarly, the presence of a large number of single-purpose regional agencies, although seeming to herald regional unity, may in fact describe a region that is highly fragmented but along functional rather than geographic lines (Bollens 1997).

Moreover, the sampled metropolitan areas are typically the largest ones. This approach not only skews the results, because these areas tend to be highly fragmented (think of the New York City, Los Angeles, Chicago, Philadelphia, Washington, and San Francisco regions) but it also means that several slightly different analyses have re-covered essentially the same territory, with somewhat inconclusive results. In cases where the largest MSAs were not used exclusively, a particular sub-national region became the focus, biasing the results toward certain outcomes conditioned by economic circumstance, the peculiarities of certain industrial clusters and/or governmental structures, and even (sub-national) regional cultures.

Rusk's sample is much more inclusive but still limited only to metro areas that:

< had a population in excess of 200,000 in 1990, and

< were not "Mexican border towns," "declining mining regions," "white-only" regions (having extremely small minority populations) or lacking a central city (in 1990, this group consisted of Brazoria, TX; Monmouth-Ocean, NJ; Nassau-Suffolk, NY; and Orange County, NY).

As a result, his sample of 165 metropolitan areas exhibits much the same skewness as the others.

Moreover, some of Rusk's reasoning is circular: For example, he isolates 23 areas he dubs "cities without suburbs," using two criteria: (1) that the central city contains at least 50% of the region's population, and (2) that its median per capita income equals at least 90% of that in the city's suburbs—and then declares

that these cities are proof that cities without suburbs perform better economically than do others. It seems clear that a criterion cannot also be a conclusion based upon itself.

His study suffers in two other closely related ways. First, his definition of "elasticity" lacks a theoretical underpinning. It therefore strikes the observer as arbitrary – why use the central city's density, why use density in 1950 as opposed to some other year, why use just annexation as a measure of unity (Rusk's operationalization of "regionalism"), and why weight the change in land area (via annexation) three times heavier than population attainment? Why not use the number of counties, or degree of economic diversification (Mumphrey & Akundi 1998, 152), or a fragmentation index (population per unit of government—see, e.g., Lewis 1996), or an index describing state policies toward annexation and incorporation? Moreover, the use of 1950 density data leaves the true status of many newer, and smaller, metro areas in doubt; however, Rusk solved this problem by excluding them from his regional analysis (although he did calculate an elasticity for each of the 522 central cities located within those metro areas).

Second, by asserting that a city's land area and density in 1950 are relevant, what we may be seeing is simply an historical artifact–that is, large older cities as a group are less elastic because most had completed all the annexation they could (primarily before 1920) and because their densities declined in the following two decades. While this is not universally true, as Rusk demonstrates, its commonness could easily be sufficient to distort his results and yield some shaky conclusions, a problem noted by Blair, Staley & Zhang (1996). Moreover, as Rusk himself admits, there are significant exceptions to the generalization that inelastic cities do not perform as well in generating economic growth or individual prosperity – witness Minneapolis/St. Paul, Boston, and San Francisco (Rusk 1995, 52).

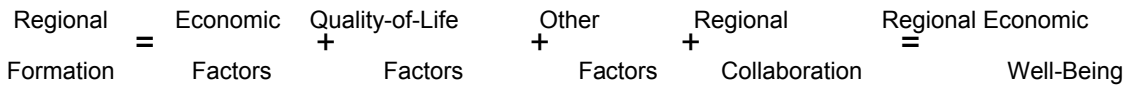
This paper represents a first effort to overcome the methodological shortcomings of previous study efforts in determining whether regional cooperation has a positive effect on regional economic growth and prosperity.

Methodology

Given the wide variety in regional planning agencies, and the lack of comprehensive information about them, a decision was made to use a specific type of agency—the metropolitan planning organization (MPO)—as a source for data about regional planning efforts. MPOs originated in response to federal transportation planning requirements in the early 1960s, and since then have taken on (and dropped) a variety of other planning functions. Every MSA and PMSA is served by at least one MPO. Moreover, federal rules require representation of metropolitan-wide interests. These attributes combine to make the MPO the most readily identifiable and most uniformly constituted regional agency nationwide. Using MPOs therefore addresses two challenges of regional research: operationalizing the concept "regional" in a clear and functional manner, and addressing problems of sample selection and attrition. The universe of MPOs also offers a manageable sample size.

Exploring the relationship between metropolitan planning and metropolitan economic prosperity requires information about each of the constructs in the model described by Figure 2-1:

Figure 1. Does regional planning matter to regional prosperity? A predictive model.



The dependent (output) variables are discussed first, followed by discussions of each of the four input constructs. All data sources are listed in an appendix to this paper.

Economic outputs and outcomes

A wide variety of variables has been identified as pertinent to predicting primary economic outcomes. Among these outcomes, two are particularly relevant to this study:

- *Change over time in per-capita median income*. This is perhaps the most basic measure of local well-being: whether residents are improving their economic standing or not, and if they are, to what extent. Operationalized here as percent change in median per-capita income from 1980 to 1990.
- *Change over time in national income share*. This measures the competitiveness of a metropolitan area in terms of its economic position relative to other metropolitan areas. Incomes in a region may very well be increasing while the region loses ground nationally. Metropolitan areas that are gaining income *share* may thus be considered stronger economically than those losing it. Operationalized here as percent change in the MSA's share of aggregate personal income in all MSAs (median per-capita income in each MSA times its population, summed) from 1980 to 1990.

Each of these economic outcomes has been validated by prior research. Growth in per-capita income is used so commonly as to require little comment (see Ledebur & Barnes 1992, preface; Perloff, *et al.*, 1960; Warner 1989; Duffy-Deno & Eberts 1991; Beeson 1992; McDonald 1992; Rusk 1995; Blair, Staley & Zhang 1996; and Voith 1998). The second measure, change in the region's share of national income, was most recently used by Nelson and Foster (1999) in their study of the effects of metropolitan governance structure on income growth. They argue that change in this measure is more telling than is simple change in per-capita income because it reflects the performance of each metropolitan area relative to other metropolitan areas—in other words, its economic competitiveness.

Economic inputs

Economic theory traditionally identifies as crucial inputs the following:

- factors of production—that is, labor, materials, and capital;
- space, variously defined as real estate, operating sites, location, physical access, or proximity;
- transportation with a low cost relative to the value of the goods shipped; and
- adequate public and private infrastructure, including advanced telecommunications.

Added in more recent years are less tangible inputs such as agglomeration economies and favorable regulatory and tax climates.

Factors of production: Labor. Appropriate measures may include:

- Changes in total employment should roughly parallel population growth. Too small an increase can stifle production and inflate wages, thus reducing economic growth, while too great an increase can enhance production and depress wages, reducing prosperity. The measure used here is *change in total employment in all industrial sectors, 1980 to 1990.*
- Worker productivity. Higher productivity generally raises both wages and industrial earnings, but may slow employment growth. A more general measure of the productivity of the entire economy is afforded by the ratio of value added locally to the total value of the end product: the higher this ratio, the more productive the economy. This measure is used here, calculated as the *ratio of per-capita value-added relative to per-capita value shipped for each MSA in 1982.*
- Growth in industrial earnings. Changes in industrial earnings have been viewed as a surrogate for changes in the productivity benefits of public infrastructure (Arsen 1997), and they have been used as a critical component in predicting the success of economic development programs (Blair & Kumar 1997). Changes in total output also provide a window on changes in worker productivity and structural adjustments to exogenous economic changes (Thompson 1968). Because of their evolving importance in urban economies, *changes in service-sector earnings from 1982 to 1992* are used here.
- Growth differentials among sectors. Growth in the local fire-insurance-real estate (FIRE) sector is often associated with gains in both income and employment (see, e.g., Beyers 1992, M. Levine 1995). Growth in the other four major sectors (manufacturing, retail, service and government) has produced more ambivalent results; however, innovation-based sub-sectors within manufacturing and service seem not only to enhance the prosperity of their own workers but to drive gains for workers in other sectors as well (Pollard & Storper, 1996; Kanter 1995). Conversely, an economy devoted heavily to manufacturing

may have more difficulty responding quickly to structural change, given its capital-intensive nature, thus creating an economic drag. Three measures of sectoral influence are used here: *change in manufacturing employment, 1982-1992; FIRE employment as a proportion of total employ-ment, 1990;* and *business and professional employment as a proportion of total employment, 1990.*

< Manufacturing wages. This measure may be positive or negative, depending upon circumstance. High manufacturing wages tend to be associated with unionized work environments where job growth is slow and industrial recruitment difficult. However, they also contribute to general prosperity via higher incomes and opportunities for wealth accumulation, and they may affect wage scales in other industrial sectors. Because of the ambivalence of its predictive power, this variable was not used in this study.

< Unemployment, or a measure of labor availability. High unemployment suggests labor availability, which could lead to economic expansion. However, the unemployment rate in a strong economy may also measure the *quality* of the available labor force by revealing the proportion of the adult population that is probably unemployable. This reduces its usefulness; hence, it was not used here.

< The number of workers per firm (or firms per worker). Smaller firms tend to be associated with growth industries, knowledge spillovers, adaptability, out-sourcing of routine tasks, and versatility. Larger firms, particularly in manufacturing, tend to be associated with mature industries, slower-moving bureaucracies, and high overhead. In early testing of the model, however, the number of employees per firm was found to have very little predictive power, and so it was omitted.

Materials: Material inputs have largely ceased being critical to economic prosperity, due to changes in both economic structure and business procedures. Hence, no measures of material inputs are used here.

Capital: Capital comes in three forms: financial, human, and intellectual.

< *Financial capital* has lost none of its urgency and in some industries is more critical than ever. Only a few metropolitan areas are known as venture-capital centers: New York, Boston, Los Angeles, San Francisco and, to a lesser extent, Atlanta, Chicago, Minneapolis, Houston, and Dallas. However, it seems reasonable to presume that these centers provide capital for major investments in nationally important or

growing industries. Smaller-scale venture capital is available elsewhere to underwrite the start-ups and expansions of smaller, more localized firms. The availability of capital is measured here via the amount of new industrial investment, operationalized as *per-capita new industrial investment in 1982.* A second measure of local capital is used as well: *per-capita bank deposits in 1984.*

< *Human capital* is more important than ever. Perhaps the most important measure is educational attainment, a measure of worker skill. Traditionally, the proportion of adults holding high-school diplomas has been used as the sign of a quality work force. During the last two decades, however, shifts toward advanced financial services and innovation-based manufacturing and a flattening of corporate hierarchies have increased the value of higher education. Therefore, the measure used here is the *proportion of adults who had accumulated some post-high school education in 1990.*

< *Intellectual capital:* This measure concerns the presence of R-&-D and higher education opportunities within the metropolitan area. As the economy becomes more and more knowledge-based, and as technology transfer becomes more important to business transformation and start-up, universities are increasingly providing local economic leadership (Clement 1995; Luger & Goldstein 1997). Institutions of higher learning also provide opportunities for workers to upgrade their skills. The measure used here is the *presence of universities with an enrollment in excess of 10,000 students.*

<u>*Space, transportation, and infrastructure*</u>: These three economic inputs are not operationalized in this study, for the following reasons:

< *Space* (land) and *infrastructure* are considered to be endogenous—that is, they affect locational decisions *within* the metropolitan area but not *among* metropolitan areas. As such, for both theoretical and practical reasons, their effects are assumed to be uniform across all metropolitan areas.

< *Transportation* is becoming less and less crucial as an economic input. Increasingly, each step in the production process takes place in the location best suited for that step, due to the availability of suitable labor (in terms of skill and cost), agglomerations of suppliers, and so forth. Innovations in shipping, such as inexpensive air freight, containerization, and computerized tracking, coupled with the high value-to-

weight ratio of many high-tech products, have reduced the traditional "friction" associated with long-distance transport. And although there is considerable variation in the size and service available at metropolitan airports, this is largely captured by metropolitan size variables.

Other economic inputs:

< *Regulatory climate* can certainly affect metropolitan competitiveness. However, usable indices of this variable are not yet widely available, given the complexity of regulations and their interactions. Tax rates, by comparison, are fairly straightforward, and tax indices are readily available. Moreover, tax indices capture some of the essence of regulation, because areas that levy higher taxes also often impose more stringent or complex regulations. The measure used here is an *index of property-tax burden for which the U.S. average equals 100, 1988.*

< Agglomeration economies may be measured in one of several ways: by industrial-sector clustering (location indices), by employment concentration, and by input-output analysis. Agglomeration is captured here by *proportional employment in various major industrial sectors*.

This group of variables was chosen to minimize explanatory overlap and thus maximize predictive power. As a result, some common welfare-related variables have been omitted. One is the poverty rate, which correlates strongly (negatively) with per-capita income and thus adds little explanatory power. The other is the unemployment rate, which can produce confounding results. An inspection of both the 1980 and 1990 MSA unemployment rates shows clusters of communities that were experiencing a recession at each point in time. The pattern is particularly obvious in the 1990 data because of severe economic problems in the "oil patch," limiting the data's usefulness.

Quality-of-life inputs

Quality-of-life variables fall into two broad categories: those that lend themselves to change and improvement through community decision-making, and those that do not.

The first category consists primarily of institutionally derived benefits, such as high-quality and/or low-cost health care; adequate and varied parks and open space; recreational opportunities for persons of all ages and abilities; good public (K-12) schools; opportunities for higher education; safety from environmental hazards and toxins; a low crime rate; a high infant-survival rate; the presence of unique institutions, such as the Mayo Clinic in Rochester, MN; and local provision of artistic, cultural, and popular entertainment outlets and productions, including community celebrations.

The second category includes such things as climate, including cloud cover and precipitation; terrain; waterfronts and coastlines; historical artifacts, such as unique architecture, specialized crafts, well-preserved ways of life, or cultural settings; cultural or social reputation, such as the presence of a large number of artists or single professionals; and proximity or accessibility to major metropolitan areas, particularly those with populations of one million or more, and to international destinations.

Increasingly, quality-of-life inputs are recognized as important components in an area's ability to sustain economic development and growth over the long term (Glaeser 1998; Blair & Kumar 1997; Segedy 1997; Clement 1995; Mills & McDonald 1992).

The quality-of-life measures chosen for use here are:

< *per capita serious crime (total of murder, forcible rape, robbery, aggravated assault, burglary, larceny, motor-vehicle theft, and arson), 1990;*

< *an index of health care, 1988; and*

< *the proportion of K-12 students enrolled in public schools, 1988.*

Other metropolitan characteristics

Four "structural" variables help to control for otherwise unobserved differences among metropolitan areas. Many authors stress the importance of size as a factor in economic growth and change (Perloff et al. 1960; Noyelle & Stanback 1984; Beeson 1992; Beyers 1992; Hicks & Rees 1993; Voith 1998). More recently, the size of the central city relative to the rest of the metropolitan area has gained attention (Stanback 1991; Voith 1992, 1998; Collins 1994; Rusk 1995), based on the hypothesis that a central city that controls more of the metropolitan stage should be stronger both economically and fiscally. A similar measure is elasticity, which estimates the central city's ability to capture metropolitan growth. Elasticity has been found to be a significant (albeit weak) predictor of both metropolitan population and employment growth, but not of income (Blair, Staley, & Zhang 1996).

The age of a metropolitan area can also be significant. Older metropolitan areas tend to have made a heavier investment in manufacturing infrastructure and are thus less able to adapt quickly to change (Noyelle & Stanback 1984; Mills & McDonald 1992; Nelson & Foster 1999). Older regions also may be burdened with infrastructure that is either obsolete or functionally deficient.However, average incomes tend to be higher in older areas due to the buoying effect of manufacturing wages, among other factors (Duffy-Deno & Eberts 1991; O Huallachain 1992; Thompson 1995).

The four variables used in this study are:

< *MSA age*, defined as the number of decades since the central city reached the metropolitan population threshold of 50,000, on a scale of 0 (MSAs added since 1990) to 5 (those that qualified in 1950);
< *MSA population category in 1980*, on a scale of 1 (50,000-99,999) to 5 (over one million);
< central-city population as a percentage of metropolitan population (the inclusion index) in 1980; and
< *elasticity* (Rusk 1995), on a scale of 0 (zero elasticity) to 4 ("hyperelasticity").

Census division and region were initially incorporated into the dataset to account for otherwise unidentified differences among MSAs based on national geography. However, the variables proved to be

"model-busters," for two reasons. First, the number of cases (245) was not sufficiently large to permit disaggregation into even four (regional) categories, much less nine (divisional) categories, without undermining the efficacy of the model via serious violations of statistical assumptions (the *n* for Region 4, the West, dropped to only 37). Second, data for New England (Division 1, part of Region 1) are spotty due to data collection difficulties. Use of Census region as a dummy variable also created intractable multicollinearity problems. As a result, the analysis does not look at individual regions.

Regional coordination/planning inputs

A wide variety of regional governance variables has been used to predict to such metropolitan outcomes as population growth (Foster 1993), economic prosperity (Blair, Staley & Zhang 1996), employment growth (*ibid*.), political fragmentation (Lewis 1996), housing values (Potepan 1996; Haughwout 1999), and racial and/or income disparities (DeHoog, Lowery, & Lyons 1991; Blair & Zhang 1994; Morgan & Mareschal 1999). For the most part, these variables have been fairly simple specifications, such as population per unit of government, presence of a city-county consolidation, etc.

Perhaps the most sophisticated use of regional governance variables has been made by Kathryn Foster in a series of papers on the political economy of metropolitan areas (1993, 1997, 1999). By the latest in this series, Foster and co-author Arthur C. Nelson had developed a laundry list of measures of regional *government* structure that should associate positively with income growth, of which the first six derived from Foster's 1993 work. Overall, the evidence yielded more support for the benefits of coordination and fewer units of government than for the public-choice emphasis on higher levels of competition and more fragmentation. These were the first empirical results to suggest that the debate over regionalism might not result in a clear-cut either-or decision, but might require more nuanced consideration.

In 1999, Nelson and Foster extended this research by adding three dummy variables for regional *governance* structure, one each for city-county consolidation, regional management (multicounty, multi-purpose districts), and the presence of regional water and/or sewer utilities. They found that consolidation

was associated negatively (but not significantly) with economic competitiveness, regional multipurpose districts positively (but not significantly), and utilities both positively and somewhat significantly ($p < .10$).

In essence, regional planning bodies are a particular type of regional special district. Regional planning agencies often function as the principal forum for interjurisdictional collaboration and dispute resolution, a role Foster recognizes under her rubric of "regional impulses" (1997). Moreover, regional planning can enable metropolitan communities to overcome the fragmenting effects of suburban incorporation and special-district proliferation. Regional planning agencies can also mimic the function of regional utilities by coordinating policy and operations for multiple providers. This is particularly true of MPOs. Hence, regional planning offers a suitable, perhaps superior, substitute for regional governance and fragmentation.

No measure of metropolitan planning is available from conventional data sources. As a result, a mail questionnaire was prepared to collect this information from MPOs. The Association of Metropolitan Planning Organizations (AMPO), an offshoot of NARC, annually publishes a directory of MPOs, which was used as the mailing list for this study.[1] The Dillman total design method (Dillman 1978) for conducting mail surveys was followed. MPOs covering a total of 245 MSAs and PMSAs responded, a return rate of about 75%. Virtually all respondents (243, or 99.2%) provided basic agency data and information about functions, activities, expansion/ contraction, and structure. Response rates with respect to regional economic assets and negatives were also high (241, or 96.4%). Information about economic development was slightly less forthcoming (233, or 93.2%).[2]

Two independent variables drawn from the survey are used in this study. One is *planning scope*, defined as the number of planning responsibilities assigned to the MPO. The other is an *index of economic involvement* (Kronbach's $\alpha = .64$), which combines agency responsibility for economic development with the extent to which metropolitan economic development efforts are coordinated. Based on the results found by Nelson and Foster, both planning effort and involvement in economic development are hypothesized to have positive associations with per-capita income and MSA income share.

The regression model was first run using the full national sample of MSAs and PMSAs with MPO data.

The two models predict to different dependent variables:

Model 1: Change in per capita income;
Model 2: Change in MSA income share compared to other MSAs.

Each model was also tested using each of the two predictor variables, that is, either change in per-capita income or change in total income share. The results of these analyses appear in Table 1.

Discussion

Planning scope seems somewhat better at predicting change in income *share*, while economic development effort is better at predicting change in income, although only the latter approaches significance. However, the sign on planning scope in both Models 1 and 2 is unexpected: negative rather than positive. This is inconsistent with the findings of Nelson and Foster (1999). Nonetheless, all R-squareds are statistically significant and the models account for more than 50% of the total variance in the dependents.

Change in service-sector earnings emerges as the best overall predictor of economic prosperity ($p <$ .01 in all four variants). This variable was included because of the strength of its association with total industrial earnings, but it turns out be a strong predictor of income growth as well. The two other strong control variables are the per-capita ratio of value added to value shipped, and proportion of all employment classified as FIRE (finance, insurance and real estate). The age of the MSA has a consistently negative influence, suggesting that older cities may be less competitive. As predicted, change in employment has a negative effect on income but is highly significant in increasing income share. Each of these findings is consistent with theoretical expectations and the findings of other researchers.

Table 1. Does regional planning affect regional income and income share? (Full national sample) (Standardized coefficients)

	Model 1 Change in Income	***Model 1a Change in Income Share***	***Model 2 Change in Income***	***Model 2a Change in Income Share***

Variable				
Planning scope	-.020	.012		
Involvement in economic development			-.087 ^	.023
Change in total employment	-.040	.322 ***	-.013	.298 ***
Change in service earnings only	.494 ***	.438 ***	.406 ***	.413 ***
Per capita bank deposits	-.076	-.048	-.078	-.033
Per capita ratio, value added/value shipped	.174 **	.094 *	.193 ***	.124 **
Percentage of employment in business/ professional services	-.271 **	-.056	-.193 *	-.132 ^
Percentage of employment in FIRE	.259 ***	.247 ***	.257 ***	.169 **
Change in manufacturing employment	-.139 *	-.028	-.111 ^	.047
Per capita new industrial investment	.009	.004	.031	-.036
Percentage of adults with some college education	.040	.025	.011	.028
Presence of major university(ies)	.058	.018	.102	.061
Index of property-tax burden	.243 ***	.156 ***	.200 ***	.075
Per capita crime	-.046	.016	-.059	.078
Health-care index	.074	.031	.090	.057
% of K-12 students in public schools	-.134 *	-.013	-.167 **	-.055
MSA age	-.141 *	-.147 *	-.207 **	-.206 **
MSA size category	-.107	-.083	-.076	.059
Inclusion index	-.031	.014	-.078	.020
Elasticity	-.143 *	-.032	-.038	.020
Adjusted R^2	.593	.740	.562	.683
F value of model	16.713 ***	31.221 ***	14.620 ***	23.883 ***
n	206	203	203	203

*** $p < .001$ ** $p < .01$ * $p < .05$ ^ $p < .10$

Three variables control variables prove very interesting. The first is the proportion of the work force employed in business and professional services. Given the growing importance of high-level services and the generally high wages paid to knowledge professionals, this variable would be expected to have a positive effect on income. Instead, the variable produces negative results, some of which are significant. Two forces may be at work. The first is the misperception that all business and professional services offer high-wage employment, when in fact many clerical, maintenance, and janitorial jobs pay relatively low wages. The second force is the economic position of high-paid professionals – physicians, attorneys, architects, and so on. In most locales, these types of workers do not produce for export; instead, their numbers are driven by population expansion. As a result, their wages absorb resources that might otherwise be put to more productive use – hence the negative effect on income growth.

The second interesting variable is the index of property-tax burden, which is positive and significant in

three of the four model variants. Orthodox economic theory would argue that higher taxes are a drain on economic energy. However, this finding suggests that higher taxes do have an economic payoff, probably because they support higher levels of public service and infrastructure investment, which, in turn, support more, and more efficient, economic activity. This is consistent with the findings of Haughwout (1997, 1999), Arsen (1997), and Duffy-Deno & Eberts (1991). A second, quite different theory of causality may be offered, however: that higher taxes have an inflationary effect on wages. It is also possible that causality flows in the reverse direction: It may be that communities in which incomes are relatively high are able to levy higher taxes before encountering taxpayer revolt. This would be consistent with findings that more affluent communities can tax themselves at lower rates and still raise abundant revenues.

The other interesting control variable is the proportion of K-12 students enrolled in public schools, which produces a consistently negative effect on both income growth and income share. Although the effect is significant only with respect to per-capita income, it suggests that the disproportionate selection by MPOs of public education as an economic drawback is not a coincidence. Moreover, it implies that non-public school systems may be better at turning out graduates who go on to earn above-average incomes.

Somewhat surprising, too, are some of the variables that proved to be weak predictors. In spite of the growing perception that major universities operate as economic engines, little evidence of that effect is seen here. It may be that a large university, particularly in a smaller MSA, increases the proportion of the population living at or near the poverty line (poor college students) sufficiently to cancel out any positive effect the university might have on income through its high-paying jobs, opportunities for work force improvement, and profit-enhancing technology transfer.

The remaining two quality-of-life variables, per-capita crime and the health-care index, also had no significant effect. Among the quasi-governmental variables, relative size, central-city inclusion, and elasticity all have negative effects on income. The negative effect of elasticity on income growth is also significant, confirming the findings of Blair, Staley, and Zhang (1996). However, none of the other effects are significant.

Comparisons by MSA size, income level, and growth rate

Although the characteristics of the MPOs do not vary much by size of MSA, income level, or growth rate, the economies within which they operate vary greatly. Large metropolitan areas tend to have diversified economies, while smaller areas are more likely to be specialized and hence more vulnerable to economic downturns. Affluent areas tend to have different economic bases than do poor areas, while fast-growth areas tend to be on the leading edge of economic change, unlike their slower-growth counterparts. These factors are analyzed below. (Because the index of economic-development involvement produced virtually the same results as did planning scope, these analyses focus solely on planning scope.)

MSA size: A handful of significant differences are apparent between smaller and larger MSAs, particularly in predicting change in income (Table 2). Primary among them is that planning scope, which shows no significant effect on income in either group of MSAs, shifts from a slight negative effect in smaller MSAs to a slight positive effect in larger ones.

Two economic variables are also significantly more important in predicting income change in larger MSAs: change in manufacturing employment, and the property-tax index. A third variable, public education, has a mildly positive effect in smaller MSAs, but a highly significant negative effect in the larger ones. The only variable that is significant in the smaller MSAs, but not in the larger ones, is elasticity, which continues to have a substantial negative effect on income growth.

Differences between different-sized MSAs in predicting to change in MSA income *share* are less pronounced, but two bear mention. One is the slight positive effect of business and professional employment in larger MSAs; this effect is significantly negative in smaller metropolitan areas. The other is the negative influence of public schools in larger MSAs, versus the slight positive effect in smaller ones.

Table 2. The effect of planning on change in income and income share, by MSA size (below & above median population) (Standardized coefficients)

	Smaller MSAs		Larger MSAs	
	Model 1 (Income)	*Model 2 (Income Share)*	*Model 1 (Income)*	*Model 2 (Income Share)*
Variable				
Planning scope	**-.110**	**-.023**	**.047**	**.033**
Change in total employment	**.042**	**.251 ****	**-.103**	**.541 *****
Change in service earnings only	**.609 *****	**.539 *****	**.475 *****	**.265 ****
Per capita bank deposits	**-.105**	**-.109 ^**	**-.010**	**-.025**
Per capita ratio, value added/value shipped	**.218 ****	**.047**	**.172 ***	**.151 ***
Percentage of employment in business/ professional services	**-.373 ****	**-.194 ***	**-.275 ***	**.031**
Percentage of employment in FIRE	**.179 ***	**.225 ****	**.228 ***	**.178 ***
Change in manufacturing employment	**-.040**	**-.029**	**-.224 ****	**-.094**
Per capita new industrial investment	**.020**	**-.054**	**-.066**	**-.008**
Percentage of adults with some college education	**.197**	**.210 ***	**.006**	**-.042**
Presence of major university(ies)	**-.161 ^**	**-.118 ^**	**.039**	**.020**
Index of property-tax burden	**.136**	**.112**	**.345 *****	**.193 ****
Per capita crime	**-.103**	**-.004**	**.007**	**-.002**
Health-care index	**.055**	**-.029**	**.079**	**.046**
Percentage of K-12 students in public schools	**.082**	**.042**	**-.350 *****	**-.051**
MSA age	**.031**	**-.094**	**-.195**	**-.004**
MSA size category	**.012**	**-.101**	**-.128**	**-.140**
Inclusion index	**.082**	**.062**	**-.048**	**-.014**
Elasticity	**-.221 ***	**-.110**	**-.031**	**.009**
Adjusted R^2	**.579**	**.743**	**.657**	**.762**
F value of model	**8.024 *****	**15.360 *****	**11.670 *****	**18.492 *****
n	**98**	**97**	**107**	**105**

***** *p* < .001 ** *p* < .01 * *p* < .05 ^ *p* < .10**

By income level: The differences between higher-income and lower-income communities are pronounced (Table 3). None of the coefficients on planning scope are significant, but its positive sign in both models in the higher-income MSAs is noteworthy. Even if this finding were significant, however, it would not be clear which direction causality flows: Does more extensive planning help to boost income share? or does increased income share enable more extensive planning? This question will be addressed in the section that follows.

Other differences appear as well. Per-capita new industrial investment has a negative effect on income in higher-income MSAs, but a positive effect in lower-income MSAs. This suggests that production jobs in

high-income MSAs fall somewhat below the median wage, while in low-income MSAs they lie somewhat above it. The effect of the property-tax burden is much more significant in affluent communities as well, again raising the chicken-and-egg question about the relationship between property taxes and income. In terms of the quasi-governmental variables, different factors seem to matter depending upon the income level of the MSA: Elasticity has a substantial negative effect in wealthier MSAs but an insignificant (although still negative) effect in poorer ones, while the age of the MSA has a significant negative effect in poorer MSAs and a mixed, but insignificant, effect in wealthier ones.

In predicting to change in per-capita income, it is interesting that the sign on change in total employment is positive in wealthier MSAs but negative in poorer MSAs. A similar pattern appears in

Table 3. The effect of planning on change in income and income share, by MSA income level (above and below median) (Standardized coefficients)

	Higher-Income MSAs		Lower-Income MSAs	
	Model 1 (Income)	*Model 2 (Income Share)*	*Model 1 (Income)*	*Model 2 (Income Share)*
Variable				
Planning scope	.005	.086	-.107	-.085
Change in total employment	.139	.693 ***	-.116	.103
Change in service earnings only	.447 ***	.222 **	.524 ***	.597 ***
Per capita bank deposits	-.139 ^	-.128 *	-.201 *	-.036
Per capita ratio, value added/value shipped	.192 *	.141 *	.146 ^	.070
Percentage of employment in business/ professional services	-.322 *	-.065	-.379 **	-.177 ^
Percentage of employment in FIRE	.220 *	.266 ***	.253 *	.232 *
Change in manufacturing employment	-.253 **	-.120 ^	-.069	.031
Per capita new industrial investment	-.119	-.125 *	.149 ^	.084
Percentage of adults with some college education	.086	.008	-.018	.048
Presence of major university(ies)	.092	.073	-.050	.002
Index of property-tax burden	.215 **	.100 ^	.073	.094
Per capita crime	-.116	-.116	-.001	.212 **
Health-care index	.095	.049	.141	.015
Percentage of K-12 students in public school	-.214 *	-.069	.016	.051
MSA age	-.019	.068	.214 ^	-.331 **
MSA size category	-.163	-.178 *	-.085	.069
Inclusion index	-.028	-.003	.072	.069
Elasticity	-.151 ^	-.028	-.068	-.015
Adjusted R^2	.600	.809	.512	.654
F value of model	8.660 ***	22.217 ***	6.844 ***	11.536 ***
n	98	96	107	55

*** $p < .001$ ** $p < .01$ * $p < .05$ ^ $p < .10$

predicting change in MSA income share. This suggests that lower-income MSAs are successful primarily in attracting job growth in low-wage occupations, which tend to depress the existing wage structure. For these communities, only three factors have any positive significance: change in service earnings, change in the FIRE employment ratio, and per-capita crime. The crime finding might seem odd, but a heightened crime rate may be a sign of turmoil due to changes that are leaving the most disadvantaged local residents behind in economic terms and increasing desperation and, hence, violence in poor neighborhoods.

By growth rate: Once again, significant differences appear between the two groups (Table 4). The most noteworthy is that planning scope, although non-significant, has positive effects in all instances except change in per-capita income in slow-growth MSAs. The value-added ratio has a positive effect in all instances, but it is much more significant in fast-growth MSAs than in slow-growth MSAs. Conversely, a high ratio of business/professional service employment has a larger negative effect in slow-growth MSAs than in fast-growth ones. The impact of the property-tax burden remains positive across the board, and generally is significant as well.

Public education produces highly significant negative effects in fast-growing communities, while its effects in slow-growing communities are positive, although much less noticeable. Among the quasi-governmental factors, MSA age and size have a noticeable negative effect only on faster-growing MSAs.

To summarize the findings so far:

- Planning scope appears to have no significant effect on growth in either income or income share. However, its sign switches back and forth. This suggests that it is interacting with another variable, quite probably the dependent, confounding the presence of any effect.
- Changes in service earnings and share of employment in the FIRE sector generally have significant positive effects on growth in per-capita income. Changes in service earnings and in total employment have positive effects on growth in MSA income share.
- Share of employment in the business/professional sectors generally has negative effects on both per-capita income and income share.

Table 4. The effect of planning on change in income and income share, by MSA growth rate (above and below median) (Standardized coefficients)

	Faster-Growing MSAs		Slower-Growing MSAs	
	Model 1 (Income)	*Model 2 (Income Share)*	*Model 1 (Income)*	*Model 2 (Income Share)*
Variable				
Planning scope	**.106**	**.037**	**-.116**	**.005**
Change in total employment	**.026**	**.224 ****	**-.102**	**.419 *****
Change in service earnings only	**.334 *****	**.411 *****	**.419 *****	**.344 *****
Per capita bank deposits	**-.222 ****	**-.029**	**-.027**	**-.035**
Per capita ratio, value added/value shipped	**.215 ****	**.144 ***	**.174 ^**	**.085**
Percentage of employment in business/ professional services	**-.212 ***	**-.123**	**-.363 ****	**-.063**
Percentage of employment in FIRE	**.318 ****	**.198 ***	**.417 ****	**.312 ****
Change in manufacturing employment	**-.240 ****	**-.124 ^**	**.026**	**-.154 ***
Per capita new industrial investment	**-.086**	**-.339 *****	**.109**	**.118 ^**
Percentage of adults with some college education	**.051**	**-.023**	**-.013**	**.049**
Presence of major university(ies)	**-.017**	**.053**	**.056**	**-.002**
Index of property-tax burden	**.230 ****	**.305 *****	**.275 ****	**.116**
Per capita crime	**-.132**	**.110**	**.085**	**.006**
Health-care index	**.046**	**-.085**	**.058**	**.066**
Percentage of K-12 students in public schools	**-.306 *****	**-.164 ***	**.039**	**.059**
MSA age	**-.036**	**-.150 ^**	**-.167**	**-.080**
MSA size category	**-.278 ***	**-.106**	**.060**	**-.083**
Inclusion index	**-.102**	**-.111**	**.001**	**.038**
Elasticity	**-.079**	**.033**	**-.154**	**-.130**
Adjusted R^2	**.719**	**.662**	**.593**	**.692**
F value of model	**13.930 *****	**6.046 *****	**8.739 *****	**12.687 *****
n	**98**	**97**	**102**	**100**

***** *p* < .001 ** *p* < .01 * *p* < .05 ^ *p* < .10**

- Differences between large and small MSAs, between high-income and low-income MSAs, and between fast-growing and slow-growing MSAs, are all noticeable.

Why might planning effort seem not to have much effect on economic outcomes? There are several possible answers.

Planning really does not have much effect on economic outcomes. The unstandardized coefficients for planning scope are quite small, suggesting that the benefits of regional planning are – at best – elusive and debatable. Moreover, different communities are likely to respond to regional inputs in different ways, not only because their locations, economies, sizes, levels of affluence and growth rates differ but because their

histories, cultures, political habits, leadership structures, physical settings, and other attributes differ as well. If these attributes are sufficiently diverse, their mixture would confound any effort to isolate an effect.

However, this explanation seems rather unsatisfactory. There are good reasons to believe that regional planning effort, which represents at least a propensity for some regional coordination if not its realization, boosts economic productivity in several ways: by increasing public-sector efficiency, improving regional infrastructure, addressing regional problems, streamlining some regional policies and processes, and building regional leadership and constituencies. Moreover, the urban economy itself is a regional phenomenon, so planning undertaken at a comparable scale ought to have some positive effects.

The model is not powerful enough to isolate the effect of regional planning. Although the model is adept at predicting changes in both per-capita income and MSA income share, it remains imperfect with respect to measuring meaningful quality-of-life and quasi-governmental factors. Modeling public-sector effects on economic performance is still an evolving science, and most of what is "known" is known primarily through theory and case study. Empirical studies at this scale are still rare and underdeveloped.

The independent variable "planning effort" is not the ideal measure of planning effects. The simple fact that a regional agency undertakes planning in seven topical areas does not inherently mean it is any more effective or influential than an agency that undertakes only two or three. Planning scope is thus an input measure which, like all input measures, suffers from a certain lack of relevance to actual outcomes. Moreover, there is often a disjuncture between what plans say and what planners do, and between what planners say they do and what actually takes place in political and financial arenas. More definitive measures might include but-for tests, measures of plan implementation, and consideration of alternate investment scenarios, among others. At present, much of the data needed to create such measures does not exist; moreover, methodological and level-of-effort issues must be addressed. However, incorporating additional measures of effort, such as proportion of plan recommendations implemented (perhaps by relevant topical area), would help to strengthen and refine the measure used here.

The effect of planning is indirect. Regional planning may not operate directly on economic outcomes, except as it is aimed directly at economic development, and perhaps not even then. Its effect on the economy may in fact be mediated through growth management, transportation networks, effective airport zoning, wise infrastructure investment, and other activities. Its effect may also depend, even less directly, on the civic qualities it represents, such as leadership, cooperativeness, coordination, mutuality of interest, and institutional capacity. Thus, isolating the effect of planning alone is a daunting task.

One means of delving more deeply into the relationship between planning scope and changes in income measures is via two-stage least-squares regression. This procedure can help to better isolate and define complex relationships between independent and dependent variables. It seems especially relevant in this situation, given the mixed signs on planning scope and its varying levels of significance. It is strongly possible that a fifth explanation for the findings is in fact the correct one: that planning scope and income interact. This is the focus of the next section.

How Do Planning Scope and Income Change Interact?

The goal is to identify variables that predict to only one of the key variables – that is, instrumental variables that predict only to planning scope or only to change in income or income share. Figures 2 and 3 show how the use of instrumentals can strengthen linkages and clarify patterns of causality.

Figure 2. Empirical results

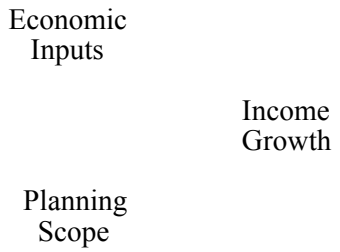
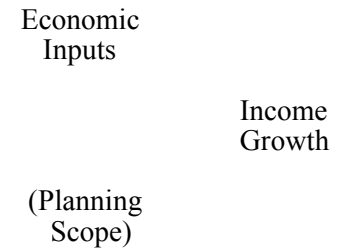


Figure 3. Predictive model using instrumentals



Two variables are used in this section to substitute for planning scope, and three each are used to substitute for change in per-capita income and change in MSA income share:

- In place of planning scope: the state's infant-mortality ranking, and a numerical variable signifying the relationship between the geographic coverage of the MPO and the Census-defined Metropolitan Statistical Area (less than the full MSA, the same area as the MSA, or larger than the MSA).
- In place of change in per-capita income: change in service earnings; the proportion of total employ-ment in business/professional-services; and the proportion of total employment within the FIRE sector.
- In place of change in MSA income share: change in service earnings; change in total employment; and the proportion of total employment within the FIRE sector.

The two variables chosen to substitute for planning scope might seem a bit odd at first glance, particularly the infant mortality rate. Intuitively, it would seem that infant mortality should be related to income – that is, higher incomes, or greater increases in income, would correlate with lower infant mortality rates. This is not the case. Infant mortality in fact correlates strongly with *educational attainment*, which has a rather confused relationship with income levels and income change. In fact, the correlation coefficient for (infant mortality rate) * (change in per-capita income) is a meager .016.

Table 6 presents an analysis of these transformations, showing how the instrumental variables predict to each of the variables of interest. In each instance, the instrumental variables account for a significant portion of the variance in the target variable, even if this portion is fairly small, while the reverse is not true. (Even though the income-related instrumental variables can predict to planning scope, less than three percent of the total variance is explained.) Thus these variables can safely be considered exogenous with respect to planning. Similarly, the instrumental variables chosen as substitutes for planning scope – infant mortality rate and area of the MPO relative to the MSA – are unable to account for any portion of the variance in either change in per-capita income or change in MSA income share, and so they may be considered exogenous with respect to income.

Table 6. Instrumental predictions to planning scope, change in income, and change in income share

Instrumentals	*Variable being substituted for*	*Variable being predicted*	R^2	*F .*
Infant mortality rate MPO coverage area	Planning scope	Planning scope	.042	6.268 **
Infant mortality rate MPO coverage area	Planning scope	Change in income	-.008	.057
Infant mortality rate MPO coverage area	Planning scope	Change in MSA income share	-004	.479
Change in service earnings Business/professional share FIRE share	Change in income	Change in income	.356	42.641 ***
Change in service earnings Business/professional share FIRE share	Change in income	Planning scope	.028	3.152 *
Change in service earnings Change in total employment FIRE share	Change in MSA income share	Change in MSA income share	.637	129.770 ***
Change in service earnings Change in total employment FIRE share	Change in MSA income share	Planning scope	-.002	.851

*** $p < .001$ ** $p < .01$ * $p < .05$ ^ $p < .10$

Two new models, 3 and 4, will be tested. Model 3 uses the substitute variable for change in per-capita income, and Model 4 the substitute variable for change in MSA income share, to predict planning scope. The expectation is that some significant results will accrue in both the original models and the new ones, demonstrating that the relationship between the income growth and planning scope is indeed bi-directional. The results produced by both sets of models for the full national sample are displayed in Table 7. A brief comparison of the first two columns in this table with the first two columns in Table 1 reveals that the results of using the original variables and their substitutes are highly similar, except for minor variations in significance level. The only noteworthy exceptions are the coefficients on planning scope, which are now uniformly positive and significant as originally predicted. Equally meaningful is the significant coefficient

Table 7. Testing the effect of change in income and in income share on the scope of planning by MPOs (national sample) (Standardized coefficients)

	Planning scope → changes in income		*Changes in income → planning scope*	
Variable	***Model 1***	***Model 2***	***Model 3***	***Model 4***
Planning substitute	.101 ^	.095 *		
Income-change substitute			-.259 **	
Income share-change substitute				-.219
Change in total employment	-.042	.322 ***	.007	
Change in service earnings only	.530 ***	.468 ***		
Per capita bank deposits	-.064	-.036	.009	.058
Per capita ratio, value added/value shipped	.186 ***	.106 *	.029	.270
Percentage of employment in business/ professional services	-.307 ***	-.085		.678
Percentage of employment in FIRE	.256 ***	.236 ***		
Change in manufacturing employment	-.158 **	-.042	.139 ^	1.738 ^
Per capita new industrial investment	.003	-.001	.050	.973
Percentage of adults with some college education	.033	.018	.083	.545
Presence of major university(ies)	.072	.028	-.062	-.763
Index of property-tax burden	.204 ***	.122 **	.038	.656
Per capita crime	-.044	-.018	.006	-.152
Health-care index	.080	.038	-.034	-.487
Percentage of K-12 students in public schools	-.140 *	-.017	.020	.619
MSA age	-.146 *	-.142 *	.255 *	2.384 *
MSA size category	-.098	-.071	.121	.914
Inclusion index	-.031	.013	-.079	-.656
Elasticity	-.145 *	-.036	-.050	-.491
Adjusted R^2	.600	.747	.081	.063
F value of model	17.207 ***	32.339 ***	2.132 **	1.863 *
n	206	203	206	206

*** $p < .001$ ** $p < .01$ * $p < .05$ ^ $p < .10$

on the income-change substitute in Model 3. In fact, the results originally produced by Models 1 and 2 do obscure a two-way relationship between income change and planning scope.

The findings for the various breakouts used earlier in this chapter bear out these observations (tables do not appear here but are available from the author). Due to the smaller sample sizes, these results deviate somewhat more from the original results than do the full national results. Nonetheless, the patterns of significance and effect hold up fairly well in spite of the changes in the predictor variables.

In short, the new results reveal that:

- The scope of regional planning has a generally positive effect on change in per-capita income, and a consistently positive effect on change in MSA income share.
- Changes in both per-capita income and MSA income share have consistently negative effects on planning scope, which in some instances are significant or approaching significance: in the larger MSAs, and in *both* highest- and lowest-income MSAs. This last finding further provides evidence that income and planning are interrelated, and that increases in regional planning effort are instigated by more than one causality.

Conclusion

Despite its limitations, and the small size of the planning effect, the ability of this model to pinpoint any significance to planning scope *at all* is exciting. The argument could be made that there is no reason whatsoever for the model, which was constructed relying on economic and economic-development theory rather than planning theory *per se*, to identify a planning effect. *And yet it does*. These results strongly suggest that regional planning does, in fact, affect economic outcomes in measurable ways. The model used here represents an excellent starting point for further investigation of this relationship.

Some of the most important reasons for expanding regional planning efforts have less to do with economics than with social or political change. These reasons are captured only fleetingly in the model used here and no doubt account for the lion's share of the unexplained variance in predictions to planning scope. Nonetheless, it is apparent that changes in income and competitiveness do affect the scope of regional planning, a conclusion with important ramifications for policy makers and advocates of regional cooperation.

[1] Although the AMPO directory is undoubtedly the best available source of information on MPOs, no listings were included in 1999 for twelve MSAs and PMSAs: Mobile and Tuscaloosa, AL; Yuba City, CA; Danbury, CT; Peoria-Pekin, IL; Elkhart, IN; New Bedford, MA; Atlantic-Cape May and Vineland-Millville-Bridgeton, NJ; Jamestown, NY; Enid, OK; and Beaumont-Port Arthur, TX. These twelve metropolitan areas therefore were not used in this study.

[2] Although the questionnaire was designed to minimize testing effects, such an effect occurred in at least one known instance. The respondent from a regional planning agency/MPO for a sizable metropolitan area, with which the researcher happened to have been well acquainted, reported that the agency is responsible for a wide variety of planning functions, including not just transportation and air quality but land use, growth management, solid waste, and others. The key here is the term *responsible*. Inevitably, planning for transportation and air quality entails some consideration of land use and other facets of planning practice. However, this agency is definitely not "responsible" for policy-making in most of these other areas. It may be that the respondent, who knew the researcher, was trying to present his/her agency in the most favorable light possible.

A different problem arose from respondents who did not feel qualified or sufficiently knowledgeable to answer certain questions. Because many MPOs are narrowly constituted and charged with specific functional tasks, some respondents commented that they do not know enough about the economic development process in their metropolitan area to make intelligent comments about it. This is not a surprising occurrence in the use of self-reporting. Nor is the willingness to answer all the questions that are asked, even if one's actual knowledge is fuzzy or incomplete. Nonetheless, in this instance, as in many others, self-reporting is still the best way to begin learning about what is happening in communities across the country. As this discussion has made clear, at present there is little systematic information about regional planning or operations. What we know tends to be about the largest cities and metropolitan areas, such as New York, Los Angeles, and Chicago, or about the anomalous communities that have made some kind of regionalism work, such as Portland and Minneapolis/St. Paul. Self-reporting is the only way to build a data set that can be used to evaluate patterns and trends across a broad cross-section of urban regions. There is also reason to assume that the two types of respondents will cancel each other out.

References

Arsen, David. 1997. Is there really an infrastructure/economic link? In Bingham, Richard D. & Robert Mier, eds. *Dilemmas of Urban Economic Development: Issues in Theory and Practice*, 82-103. Thousand Oaks, CA: Sage.

Association of Metropolitan Planning Organizations. 1999. *1999 Profiles of Metropolitan Planning Organizations*. Washington, DC: National Association of Regional Councils.

Barnes, William R. & Larry C. Ledebur. 1998. *The New Regional Economies: The U.S. Common Market and the Global Economy.* Thousand Oaks, CA: Sage.

Beeson, Patricia E. 1992. Agglomeration economies and productivity growth. In Mills, Edwin S., John F. McDonald, & Mary L. McLean, eds., *Sources of Metropolitan Growth*, 19-35. New Brunswick, NJ: Center for Urban Policy Research.

Beyers, William B. 1992. Producer services and metropolitan growth and development. In Mills, Edwin S., John F. McDonald, & Mary L. McLeans, eds., *Sources of Metropolitan Growth*, 125-146. New Brunswick, NJ: Center For Urban Policy Research.

Blair, John P., Samuel R. Staley, & Zhongcai Zhang. 1996. The central city elasticity hypothesis: A critical appraisal Of Rusk's theory of urban development. *Journal of the American Planning Association* 62(3): 345-353.

Blair, John P. & Rishi Kumar. 1997. Is local economic development a zero-sum game? In Bingham, Richard D. & Robert Mier, eds. , *Dilemmas of Urban Economic Development: Issues in Theory and Practice*, 82-103. Thousand Oaks, CA: Sage.

Bollens, Scott. 1997. Fragments of regionalism: The limits of Southern California governance. *Journal of Urban Affairs* 19(1): 105-122.

Boyer, Rick & David Savageau. 1989. *Places Rated Almanac*. New York, NY: Prentice Hall.

Clement, Norris C. 1995. Local responses to globalization and regional economic integration. In Kresl, Peter Karl & Gary Gappert eds., *North American Cities and the Global Economy: Challenges and Opportunities*, 133-149. Thousand Oaks, CA: Sage.

Collins, David A. 1994. Urban governmental inclusion and city-suburban disparities. Paper presented at the annual meeting of the Urban Affairs Association, March.

DeHoog, Ruth Hoogland, David Lowery, and William E. Lyons. 1991. Metropolitan fragmentation and suburban ghettos. *Journal of Urban Affairs* 13(4): 479-493.

Dillman, Don A. 1978. *Mail and Telephone Surveys: The Total Design Method*. New York, NY: John Wiley & Sons.

Dodge, William R. Regional Excellence: *Governing Together to Compete Globally and Flourish Locally*. Washington, DC: National League of Cities.

Duffy-Deno, Kevin T. & Randall W. Eberts. 1991. Public infrastructure and regional economic development: A simultaneous equations approach. *Journal of Urban Economics* 30: 329-343.

Edwards, Patricia K. & James R. Bohland. 1991. Reform and economic development: Attitudinal dimensions of metropolitan consolidation. *Journal of Urban Affairs* 13(4): 461-478.

Foster, Kathryn A. 1993. Exploring the links between political structure and metropolitan growth. *Political Geography* 12(6): 523-547.

_____. 1997. Regional impulses. *Journal of Urban Affairs* 19(4): 375-403.

Glaeser, Edward L. 1998. Are cities dying? *Journal of Economic Perspectives* 12(2): 139-160.

Haughwout, Andrew F. 1997. Central city infrastructure investment and suburban house values. *Regional Science and Urban Economics* 27: 199-215.

_____. 1999. Regional fiscal cooperation in metropolitan areas: An exploration. *Journal of Policy Analysis and Management* 18(4): 579-600.

Hershberg, Theodore. 1996. Regional cooperation: Strategies and incentives for global competitiveness and urban reform. *National Civic Review* 85(2): 25-30.

Hicks, Donald A. & John Rees. 1993. Cities and beyond: A new look at the nation's urban economy. In Sommer, Jack & Donald A. Hicks, eds., *Rediscovering Urban America: Perspectives on the 1980s*, Chapter 2. Washington, DC: Office of Policy Development & Research, U.S. Department of Housing and Urban Development.

Jacobs, Jane. 1984. *Cities and the Wealth of Nations: Principles of Economic Life*. New York, NY: Random House.

Kanter, Rosabeth Moss. 1995. *World Class: Thriving Locally in the Global Economy*. New York, NY: Touchstone/ Simon & Schuster.

Levine, Mark V. 1995. Globalization and wage polarization in U.S. and Canadian cities: Does public policy make a Difference? In Kresl, Peter Karl & Gary Gappert, eds*., North American Cities and the Global Economy: Challenges and Opportunities*, 89-111. Thousand Oaks, CA: Sage.

Lewis, Paul G. 1996. *Shaping Suburbia: How Political Institutions Organize Urban Development*. Pittsburgh, PA: University of Pittsburgh Press.
Luger, Michael & Harvey A. Goldstein. 1997. What is the role of public universities in regional economic development? In Bingham, Richard D. & Robert Mier, eds., *Dilemmas of Urban Economic Development: Issues in Theory and Practice*, 104-134. Thousand Oaks, CA: Sage.
Mills, Edwin S. & John F. McDonald. 1992. Editors' introduction. In Mills, Edwin S., John F. McDonald, & Mary L. McLean, eds., *Sources of Metropolitan Growth*, xiii-xxv. New Brunswick, NJ: Center for Urban Policy Research.
Morgan, David R. and Patrice Mareschal. 1999. Central-city/suburban inequality and metropolitan political fragmentation. *Urban Affairs Review* 34(4): 578-595.
Mumphrey, Anthony J. & Krishna M. Akundi. 1998. The suburban dependency hypothesis, reconsidered. *Journal of Planning Literature* 13(2): 147-157.
Narusis, Marija J. 1997. *SPSS Professional Statistics 7.5*. Chicago, IL: SPSS, Inc.
Nelson, Arthur C. and Kathryn A. Foster. 1999. Metropolitan governance structure and income growth. *Journal of Urban Affairs* 21(3): 309-324.
Niskanen, William A. 1988. Protecting citizens through vigorous competition and limited cooperation. In Advisory Commission on Intergovernmental Relations (ACIR*), Interjurisdictional Competition in the Federal System: A Roundtable Discussion*, 13-14. Washington, DC: ACIR.
Noyelle, Thierry J. & Thomas M. Stanback, Jr. 1984. *The Economic Transformation of American Cities*. Totowa, NJ: Rowman and Allanheld.
Ohmae, Kenichi. 1995. *The End of the Nation-State: The Rise of Regional Economics*. New York, NY: The Free Press.
'O Hullachain, Breandan. 1992. Economic structure and growth of metropolitan areas. In Mills, Edwin S., John F. McDonald & Mary L. McLeans, eds., *Sources of Metropolitan Growth*, 51-85. New Brunswick, NJ: Center for Urban Policy Research.
Peirce, Neal R. with Curtis W. Johnson & John Stuart Hall. 1993. *Citistates: How Urban American Can Prosper in a Competitive World*. Washington, DC: Seven Locks Press.
Perloff, Harvey S., Edgar S. Dunn, Jr., Eric E. Lampard, & Richard F. Muth. 1960. *Regions, Resources, and Economic Growth*. Baltimore, MD: The Johns Hopkins Press, for Resources for the Future, Inc.
Pollard, Jane & Michael Storper. 1996. A tale of twelve cities: Metropolitan employment change in dynamic industries in the 1980s. *Economic Geography* 72: 1-22.
Potepan, Michael J. 1996. Explaining intermetropolitan variation in housing prices, rents, and land prices. *Real Estate Economics* 24(2): 219-245.
Rusk, David. 1995. *Cities Without Suburbs*, 2nd ed. Washington, DC: The Woodrow Wilson Center Press.
Sassen, Saskia. 1994. *Cities in a World Economy*. Thousand Oaks, CA: Pine Forge Press.
Savitch, H.V., David Collines, Daniel Sanders, & John P. Markham. 1993. Ties that bind: Central cities, suburbs, and the new metropolitan region. *Economic Development Quarterly* 7(4): 341-357.
Segedy, James A. 1997. How important is "quality of life" in location decisions and local economic development? In Bingham, Richard D. & Robert Mier, eds., *Dilemmas of Urban Economic Development: Issues in Theory and Practice*, 56-73. Thousand Oaks, CA: Sage.
Stanback, Thomas M., Jr. 1991. *The New Suburbanization: Challenge to the Central City*. Boulder, CO: Westview Press.
Thompson, Wilbur. 1968. Internal and external factors in the development of urban economies. In Perloff, Harvey S. & Lowdon Wingo, Jr*., Issues in Urban Economics*, 43-62. Baltimore, MD: The Johns Hopkins Press, for Resources for the Future, Inc.
_____. 1995. Introduction: Urban economics in the global age. In Kresl, Peter Karl & Gary Gappert, eds*., North American Cities and the Global Economy: Challenges and Opportunities*, 1-17. Thousand Oaks, CA: Sage.
Voith, Richard. 1992. City and suburban growth: Substitutes or complements? *Business Review, Federal Reserve Bank of Philadelphia* Sept/Oct: 21-33.
_____. Do suburbs need cities? *Journal of Regional Science* 38(3): 445-464.
Warner, Paul D. 1989. Alternative strategies for economic development: Evidence from southern metropolitan areas. Urban Affairs Quarterly 24(3): 389-411.