Evolving structures and challenges of metropolitan regions.

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Metropolitan regions, whether growing or declining, face serious strategic issues in the arenas of economic development, infrastructure, environmental protection, and social equity. While these issues contribute to the argument favoring regional governance, actual solutions with the capacity and legitimacy to work remain elusive.

In 1930 the National Civic League published a volume examining the challenges of metropolitan governance.(n1) Over the intervening decades governance practices have evolved, but so have the challenges. Modern regions are not merely larger; their economic, social and political structures are significantly more complex.

This is the first installment of a four part series of articles examining the nature of metropolitan regions and the governance challenges they present today. Here, we examine the changing structure of regions, focusing on the interaction of spatial order, technology, and economy. The second article reviews the evolution of regional governance efforts from the 19th century through the present. Part three analyzes emerging forms of regional governance now appearing around the U.S. The last part of the series considers how, based on emerging efforts, an effective form of regional governance might be structured.

The character of metropolitan regions, in particular the operation of their economies, has evolved significantly over the course of the last century and a half. Where regionalism in the past was concerned with maintaining the central city's hegemony in the region's economy, today the challenge is to make the interconnected economies of all communities in the metropolis competitive in a global marketplace.

The values that divide city and suburb remain and have, if anything, become more polarized. But if both are to thrive they must develop new ways of working together on issues as diverse as human service delivery, environmental protection, and work force competitiveness.
To do less, in the words of Buckminster Fuller, would be to race into the future with eyes on the rear-view mirror.

**PHILADELPHIA STORY**

Although unique in many respects, the Philadelphia region provides important insights into how metropolitan areas have evolved. In the middle of the 19th century, Philadelphia's corporate limits still were confined to the two square miles of William Penn's plan. But urbanization had expanded significantly beyond these boundaries, including some of the country's largest municipalities. In 1854, the state legislature—over the protests of several suburban jurisdictions—expanded the city through consolidation with Philadelphia County. Through that one act, the city increased its territory 70-fold and quadrupled its population.

Justifications for this expansion included a desire to achieve greater economy of service delivery, especially police protection, and improved coordination of infrastructure development, notably water. But it also was driven by concerns over periodic riots in immigrant quarters. Images of a restless working class combined with declining population could erode the city's competitive position, undermining the state's economy as a whole.

Consolidation gave Philadelphia room to grow, but by the end of the First World War the rapid expansion of personal automobile ownership had pushed the region's population beyond the city-county limits, and Philadelphia was losing population relative to its suburbs. Despite gentrification of many inner-city neighborhoods, the trend toward depopulation continues. Today the city's share of the region's population is roughly back to where it was before the great annexation.

By the 1960s it was clear not only that people were choosing to live in the suburbs, but that jobs had followed them. Dominant commuting patterns were shifting from suburb-to-central city, to inter-suburban. For an increasing number of people in the metro area, the fortunes of the central city seemed irrelevant to their livelihood. But this perception belied larger trends, clearly evident a decade later in a precipitous decline of heavy manufacturing.

Between 1978 and 1986 the Philadelphia region lost almost 17 percent of its manufacturing jobs. At first this decline appeared to be part of a movement of jobs and population to the sunbelt, but by the mid-1980s it was clear that other factors were transforming the underlying structure of the region's economy, as well as that of the nation. Losses in manufacturing were not uniform, but concentrated in the production of durable goods. By contrast, manufacturing of specialized nondurable goods—notably in printing, medical products, pharmaceuticals, and electronics—was generating more jobs, though not enough to offset the loss.

The more significant area of growth was in services. In the mid-1980s producer services were growing at almost five percent a year, with legal services expanding by more than 8.5 percent. Health care alone accounted for ten percent of the region's jobs. The area's economy had become post-industrial.

Interdependencies among central cities and their suburbs have become more complex through this latest economic transformation. In 1990, 15 percent of suburban residents came into the city to work, one-third of the city's labor force; one-fifth of city's residents commuted
to jobs in the suburbs. Houses along commuter lines fetched premium prices. (n3)

The scientific and cultural facilities of the region are overwhelmingly concentrated in the central city, not to mention the Philadelphia Phillies. But blacks and immigrant groups also are overwhelmingly concentrated in the city, as are areas of greatest poverty and crime.

The city's current destiny, as its fortunes in the past, depend on understanding the economic forces shaping it, and developing both the will and the capacity to remain competitive. In this effort, observes Ted Hershberg, executive director of the Center for Greater Philadelphia, "the suburbs cannot be hermetically sealed-off from the city or the world. The future standard of living of the havevs will be determined to a significant extent by the productivity of the children of the have-nots." (n4)

THE DUAL ECONOMY OF REGIONS
The changing fortunes of Philadelphia illustrate how metropolitan regions in the United States have evolved through three distinct, though overlapping, phases. At first, regions were economically dominated by their central cities, resulting in concentric rings of settlement and radiating corridors of commuting (Figure 1). Regions later evolved into polycentric or multi-nucleated structures, with economic activities located in several specialized centers, both within and outside the central city, concentrated along transportation corridors. Finally, the current post-industrial pattern emerged, in which economic activities are even more spatially dispersed, yet more complexly integrated through communication and transportation networks.

Each of these patterns is an expression of two distinct but highly interdependent sets of economic forces. First, the shape of regions is the result of economic competition in the production of export goods and services. The term "export," as used here, does not refer to things sent abroad, but to those consumed outside of the community and/or region in which they were produced. Whereas goods and services produced and consumed within the same community or region constitute, in effect, a barter exchange from which there is no net gain, those exported potentially bring a greater return, and hence support economic expansion.

There is another way in which regional economies grow, and that is by developing a capacity to replace imported goods and services with those produced internally. This enables more of the capital generated in a region to remain there. Regions, however, do not hold on to this increased wealth, but shift consumption to other imports. As Jane Jacobs surmised in Cities and the Wealth of Nations, "an import-replacing city does not, upon replacing former imports, import less than it otherwise would, but shifts to other purchases in lieu of what it no longer needs from the outside. Economic life on the whole has expanded to the extent that the import-replacing city has everything it formerly had, plus its complement of new and different imports." (n5)

In addition to the influence that the export or exogeneous economy has on a region, its organization and growth are simultaneously determined by how its residents choose to spend their income. Economists and geographers are especially interested in where people choose to live and how much of their time they are willing to spend commuting. As transportation improves, people translate the same commuting time into greater distance, providing them access to a wider choice of housing locations and greater discretion in choosing their neighbors.
These two sets of economic forces--one concerned with earning and the other with spending--are highly interdependent. A region with a vigorous export economy will have more capital to distribute in the form of consumer spending, but the way people choose to consume will simultaneously affect how efficient they are in the activities associated with their export economy.

All this is straightforward, but regional dynamics grow more complex when forces in the economy change and the residents of a region must determine what is happening and how they should respond. Somehow the black box called the "market" is supposed to produce this awareness, but inside the box there must be real lines of communication between people, allowing them to perceive change, organize resources, and act. For want of a better phrase, this collective mechanism can be called the "civic infrastructure" of the region. Although it is critically important to understand more about what is inside the black box, the present focus is on the changing structure of regions, the forces producing that change, and the challenges they present for the governance of regions.

REGIONAL STRUCTURE AND THE EVOLVING EXPORT ECONOMY
Initially, the economic foundation of monocentric city-regions rested on trading commodities which were drawn from a vast hinterland. Trade depended significantly on face-to-face transactions, and close proximity of warehousing with transportation. With the arrival of industrialization, the economic base expanded to include mass production of goods. Consequently, to a greater extent than previously, the exercise of adding value to goods took place in cities. This was not the case originally, since mass production, dependent on water-powered machinery, favored rural locations. However, conversion to steam, which was more reliable and powerful, favored cities, whose populations grew with remarkable speed during the second half of the 19th century.

It is worth noting that even with the expansion of economic base from trade to manufacturing, the cities comprised by the nation's urban system remained essentially unchanged. This suggests that the regional processes of export competition and import replacement are highly dependent on the entrepreneurial capacities of regional populations--part of the stuff in the black box. This is not to suggest that locational advantage and availability of natural resources are inconsequential, but to recognize that in the process of adding value to goods and services, human capital is the most essential component.

The expanding economic base of regions, combined with the veritable explosion of their populations, favored a shift from a monocentric to a polycentric pattern. One of the first manifestations of this transformation was in the shift from water to rail transportation. Trains required yards, factories required sidings, and manufacturing districts began to move where open space was more plentiful. At first, large, specialized industrial districts developed within cities, but competition for land soon favored establishment of districts at the central city's boundaries, and then beyond its limits. This dispersion accelerated after the First World War, as the movement of goods shifted from rail to truck. Despite the change of modes, production and distribution efficiencies continued to favor industrial concentration along corridors, especially those connecting cities.

In part, the polycentric organization of regions is an expression of the maturation of industrial production. As the manufacture of goods becomes more routinized, it is easier to remove the capital plant from the concentration of support specializations available in the core city.
Rather than occupying expensive land and competing for labor, production can move to where both land and labor are cheaper. At the same time, less congested locations with good transportation access reduce distribution costs. The same search for efficiency justifies decentralization of routinized aspects of service delivery but, in this case, improved communication technology is essential. A downtown corporate headquarters, for example, can move its back office operations to less expensive suburban space if it can maintain instant communications with employees. The export economy of regions is always dependent on the capacity of businesses to control transactions while reducing their costs. To the extent that control is maintained through improved communications, locational decisions are free to respond to labor and land efficiencies.

But if improved transportation and communications allowed production functions to be decentralized throughout the region, further improvements permit location to become even more footloose. Indeed, when communications become instantaneous and global--and when the most valued products are small and transportable via wide--bodied jets and sea / rail / truck containerized carriers-cheap land in relative proximity to markets becomes less significant than cheap labor wherever it can be found.

It did not take long for this new potential to transform the economy of regions. The manufacture of durable goods, which had first moved to the suburbs in search of cheaper land, and then to rural regions in search of cheaper labor, also began relocating abroad. The "leather district" of Boston used to be a center for shoe manufacturing. By the 1920s this industry had migrated northward, farther into New England. Today, the centers of shoe manufacturing are abroad.

The City of Philadelphia, it will be recalled, lost 17 percent of its manufacturing jobs between 1978 and 1984. Between 1970 and 1980, Boston lost 62,500 manufacturing jobs; Chicago suffered a loss of almost 119,000 jobs in this sector; Detroit, almost 90,000; and New York City, 171,500. From a regional perspective, some central-city losses in manufacturing were offset by growth of this sector in the suburbs. During this period the suburbs of Boston and Chicago gained almost twice as many blue collar jobs as their central cities lost. But suburban job growth in Cleveland made up for only two-thirds of the blue collar jobs lost; in Detroit the suburbs compensated for only one-third of the loss; and in New York, for less than 16 percent. Inter-regionally, significant losses can be attributed to locational shifts from the Frost belt to the Sunbelt. But overall the nation's economy was clearly de-industrializing.

Again, the Philadelphia story suggests that manufacturing remains an important part of the nation's economy, but in many regions it is shifting from large durable goods to specialized products. Moreover, even taking intra- and inter-regional locational shifts into consideration, the total distribution of U.S. employment in manufacturing has been declining. In 1959, 31.7 percent of U.S. employment was in manufacturing. In 1976, it had fallen to 22.9 percent. Deindustrialization continued throughout the 1980s. Economic geographers Don Hicks and John Rees observe that "throughout the U.S. urban system, metro regions had either moved from slow growth to absolute decline, or were shedding manufacturing and mining employment at an accelerated rate."(n8)

In contrast with the decline in manufacturing, service sector employment has grown significantly. In 1959, for example, corporate-based services constituted 10.3 percent of all U.S. employ meet, rising to 14.7 percent by 1976. Two other service based sectors also saw
significant growth: nonprofit employment, which rose from 3.5 to 6.5 percent; and government, which increased from 16.3 to 19.5 percent. (n9) During the 1970s the service sector of the economy grew by 32 percent, maintaining almost the same rate throughout the 1980s. This shifting economic base is especially dramatic in central cities, which experienced rebound during the 1980s. Both New York and Chicago, for example, gained more new jobs in the finance and service sectors than they lost in manufacturing. (n10)

The various shifts and transformations defining the post-industrial economy underlie a new and more complex interdependency among centers within metropolitan regions. On the one hand, the concentration of highly specialized services in central cities--especially in finance and law--support critical control functions needed by modern corporations. On the other hand, the types of innovative/entrepreneurial activities that are essential to the import-replacing function of regions no longer are occurring primarily in central cities, as amply illustrated in the role being played by high-tech suburban corridors, like Silicon Valley. But it is not just central cities and suburban municipalities that are drawn into new interdependencies. Suburbs depend increasingly on each other for collective economic competitiveness.

**CONSUMER DECISIONS AND REGIONAL STRUCTURE**

The changing structure of regional export economies helps explain the geographic transformation of regions from a monocentric, to a polycentric and, now, to a network-like pattern. But the export economics alone do not give rise to these forms. Rather, they are the result of interaction with another set of forces driving the consumer economy.

Often it is assumed that people move to where jobs are. Consequently, business location decisions determine regional structure. But it also is clear that jobs follow population. Moreover, residential location preferences prompt the expansion of infrastructure (roads, water, sewage, etc.), as well as the proliferation of local governments.

Geographer Brian Berry suggests that the values that underlie residential location preferences have been fairly constant throughout U.S. history. (n11) Indeed, they were identified over 200 years ago in de Crevecoeur's Letters from an American Farmer. "Foremost among the national characteristics perceived by Crevecoeur," Berry summarizes, "was a love of newness. Second was the overwhelming desire to be near to nature. Freedom to move was essential if goals were to be realized, and individualism was basic to the self-made man's pursuit of his goals."

Among the early and consistent manifestations of these values has been deconcentration of urban populations. People move out of centers of concentration to places where they can enjoy newness and nature. Cities have maintained their population base primarily by expanding territory; and when they no longer can annex new territory, cities inevitably lose population. (n12) The outward expansion of population leaves those who are less mobile--either by choice, exclusionary policies, or lack of resources--ever more concentrated in cities. The latest manifestation of this process is the emergence of an urban underclass: concentrations of impoverished minority households, without access even to entry level jobs.

Many of the same transportation and communication technologies that supported centralized and concentrated development of business locations in monocentric city-regions also allowed residential settlement to move out and deconcentrate. Moreover, an expanded range of
residential opportunities supported greater differentiation of place by income. A shortening work day and invention of the weekend left more time for commuting and even greater spatial dispersion for a growing middle class.

By the 1920s monocentric regionalism was clearly being displaced by a polycentric pattern. Again, the technological innovations that supported greater dispersion of industrial locations also expanded residential choice. Robert Fishman, a historian of suburbanization, concludes that "transportation was the crucial innovation. But roads and autos could not have achieved their full revolutionary impact without the creation of several other important new networks of decentralization: electricity, telecommunications, mass-market retailing, and new modes of corporate management."(n13)

Factors giving rise to polycentrism accelerated after the Second World War, notably as a result of public policies that supported massive highway and other infrastructure construction projects, and which made low-interest, federally guaranteed mortgages available. Again, cities that could not expand their territory saw accelerating population decline and, with it, a reduced tax base (Figure 2).(n14)

By the 1970s, Baby Boomers were beginning to swell the labor force. In 1980 they represented over 40 percent of those employed. Baby Boomers not only increased the size of the work force, they changed its composition. Transportation analyst Alan Pisarski observes that "in 1950 about one third of working-age women were in the labor force. By 1985 they exceeded 44 percent."(n15) The influx of women helped produce labor force growth exceeding population growth, especially in rapidly growing metropolitan areas. Consequently, commuting--both in terms of numbers of commuters and vehicle miles traveled--accelerated rapidly. Between 1960 and 1980 the proportion of two-vehicle households grew by 172 percent. But perhaps more significant was the change in where commuters were travelling. The number of trips from suburbs-to-central city had fallen behind central city-to-central city trips, and both were well behind growth of suburb to-suburb commuting, which constituted 58 percent of all work trips. The persistent search for newness and closeness to nature produced especially dramatic growth at the fringes of regions, in areas considered rural until recently.

The new city-region, or "city a la carte," Fishman concludes, "can be seen as composed of three overlapping networks, representing the three basic categories of destinations that define each person's city. These are the household network; the network of consumption; and the network of production."(n16) "Each of these networks has its own spatial logic. ...But because the networks overlap, the pattern on the ground is one of juxtaposition and interpenetration. Instead of the logical division of functions of the old metropolis, one finds a post-modern, post-urban collage (Figure 3)."(n17)

**INTERDEPENDENCY OF REGIONAL ECONOMIES**

On the surface, distribution of jobs and population in the post-industrial region still displays the now familiar polycentric pattern, but sources of economic growth and control are radically different. "New technology," Thomas Stanback observes, "makes possible a customization of the firm's output to meet the specialized needs of the buyer, increasing the importance of locating activities involved in the sale and delivery of services closer to the major markets to be served. All this broadens the range of locational choice."(n18)

Broadening locational choice makes regions more competitive with one another, nationally as well as internationally. At the same time, it
makes integration of the separate communities that compose metropolitan regions more critical. The ability to increase airport capacity, widen roads, locate landfills, and maintain air and water quality are issues beyond the purview of any one community or central city. Likewise, the tasks of providing an educated work force, supplying affordable housing, caring for the needs of the indigent (so they do not constitute a deadload on fiscal capacity), and human capital development all are inextricably tied to competitiveness. Surely one of the ironies of the increased freedom of location is the corresponding increased importance of place quality.

It is not clear exactly how the interdependencies of regional economies operate, but there is growing evidence of their importance. In the period of polycentric regionalism the suburbs appear to have provided acceptable and even superior substitutes for central-city business locations. Richard Voith, senior research economist at the Philadelphia Federal Reserve Bank, suggests that "if they are perfect substitutes, we need not be concerned with central-city decline from an economic growth perspective, since losses in the city will be offset by gains in the suburbs. However, if city growth complements suburban growth, then declining cities eventually will undermine suburban growth. In this case, cooperative policies to arrest urban decline would be desirable."(n19) In fact, such complementarily or interdependency appears to exist in metro areas.

As a result of complementarily, Voith suggests, continued decline of the central city can result in negative spillover effects when the amenities valued by people throughout the region (e.g., museums, waterfronts, historic sites, etc.) are jeopardized. Decline may be further aggravated by a concentration of impoverished households, rising crime, and deteriorating infrastructure. Conversely, suburbs will enjoy greater prosperity when they surround an economically healthy central city.(n20)

Hank Savitch, of the University of Louisville, looking at the relationship of suburban vis-a-vis central-city personal income and the price of office space, finds evidence in support of Voith's construct of complementarily. Personal incomes of suburban householders are higher than those of the central city, but about one-third of suburban incomes are earned from city-based jobs. Moreover, Class A office rental rates are significantly higher in cities, and those rents determine suburban prices. "The mark of a healthy suburb," Savitch concludes, "is not self-sufficiency, but interaction with a high-density, prosperous urban core."(n21)

Where Voith focuses on positive and negative spillover effects in explaining the economic interdependence of cities and suburbs, Savitch suggests that governance structures also are important. "One of our central arguments is that cities and suburbs do best when they interact and make use of respective and complementary strengths. We refer to the ability of cities to encompass and harness assets of the larger region as inclusion. Inclusion can take different forms, ranging from outright annexation, to interlocal agreements, to formal partnerships. It is conceivable [for] a city [to be] fragmented at the former level of governance, yet . . . be inclusionary at other levels (e.g., public-private partnerships, compacts, economic development agreements)."(n22)

Although there has been significant interest in the question of whether suburban economic health is dependent on central city vitality, the kinds of interdependencies that characterize the post-industrial region also suggest that the relationship between suburban communities is equally important. If that relationship is such that a region as a whole lacks affordable housing, adequate transit, landfill capacity, etc., then
all of the communities of a region stand to suffer a competitive disadvantage. Nevertheless, central cities retain unique significance in furnishing identity to regions and providing significant control and coordinative functions.

**STRATEGIC ARENAS OF POST-INDUSTRIAL REGIONALISM**

As Savitch suggests, governance structures--whether formal or informal--are critically important to the process of keeping regions competitive. In the broadest but most fundamental sense, these structures provide capacity for awareness and mobilization.

Every transformation of regional structure has called forth demands for a corresponding reform of governance. Today there are three strategic arenas, defining the central challenges:

- **Economic Development** is an arena concerned with the capacity of regions to respond effectively to the issues of national and global economic competition.

  Under classic industrialization, the efficient and adequate supply of labor and materials was critically important to competitiveness. Today, the greatest value is added to products through design, engineering and marketing; thereby shifting emphasis to the work force. Although labor is mobile, regions need to generate part of the supply and maintain training. Moreover, demands for flexible production, as well as flexible corporate organization, require concentrations of specialists within a region and not simply on corporate payrolls.

- **Infrastructure and Environmental Protection** is an arena focusing on the consequences of inefficient land-use and transportation patterns, and the search for funds to deliver new capacity.

  Place qualities matter. In order to attract and retain the kind of work force necessary in a post-industrial economy, the environment must be attractive, safe and convenient. And in order to sustain the complex system of networks that define the mobility patterns of post-industrial regions, adequate infrastructure must be made available without exhausting capital resources.

- **Equity and Disparity** is an arena comprising concern for social inequalities aggravated by the combination of economic restructuring, uneven development and local regulatory barriers affecting racial and class segregation.

  If the fortunes of the suburbs are tied, through complementary relations, with those of the central cities, then social inequities and fiscal disparities of central cities must be of suburban and regional concern. Moreover, as suburbs age and experience these problems themselves, the potential exists for spiralling decline.

**CONCLUSION**

Although each of these arenas is present, not all are equally strategic to every metropolitan area. In rapidly growing regions, the provision of infrastructure and assurance of environmental quality are particularly pressing issues. In older regions faced with a declining industrial
base, on the other hand, equity and disparity issues are typically of primary strategic interest. Economic development is of concern to all regions, but that concern varies significantly depending on whether the area is growing, declining or stagnant.

In view of issues evident in all three arenas, the rationale for regional governance has grown more compelling than ever. But are there solutions with the capacity and legitimacy to address these challenges?

Notes


(n2) Changes in Philadelphia's economy have been closely monitored by the Philadelphia Economic Project. Initiated at the University of Pennsylvania in 1984, the project provides ongoing monitoring of the region's economy. Figures cited here are drawn from the latest volume of the project, Post Industrial Philadelphia: Structural Changes in the Metropolitan Economy (Philadelphia: University of Pennsylvania Press, 1990).


(n6) Allan D. Wallis, "Governance and the Civic Infrastructure of Metropolitan Regions," NATIONAL Civic REVIEW, 82:2, Spring 1993, pp.125-139.

(n7) Figures cited here are drawn from John Kasarda, "Urban Transition and the Underclass," Annals (AAPSS),January 1989, p.29.


(n11) Brian J.L. Berry, "The Price of the Aging Metropolis: Cultural Bases and Social Process" in Sternlieb and Hughes, eds., Post


(n16) Fishman, p. 38.

(n17) Fishman, p. 39.


(n19) Voith, 1992, pp.21-33.

(n20) Similar findings have been drawn from a study conducted by William Barnes and Larry Ledeber; see their All in it Together: Cities, Suburbs and Local Economic Regions (Washington, D.C.: National League of Cities, 1993).


(n22) Savitch et al, 1993

(n23) See also, Allan D. Wallis, NATIONAL CIVIC REVIEW, 1993.

DIAGRAM: Figure 1; The Concentric Ring Pattern of Urban Development

DIAGRAM: Figure 2; The Multiple-Nucleus or Polycentric Pattern of Metropolitan Development

DIAGRAM: Figure 3; The Networked Pattern of Metropolitan Development

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