Volume Title: Innovation Policy and the Economy,
Volume 5

Volume Author/Editor: Adam B. Jaffe, Josh Lerner
and Scott Stern, editors

Volume Publisher: The MIT Press

Volume ISBN: 0-262-10109-2

Volume URL: http://www.nber.org/books/jaff05-1

Conference Date: April 13, 2004

Publication Date: January 2005

Title: Jurisdictional Advantage

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URL: http://www.nber.org/chapters/c10807

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Jurisdictional Advantage

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Executive Summary

In this paper, we define jurisdictional advantage, the recognition that location is critical to firms' innovative success and that every location has unique assets that are not easily replicated. Drawing from the well-developed literature on corporate strategy, we consider analogies to cities in their search for competitive advantage. We argue that jurisdictions may benefit from a strategic orientation that considers the unique and not easily replicated assets, resources, and skill set contained in a jurisdiction; the position of the jurisdiction vis-à-vis the hierarchy of cities in the national and world economy; and the maximization of wages and property values within the jurisdiction. We review recent advances in our understanding of patterns of urban specialization and the composition of activities within cities, which suggest strategies that may generate economic growth and some strategies to avoid. This paper then considers the role of firms and their responsibility to jurisdictions in light of the net benefits received from place-specific externalities, and it concludes by considering the challenges to implementing jurisdictional advantage.

I. Introduction

Economic growth is a preoccupation among economists and government policy makers. Traditionally the focus has been at the national level; however, research has shifted the focus to smaller geographic units defined as clusters of industrial activities, or alternatively as regions. The literature suggests that economic growth is a local process and that cities are an important, if not the most important, economic unit in generating new development, competitiveness, and prosperity. When we talk about geographically-defined clusters of industrial activity or regional economic development, we are really talking about cities and the activities that take place within the city's sphere of influence.[1] It has not been popular to talk about cities in a policy context for

several decades in the United States; however, the new economic geography literature suggests that the time has come to focus on cities and the construction of what we term jurisdictional advantage as a means to promote economic growth and prosperity.

Research has established that cities, due to the geographic proximity of firms and other institutions, provide localized knowledge externalities or spillovers that provide positive economic value. Cities increase opportunities for interaction that facilitates learning and the absorption of knowledge, provide a venue for experimentation with new ideas, and enhance the ability to exchange ideas and engage with others who have relevant expertise. As a result, firms in these locations enjoy higher productivity, experience greater innovation and growth, and pay higher wages. A growing literature documents these advantages; however, these topics have more than an academic interest. The literature begs the question: if you are responsible for a jurisdiction, what should you do to promote prosperity and economic growth?

Our objective in this paper is to define jurisdictional advantage: the recognition that location is critical to firms' innovative success and that every location has unique assets that are not easily replicated. The purpose is to be normative and policy-oriented. Drawing from the well-developed literature on corporate strategy, we consider analogies to cities in their search for competitive advantage. In contrast to the more passive term *locational advantage*, our use of the term *jurisdiction* denotes geographically defined legal and political decision-making authority and coordination. Thus, jurisdictions may be constructed and managed to promote a coherent activity set. We review recent advances in our understanding of patterns of urban specialization and the composition of activities within cities, which suggest strategies that may generate economic growth and some strategies to avoid. This paper then considers the role of firms and their responsibility to jurisdictions in light of the net benefits received from place-specific externalities, and we conclude by considering the challenges to implementing jurisdictional advantage.

II. Alternatives to Shaping a Jurisdiction

Two extreme philosophies are available to policy makers for fostering economic development. One potential approach is laissez-faire, simply letting market forces work. The rationale is that industrial clusters that are part of successful cities arise for various historically contingent or

serendipitous factors not easily replicated. Firms locate and invest in a particular city for reasons that are not well understood, much less predictable and controllable. This view suggests that the most constructive path a jurisdiction can take is to let market forces determine its future fate and simply hope for the best. Given the challenges of jurisdictional decision making, the laissez-faire approach has some appeal, but it has drawbacks. Industrial development demonstrates high levels of path dependence and increasing returns, so if a city misses out on an important trend, new technology, or infrastructure investment on the basis of a laissez-faire attitude, it may miss out for a long time. The existence of market failures associated with innovative activity inhibits the efficient allocation of resources, suggesting a role for government involvement.

An opposing philosophy advocates aggressive planning toward a targeted industry, an "if you build it they will come" philosophy. Typically, politicians and civic leaders focus on some emerging, high-growth industry with great fanfare, high-profile events, and the commitment of substantial public resources. These efforts are often mimicked by similar jurisdictions in a classic bandwagon effect. For example, forty-eight of the fifty states currently have biotechnology initiatives (Biotechnology Industry Organization 2001). Most of these focus on human therapeutics and attempt to leverage local universities and medical schools.

Numerous examples illustrate that governments have not been able to establish clusters by fiat. One such example is New Jersey's failed attempt to replicate the success of Silicon Valley (Leslie and Kargon 1997). Despite the presence of prominent research universities and substantial private-sector research and development (R&D), the net effect was several strategic partnerships rather than broadbased economic development. Even in cases where policy makers were able to implement an economic development vision, as in the case of Research Triangle Park, Link (1995, 2002) documents that it took over fifty years of concerted efforts to begin to realize measurable outcomes. Even when efforts are successful at generating startup companies, it is difficult for a jurisdiction to garner long-term benefits if complementary assets are lacking (Connecticut Center for a New Economy 2004).

The nature of innovation makes it difficult to dictate industrial clusters. Commercializing technological breakthroughs requires translating scientific potential into consumer needs and product markets. At its earliest stages, before applications are easily described or generally appreciated, locating near the center of innovative activity

provides critical competitive business advantage. Realizing the potential of a technological breakthrough requires a sophisticated understanding of consumer needs, existing markets for product innovation, factor inputs, and prevailing production technology. Co-location increases awareness of emerging trends and reduces uncertainty for firms. Innovation clusters in physical locations where knowledge externalities reduce the costs of discovery and commercialization.

When a technology reaches a stage when it can be easily understood and valued, the established centers—the first movers—already have an advantage. Increasing returns is a feature of innovation and knowledge-based industrial activity. As a result, activities that are ahead tend to move even further ahead (Arthur 1996). By the time an industry is well-known enough to be targeted for economic development, other jurisdictions have probably already captured the lion's share of the benefits and are positioned for greater advantage. The path of emerging industries is difficult to predict and is extremely fluid. Planning efforts based on current assumptions will never be able to anticipate future scientific developments and the direction that a technology may take. Consider the Internet as a case in point. In 1990, few if any jurisdictions focused on this technology, but by the middle of the decade, the country was caught in dot-com mania, with numerous public-sector initiatives, tax incentives, and business incubators that have mostly been abandoned now.

A middle alternative to the two philosophies discussed may be to influence the quality and shape of economic outcomes by making judicious investments and avoiding costly mistakes—deliberately constructing jurisdictional advantage by building on existing, not easily replicated resources and by complementing private-sector activities. The pursuit of jurisdictional advantage is not without challenges because so many factors influence the outcomes. Because future prosperity and quality of life are at stake, however, the questions about how to pursue this goal are of more than just academic interest.

III. Corporate Strategy as an Analogy

We believe a helpful analogy can be made between jurisdictions and firms with respect to strategic advantage. Certainly, cities have more complex objective functions overall than do firms. When we think about economic development specifically within the context of cluster formation and industrial competitiveness, however, the analogy is in-

structive. For firms, the overarching goal is to gain and maintain competitive advantage, which translates into above-average returns for shareholders. The way to achieve competitive advantage is to create a competitive strategy that is consistent with trends in the firm's industry and appropriate to the firm's resources and capabilities.

One important school of competitive strategy holds that competitive advantage arises from the concept of creating a unique activity system, which is achieved either by an advantage of low cost or by way of differentiation (Porter 1980). A web of activities, when working together, provides an advantage that is difficult, if not impossible, for competitors to replicate because the individual activities fit well together and actually reinforce each other. For example, Southwest Airlines has been the most successful airline in the U.S. market over the past thirty years, in level of profitability, stability of earnings, and growth in market share. It does not achieve competitive advantage through any single service that it provides, such as flying a standard fleet of Boeing 737s, flying from secondary airports, having the most frequent daily departures from each of its locations, or utilizing the Internet rather than travel agents for booking. Rather, Southwest achieves its advantage by performing all of these activities (and more) in ways that fit together and reinforce each other to produce a significant and sustainable cost advantage over all of its competitors, all the while offering high and consistent service to its customers. Any competitor would have to match every single aspect of Southwest's activity system to challenge the overall outcome—and thus far no competitor has been successful in doing so (Porter 1996).

The activity system can provide a low-cost advantage by enabling the firm to produce a product or service for a segment of customers that is roughly equivalent to that of the competitor at a significantly lower cost—resulting in higher profitability than the average competitor, as is the case for Southwest Airlines. Note that being a low-cost firm is not the same as being a low-price firm. Having the same cost structure as competitors and deciding to sell at a lower profit margin is not a strategy for long-term advantage, but rather a strategy of transferring value from corporate shareholders to customers. It is simply not a sustainable long-term strategy. Any competitive firm that objects to inroads made on the base of a low-price approach can simply cut its own prices and margins to compete. This approach ultimately leads to a race to the bottom in terms of profitability. And any firm with a cost advantage in the industry in question will be able to set prices lower

and force the low-price player out of the industry. In many respects, numerous dot-com bubble firms employed the ultimate low-price strategy—giving away their product or service—and confused both themselves and the capital markets into believing it was a sensible strategy. It was not sound because low price is not a viable strategy in the absence of low costs.

A firm's activity system can also provide a differentiation advantage by enabling the firm to produce a product or service that is considered to be uniquely more valuable than those of its competitors by a segment of customers and for which those customers are willing, even happy, to pay a premium price. For example, Progressive Insurance offers a differentiated automobile insurance service to a nonstandard segment of drivers. It offers quotes that are better-tailored to the true risk category of drivers and provides quick and easy settlement of claims by way of an extensive fleet of van-based adjusters. Like Southwest Airlines, Progressive also has a unique activity system that features many activities—such as its massive pricing database, a fleet of claims-settling vans, unique training and compensation structures, and a unique investment philosophy—that fit together and reinforce each other to produce a service that is highly valued by its customers and is produced at a competitive cost.

A competitive cost structure is important to the differentiation strategy because having a premium price with a cost structure that eats up the entire premium is not a strategy for long-term competitive advantage. It is a strategy for satisfying customers but not for providing adequate returns to shareholders. Keeping the cost structure under control requires an activity system that minimizes the total systems cost of providing a differentiated product or service.

The concepts of strategy and strategic thinking have become well-accepted by firms over the past thirty years. Strategy allows firms to define what they are about and, most important, what they are not about. In the next section of the paper, we argue that a city or region may seek to attain jurisdictional advantage by building a unique activity system that is valuable in producing either a low-cost or differentiation advantage over other jurisdictions.

IV. Seeking Jurisdictional Advantage

Because a jurisdiction does not have shareholders per se, the question is, Who should benefit from the jurisdiction's decisions? Over 300

years ago, John Locke argued that government is the vehicle for collective action (Locke 1967). Like firms, jurisdictions are socially constructed entities that can raise funds, organize resources, and live on in perpetuity, or at least accomplish these goals better than individuals can. Locke's argument is that government is a legitimate tool by which individuals may further their shared interests by acting in common. While these shared interests should not rest on any particular conception of the common good or individual happiness, it is a fundamental premise of Locke's argument that income and wealth are instrumental goods desired, to some extent, by everyone.

A measure of the common good is the prevailing wealth in the jurisdiction. Wealth is a combination of wages and investments. For most of the world's population, housing equity represents the single largest investment, and the value of jurisdictional amenities and local quality of life is capitalized in housing prices. Higher levels of local public services, higher local wages, and a growing local economy all contribute to appreciation of real estate values and the wealth of property owners. Because the majority of American households own their own homes, increases in property values are broadly distributed across the population. Increases in property values yield higher tax revenues for the jurisdiction. If these revenues are used judiciously, they increase amenities. In this way, virtuous cycles of economic growth are created.

Wages are an important measure of the wealth of the jurisdiction. The greater the positive variance in wage levels from the mean, the greater the jurisdictional advantage from which the residents benefit, other things being equal. However, two adjustments should be made to this measure. First, when comparing jurisdictions across countries, wages adjusted for purchasing power parity should be the measure, as is the case when comparing gross domestic product (GDP) per capita. Second, an additional refinement should adjust after-tax wages for major differences in government services and amenities provided. So if after-tax wages were used to compare the jurisdiction of a U.S. city with a Canadian city, an adjustment should be made for the fact that the residents of the Canadian city receive greater health care benefits through government expenditure. For individuals living in the United States, more of their health care costs would be paid for from after-tax wages.

Table 3.1 presents differences in wages by jurisdiction for those industries with some demonstrated competitive advantage. As a benchmark, the average annual wage for all U.S. industries was

Table 3.1
Differences in wages by jurisdiction for industries with a competitive advantage

Metropolitan area	2001 total employment	2001 share of national employment	2001 employment location quotient	2001 average wages	Industry cluster
Atlanta, GA	56,129	2.8	1.51	$59,783	Distribution services
Atlanta, GA	148,591	3	1.6	$56,152	Business services
Augusta-Aiken, GA-SC	20,053	4.8	30.96	$50,352	Chemical products
Baltimore, MD	12,034	1.6	1.74	$61,459	Analytical instruments
Baltimore, MD	41,501	1.8	1.94	$45,903	Education and knowledge creation
Bergen-Passaic, NJ	15,945	1.7	2.95	$57,345	Publishing and printing
Birmingham, AL	11,865	0.9	2.31	$44,210	Metal manufacturing
Boston, MA	158,727	4.7	1.75	$92,432	Financial services
Boston, MA	54,811	6	2.25	$77,380	Information technology
Boston, MA	35,210	7.9	2.94	$75,875	Communications equipment
Boston, MA	209,555	4.2	1.56	$67,853	Business services
Boston, MA	76,299	3.8	1.42	$64,680	Distribution services
Boston, MA	23,238	6.3	2.35	$59,361	Medical devices
Chicago, IL	158,055	4.7	1.37	$86,033	Financial services
Chicago, IL	214,430	4.3	1.25	$61,173	Business services
Chicago, IL	40,846	9.1	2.68	$59,679	Communications equipment
Chicago, IL	87,392	4.3	1.28	$58,551	Distribution services
Cincinnati, OH-KY-IN	15,015	1.1	1.53	$36,603	Processed food
Cleveland-Lorain-Elyria	20,876	3.2	3.46	$47,829	Production technology
Cleveland-Lorain-Elyria	26,960	2.1	2.26	$46,692	Automotive

(continued)

Table 3.1
(continued)

Metropolitan area	2001 total employment	2001 share of national employment	2001 employment location quotient	2001 average wages	Industry cluster
Cleveland-Lorain-Elyria	14,610	1.8	1.88	$38,754	Oil and gas products and services
Dallas, TX	29,052	6.5	3.9	$71,003	Communications equipment
Dallas, TX	10,253	2.6	1.54	$64,697	Oil and gas products and services
Dallas, TX	59,094	2.9	1.76	$61,521	Distribution services
Dallas, TX	121,056	2.4	1.45	$60,309	Business services
Denver, CO	73,909	1.5	1.57	$57,173	Business services
Detroit, MI	138,769	10.9	6.41	$54,082	Automotive
Detroit, MI	20,831	3.2	1.9	$49,290	Production technology
Elkhart-Goshen, IN	16,833	5.9	62.03	$35,112	Prefabricated enclosures
Flint, MI	17,282	1.4	10.73	$48,404	Automotive
Fort Wayne, IN	16,218	1.3	6.01	$49,399	Automotive
Gary, IN	27,400	2	10.28	$52,849	Metal manufacturing
Grand Rapids	32,126	2.5	5.46	$46,289	Automotive
Hartford, CT	14,207	15.8	32.02	$78,031	Aerospace engines
Hickory, NC	10,004	2.1	14.3	$39,128	Apparel
Houston, TX	66,657	16.6	10.23	$66,786	Oil and gas products and services
Houston, TX	15,189	3.6	2.22	$65,260	Chemical products
Houston, TX	109,070	2.2	1.33	$58,980	Business services
Houston, TX	50,862	3.1	1.93	$45,766	Transportation and logistics
Houston, TX	69,832	3.8	2.32	$42,834	Heavy construction services
Indianapolis, IN	12,831	0.9	1.34	$38,369	Metal manufacturing

(continued)

Table 3.1
(continued)

Metropolitan area	2001 total employment	2001 share of national employment	2001 employment location quotient	2001 average wages	Industry cluster
Los Angeles-Long Beach, CA	18,517	4.1	1.22	$63,183	Communications equipment
Los Angeles-Long Beach, CA	51,679	13.8	4.09	$58,420	Aerospace vehicles
Los Angeles-Long Beach, CA	177,625	16.2	4.79	$57,800	Entertainment
Los Angeles-Long Beach, CA	84,820	5.2	1.55	$45,397	Transportation and logistics
Los Angeles-Long Beach, CA	97,201	4.2	1.24	$36,133	Education and knowledge creation
Middlesex-Somerset, NJ	63,467	1.3	2.32	$66,985	Business services
Middlesex-Somerset, NJ	27,685	1.4	2.52	$61,584	Distribution services
Milwaukee-Waukesha, WI	19,002	2.9	4.34	$45,091	Production technology
Milwaukee-Waukesha, WI	21,842	1.6	2.37	$38,835	Metal manufacturing
Minneapolis-St. Paul, MI	18,683	2.5	1.75	$53,438	Analytical instruments
Minneapolis-St. Paul, MI	20,065	5.4	3.8	$51,806	Medical devices
Minneapolis-St. Paul, MI	13,622	2.1	1.48	$41,023	Production technology
Minneapolis-St. Paul, MI	25,479	1.9	1.31	$40,637	Metal manufacturing
Nassau-Suffolk, NY	11,637	1.2	1.27	$46,353	Publishing and printing
New Haven, CT	29,699	1.3	1.86	$52,508	Education and knowledge creation
New York, NY	316,922	9.4	2.8	$197,932	Financial services
New York, NY	74,939	7.8	2.33	$70,946	Publishing and printing

(continued)

Table 3.1
(continued)

Metropolitan area	2001 total employment	2001 share of national employment	2001 employment location quotient	2001 average wages	Industry cluster
New York, NY	63,529	5.8	1.73	$62,215	Entertainment
New York, NY	101,419	5	1.51	$60,767	Distribution services
New York, NY	75,249	4.6	1.39	$45,317	Transportation and logistics
New York, NY	29,807	24.6	7.34	$40,021	Jewelry and precious metals
New York, NY	151,514	6.5	1.96	$39,511	Education and knowledge creation
Newark, NJ	21,619	8.2	10.04	$67,911	Biopharmaceuticals
Newark, NJ	31,830	1.6	1.93	$61,268	Distribution services
Newark, NJ	39,777	2.5	2.99	$43,270	Transportation and logistics
Oakland, CA	19,104	2.1	2.41	$100,139	Information technology
Oakland, CA	14,675	2	2.26	$69,869	Analytical instruments
Oakland, CA	71,694	1.4	1.64	$66,537	Business services
Orange County, CA	43,632	2.2	1.77	$55,800	Distribution services
Orange County, CA	84,540	1.7	1.37	$55,305	Business services
Orange County, CA	10,625	2.9	2.35	$51,700	Medical devices
Orange County, CA	12,326	1.5	1.21	$35,591	Oil and gas products and services
Philadelphia, PA-NJ	9,878	3.8	1.93	$86,730	Biopharmaceuticals
Philadelphia, PA-NJ	126,249	2.5	1.29	$58,795	Business services
Philadelphia, PA-NJ	48,384	2.4	1.24	$56,805	Distribution services
Philadelphia, PA-NJ	27,268	2.8	1.46	$43,284	Publishing and printing

(continued)

Table 3.1
(continued)

Metropolitan area	2001 total employment	2001 share of national employment	2001 employment location quotient	2001 average wages	Industry cluster
Philadelphia, PA-NJ	88,332	3.8	1.96	$38,504	Education and knowledge creation
Phoenix-Mesa, AZ	15,331	2	1.68	$53,945	Analytical instruments
Pittsburgh, PA	26,910	2	2.19	$45,545	Metal manufacturing
Pittsburgh, PA	43,504	1.9	2.08	$32,817	Education and knowledge creation
Portland, OR	10,844	1.4	1.9	$65,845	Analytical instruments
Raleigh-Durham, NC	32,349	1.4	2.62	$51,518	Education and knowledge creation
San Antonio, TX	26,285	1.4	2.57	$38,964	Heavy construction services
San Diego, CA	28,001	1.4	1.48	$83,345	Distribution services
San Diego, CA	42,826	1.8	1.97	$56,348	Education and knowledge creation
San Diego, CA	13,483	1.8	1.92	$56,319	Analytical instruments
San Francisco, CA	59,033	1.7	1.91	$140,797	Financial services
San Francisco, CA	26,325	2.9	3.17	$119,291	Information technology
San Francisco, CA	104,749	2.1	2.29	$81,806	Business services
San Francisco, CA	25,564	1.3	1.39	$70,779	Distribution services
San Francisco, CA	11,389	1.2	1.3	$63,823	Publishing and printing
San Francisco, CA	27,322	1.2	1.29	$56,554	Education and knowledge creation

(continued)

Table 3.1
(continued)

Metropolitan area	2001 total employment	2001 share of national employment	2001 employment location quotient	2001 average wages	Industry cluster
San Francisco, CA	34,604	2.1	2.34	$40,466	Transportation and logistics
San Francisco, CA	16,227	1.5	1.62	$34,035	Entertainment
San Jose, CA	52,982	2.6	2.9	$109,766	Distribution services
San Jose, CA	92,453	10.2	11.2	$108,801	Information technology
San Jose, CA	121,537	2.4	2.67	$89,569	Business services
San Jose, CA	40,001	1.7	1.91	$83,827	Education and knowledge creation
San Jose, CA	24,592	5.5	6.06	$81,775	Communications equipment
San Jose, CA	12,536	3.4	3.74	$76,901	Medical devices
San Jose, CA	48,569	6.5	7.16	$74,991	Analytical instruments
Seattle, WA	37,469	4.1	3.72	$228,178	Information technology
Seattle, WA	29,856	1.5	1.34	$59,477	Distribution services
Seattle, WA	38,166	2.4	2.13	$48,397	Transportation and logistics
St. Louis, MO-IL	14,213	1.3	1.22	$85,875	Entertainment
Toledo, OH	20,722	1.6	6.55	$49,607	Automotive
Washington, DC	336,576	6.7	3.38	$69,438	Business services
Washington, DC	24,867	2.6	1.31	$54,645	Publishing and printing
Washington, DC	92,942	4	2.03	$48,604	Education and knowledge creation
West Palm Beach, FL	10,122	2.3	5.54	$67,379	Communications equipment

Source: Institute for Strategy and Competitiveness, Cluster Mapping Project, http://data.isc.hbs.edu/isc/index.jsp.

approximately $33,200 in 2001. We list city-industries with a higher-than-average national wage for the industry; a location quotient greater than 1, indicating geographic concentration relative to national employment; and more than 10,000 employment. This table demonstrates that cities specialize in certain industrial clusters but that specialization varies widely across cities in the same industry.

Creating and sustaining positive wage differentials is the essence of jurisdictional advantage. Note that this approach is not synonymous with attracting high-technology industries—a preoccupation of many economic development initiatives. Many of the high-technology industries offer substantial employment numbers and higher-than-national-average wages, but they are not the only such industries. Investments in more mature industries that have a commitment to a location may be equally transformative in providing a source of competitive advantage. The relatively low-technology financial services cluster is, on average, the highest paying cluster. In addition, other mature industries, for example, printing and publishing or metal manufacturing, have continued to innovate and provide something that markets value. Distribution and logistics is another industry based on efficient inventory control and the process of innovation.

In addition, many of theses clusters represent well-known associations between places and industries. For example, distribution services in Atlanta have given the city a long history as a transportation hub, and Los Angeles has a concentration of entertainment. Certain clusters, such as education and knowledge creation; analytical instruments, aerospace vehicles, and defense; communications equipment; information technology; and medical devices appear to cluster together and to be more conducive to multiple clustering than other industries (Porter 2003).

Across the U.S. economy, average wages differ greatly across and within industry clusters, demonstrating that some industries tend to produce higher prosperity than others. However, wages in the same cluster vary substantially by jurisdiction, indicating that jurisdictions can influence the level of prosperity generated by a given industry or cluster. Table 3.2 presents four representative industries, one from each quartile of the distribution of industry wages. Financial services are in the first quartile, with mean annual wages of $75,000; medical devices are in the second quartile, with mean annual wages of $50,000; metal manufacturing represents the third quartile, with mean annual wages of $37,200; and building fixtures, equipment, and services is in

Table 3.2
Average wages differ greatly across and within industry clusters

	(2) Average wages	(3) Ratio of wages to average city wage
1. Financial services		
New Haven, CT	169,699	3.46
Chattanooga, TN-GA	58,381	2.09
Salem, OR	48,628	1.84
Fargo-Moorhead, ND-MN	42,882	1.6
2. Medical devices		
Oakland, CA	82,855	1.88
Milwaukee, WI	55,676	1.58
Salt Lake City, UT	46,390	1.53
Riverside-San Bernardino, CA	39,847	1.43
3. Metal manufacturing		
Gary, IN	52,849	1.72
Buffalo, NY	38,291	1.27
Chattanooga, TN-GA	33,549	1.2
Scranton, PA	31,725	1.23
4. Building fixtures, equipment, and services		
Grand Rapids, MI	39,699	1.21
Cleveland, OH	37,271	1.11
Lancaster, PA	33,064	1.12
Oklahoma City, OK	30,532	1.13

Source: Institute for Strategy and Competitiveness, Cluster Mapping Project, http://data.isc.hbs.edu/isc/index.jsp.

the bottom quartile, with mean annual wages of $31,000. Similarly, the four cities listed were selected to represent quartiles of the distribution of wages within the industry. Each city presented in table 3.2 had a location quotient greater than 1, which indicates relative specialization for the industry within the geographic unit;[2] a minimum of 1,000 workers; and average wages that are greater than the average wages for the city, as indicated in column (3). Even when the wages are not high relative to the highest wages for the industry, they are higher relative to the mean city wages.

To construct jurisdictional advantage requires a jurisdictional strategy—a set of choices that produces a jurisdictional activity system that in turn generates either low-cost advantage or a differentiation advantage. The customers for a jurisdiction are job-providing entities—

primarily but not exclusively firms. In many respects, jurisdictions are collections of firms, both large and small. Just as firms are one economic entity that organizes resources and production, jurisdictions are themselves another economic entity that provides a platform for organizing resources similarly. High-wage jobs are the reward for the jurisdiction that can generate advantage and thus attract, incubate, and grow firms. Jurisdictional advantage produces an environment that both attracts investments by existing firms to the jurisdiction and promotes the creation of startup businesses in the jurisdiction. It also produces an environment that helps all of these firms prosper while operating in that jurisdiction.

The logic of endogenous growth suggests that new startup firms will be an important source of growth. New firms are based on the identification of new market opportunities, and they frequently get started as a means to bring new technology to the market. Most important, these firms are relatively immobile geographically because entrepreneurs build on local networks and expertise. Individuals start companies based on their prior experience and interests, typically fulfilling some niche that a larger firm may judge too small, exploiting a new opportunity that may have a risk profile unsuited to a larger firm, or using a unique set of skills and knowledge to develop applications. Many individuals have location inertia because of lack of family mobility, simple preferences, or the risk of establishing a new company in a new location. In building their companies, entrepreneurs rely on their local contacts, connections, and knowledge of the business environment.

History is replete with examples of co-located firms defining technological frontiers and speeding up the rate of technological advance. The geographic concentrations of related industries create synergies that provide unique activity sets that in turn promote the emergence of new industries: combining new knowledge with existing expertise is the essence of innovation. New industries typically begin with new-firm formation and the efforts of entrepreneurs. Some of these new startups will be gazelles in terms of rapid growth, creating new industries and disrupting existing firms in their wake. Most will be smaller players that will operate in a niche for which the firm has some competitive advantage.

What is low cost in the context of jurisdictional advantage? It is not low wages, which is the first answer that comes to mind. A low-wage jurisdictional strategy is like a low-price company strategy. It does not produce advantage. For a company, a low-price strategy produces low

profits for the shareholders and is dangerous because it leaves the company vulnerable to greater investments by high-profit competitors. In a jurisdiction, a low-wage strategy produces wages that are lower than the average of other jurisdictions, which connotes disadvantage, not advantage, for its residents.

Approaches centered on industrial recruitment with special tax incentives and various other inducements to lower the costs of doing business for firms are not low-cost strategies either. Giving dollars away to firms is not unique or hard to replicate. Evidence suggests that this type of strategy is a race to the bottom in a zero-sum game. No evidence suggests that it leads eventually to higher wages, which is the measure of a successful low-cost jurisdictional strategy. These types of operations are frequently the first to close when the cost structure changes.

A successful low-cost jurisdictional strategy would exist if a jurisdiction produces an equivalent environment to other jurisdictions but at a lower cost. For example, the city of Edmonton, Alberta, has produced a K–12 educational system that generates some of the highest results of any North American jurisdiction. It accomplished this superior outcome with below-average costs through unique approaches to management of the system (Chen and Mintz 2004). This strategy allows Edmonton to charge lower personal taxes, other things being equal, which increases the after-tax wages of residents and thus enhances the competitive outcome of the jurisdiction.

A differentiated jurisdictional strategy exists when a set of activities produces a uniquely attractive environment for a given segment of job-providing entities at a similar cost to other jurisdictions yet with greater potential benefits. An example is the externalities available to a biotech firm from locating near several industry-leading biotech firms already operating in the greater Boston area. These externalities are outside the ability of markets to price, but some evidence suggests that firms gain economic value from them. Firms are simply more productive (better able to innovate and create unique value) in certain locations. This greater productivity translates into higher profits and higher wages.

V. Jurisdictional Strategy and Jurisdictional Advantage

The next concern is how a jurisdiction may position itself to capture economic growth. Economic growth is not easy to capture: there are

no guarantees. But the emerging literature on growth theory and the new economic geography offer some insights that may shape jurisdictional advantage. This literature is informed by the microeconomics of innovation, which suggests the importance of skilled labor and the mix or composition of activities within a jurisdiction's activity system. The success of a firm and the success of the region are interrelated, (and endogenous, in the terminology of economics) and form the basis of jurisdictional strategy and advantage.

Economists have long known that industries cluster in specific locations for various reasons. What is critical is that these clustered industries tend to be more innovative and have greater productivity, which is why we observe wage premiums for such clusters. An important distinction exists between the geographic concentrations of production and the location of innovation. Whereas the geographic concentrations of production are often due to the location of natural resources, ease of transportation or historical inertia, the location of innovation is due to knowledge externalities and subject to increasing returns. While innovation yields greater productivity and the increases in wages that jurisdictions seek, jobs associated with routine production remain geographically in place as long as the physical investments are economically viable. Once physical assets are depreciated or obsolete, the market changes, or costs become uncompetitive, these locations are easily abandoned. As a result, property values fall and the jurisdiction suffers.

The idea that location is beneficial to firms' innovative success is central to theorizing in economic geography about the benefits of cities. Certain locations supply localized knowledge externalities or spillovers that provide positive economic value but are beyond the ability of market mechanisms to price and allocate efficiently. The significance of localized knowledge spillovers as inputs to firms' innovative activities suggests that their most creative and highest value-added activities do not proceed in isolation but depend on access to new ideas. Location mitigates the inherent uncertainty of innovative activity: proximity enhances the ability of firms to exchange ideas and exchange important incipient knowledge, hence reducing uncertainty for firms that work in new fields. Innovation clusters spatially where knowledge externalities reduce the costs of scientific discovery and commercialization. In addition, firms producing innovations tend to be located in areas with the necessary resources: resources that have accumulated because of a region's past success with innovation. In this way, firm

success and city economic growth are endogenous and mutually dependent. The cumulative nature of innovation manifests itself not just at firm and industry levels, but also at the geographic level, creating an advantage for firms locating in areas of concentrated innovative activity. These factors can generate positive feedback loops, or virtuous cycles, as clusters attract additional specialized labor and other inputs, as well as the greater exchanges of ideas.

Economists and strategists are getting better at understanding the dynamics of path dependence and increasing returns, both of which describe aspects of the dynamics of cluster growth in a given jurisdiction. Path dependency implies that the course of technological development or the technological trajectory of specific localities is historically determined and may be the result of serendipity or small events. Krugman (1991) uses the example of candle-wicking, a type of local craft, as a source of competitive advantage in the carpet industry and a reason why the industry located in Alabama. Through such examples, the literature suggests that clusters are seeded by various methods; however, their growth can be facilitated only by building on existing resources. Clusters cannot be built just anywhere from scratch.

Successful jurisdictions are characterized by a rich environment of firms and institutions that form a specialized activity set. A good example is Carlsson's (2002) study of the polymer cluster in Akron, Ohio, which consists of a combination of numerous and diverse small firms as well as larger, multinational firms. Rosenthal and Strange (2003) find that agglomeration benefits are greater with a larger number of small firms: the marginal effect of an employee at a small establishment is greater than that of an employee at a large firm. This finding suggests that small establishments make better neighbors and increase a nearby firm's own productivity. In addition, Carlsson (2002) found that while the multinationals have shifted their production facilities elsewhere, they have kept their polymer R&D facilities and operations headquarters in the area and close to the top three polymer research institutions in the United States, from whom they obtain research and hire skilled labor.

Skilled workers, known in the literature as human capital, or alternatively as talent, are important to geographic clustering. Baker and Trefler (n.d.) confirm that human capital is more productive in cities. Cities act as magnets for human capital, and individuals living in cities receive a wage premium when compared to similar individuals. Labor is less mobile than capital, and workers become more skilled as they

age but then correspondingly become more immobile as they form relationships, raise families, and become members of communities. One important advantage of geographic clustering is that it provides pools of skilled labor that are mutually beneficial: firms can easily find specialized skilled labor, and workers can advance their careers by moving between firms without incurring the costs of relocating.

Within these pools of skilled labor there are potential entrepreneurs who may take ideas out of established firms to form new enterprises. An observed anecdote about entrepreneurship is that individuals do not relocate to start firms but instead use existing local contacts and networks to do so (Feldman 2001). This form of locational inertia indicates that regions with stocks of potential entrepreneurs are more likely to be successful at promoting new-firm startups and establishing new industries. Innovative startups frequently create new markets where no competition exists and demand is not sensitive to product costs. Small firms frequently become the mechanism by which a new technology is commercialized, and their competitive advantage lies in being first to market or to offer a higher-quality product. Lacking the resources of their larger counterparts, small firms must leverage capabilities in their local environments.

The composition of activities in a jurisdictional activity system matters. Jacobs (1969) argues that diversity is important for innovation and that cities are the source of considerable innovation because the diversity of knowledge is greatest in cities. According to Jacobs, the exchange of complementary knowledge across diverse firms and economic agents yield a greater return to economic activity. Feldman and Audretsch (1999) find that diversity across complementary economic activities sharing a common science base is more conducive to innovation than is local specialization. In addition, their results indicate that the degree of local competition for new ideas within a city is more conducive to innovative activity than in a local monopoly. Indeed, we may expect that if a local economy becomes too dependent on one firm or one industry, it may drive out new ideas. Florida and Gates (2002) argue further that a rich cultural environment in a jurisdiction is correlated with the economic success of the city. They use the share of workers in artistic industries such as writers, dancers, painters, and others as an indicator of cultural richness and find a correlation with economic success. In addition, they also find a link between the levels of open-mindedness in a jurisdiction to be correlated with economic success.

Porter (1990) studied clusters around the world, and we now know the features of a jurisdictional environment in which clusters grow. Porter described clusters as a local diamond representing the beneficial interaction of (1) demanding and sophisticated local customers, (2) an intense rivalry among local firms, (3) the local presence of attractive factors of production, and (4) the local presence of relating and supporting industries. These four factors interact to drive continuous innovation and upgrading of the nature of advantage by the firms in the cluster. We are also learning how clusters interact with each other—that is, the clustering of clusters (Porter 2003). Certain clusters (for example, education and knowledge creation; analytical instruments, aerospace vehicles, and defense; communications equipment; information technology; and medical devices) appear to cluster together. The synergies between these industries provide unique activity sets, and areas with multiple and overlapping clusters of expertise facilitate the emergence of new industries such as nanotechnology, bioinformatics, and advanced telecommunications.

It is clear that jurisdictional strategy is not a winner-take-all phenomenon in which a single city comes to dominate. No jurisdiction found on earth is successful at most industries. Each jurisdictional activity system appears to be tuned for certain industries and not for others. Cities are part of the system of cities, or what urban economists call an urban hierarchy: every city has a unique niche that is interrelated to other cities. Duranton and Puga (2001) find that new products tend to be developed in large, diversified cities, which they term nursery cities, the places where new products are incubated. Once an idea is refined, the firm invests in more specialized, smaller cities where production costs are lower because of an emphasis on process innovation and learning-by-doing. Each type of innovation requires a different mix of skills; however, innovations are complementary and each has a role to play in competitive advantage.

It does appear (in North America at least) that very large cities foster the clustering of clusters, which produces even higher wage levels than would be expected under a straight line regression (Institute for Competitiveness and Prosperity 2003). This situation also appears in the United Kingdom, with London emerging as a cluster of clusters. Few cities will be at the top tier of the urban hierarchy; however, every jurisdictional activity set has a place in the hierarchy. Understanding how a city is positioned relative to other cities, not in a competitive

sense but in terms of mutual dependence and differentiation, offers a potential strategic lever.

Uniqueness and adaptation, not uniformity and replication, provide jurisdictional advantage. If all corporate competitors simply benchmark against each other and replicate what the other is doing as part of a corporate strategy, none of them will have an advantage and the benefits will flow to the customers, who will simply play the look-alike firms against each other to suppress prices. Exactly the same principle may be expected to hold for jurisdictions. Competitive advantage and economic growth may come from the creation of unique activity systems, not from simply replicating one another. Benchmarking is currently a popular notion in economic development policy, but the problem with benchmarking is that it appears to encourage duplication and uniformity, not diversity and the exploration of unique advantage.

VI. The Role of Firms in Jurisdictional Advantage

A big question concerns the role of firms in jurisdictional advantage. A firm can act simply as a taker and exploiter of a jurisdiction. A firm is better served, however, when it is an active partner in jurisdictional advantage rather than a passive taker. As soon as it has made investments in a jurisdiction, it has an incentive to make the jurisdiction better so that the jurisdiction provides more advantages in the future.

The existence of externalities suggests that firms receive benefits that are outside the market mechanism. While it may be argued that firms pay more taxes as a result of the higher profits they earn as a result in turn of externalities, it may also be argued that firms can actively cultivate the sources of the agglomerative benefit by investing in local universities, building infrastructure, etc. These investments are tax deductible and provide a means to make targeted investments in jurisdictions rather than relying on the process of government budgeting; that is, those firms may actively build the external resources and infrastructure that benefit their bottom line.

Case study evidence suggests that in the process of building their firm expertise, entrepreneurs also contribute to building external resources and institutions that promote their business interest. In the process of building their firms, entrepreneurs contribute to building the cluster (Feldman 2001). Sponsoring research at local universities, endowing university training programs, and networking all benefit

the initiating firm but also create externalities that will have local benefit. As entrepreneurial businesses begin to thrive, resources such as money, networks, experts, and related services develop in and are attracted to the region. With this infrastructure in place, more entrepreneurial ventures locate and thrive in the region, which ultimately may create a thriving cluster where none previously existed.

In addition, interesting interplays exist between firms and the average wage level of residents of the jurisdiction. In many senses, the better definition of advantage may be the total utility of residents, which includes nonmonetary as well as monetary benefits. Firms can positively influence the overall welfare of residents in the jurisdiction by showing some social responsibility, which produces externalities that further enhance the jurisdiction and also benefit of the firm.

Corporate outsourcing is also important in its relation to jurisdictional advantage. Outsourcing is not an issue of jurisdictional advantage or disadvantage per se. Bangalore does not have jurisdictional advantage over Silicon Valley. Bangalore is a price leader, not a cost leader. It produces dramatically lower wage levels than Silicon Valley does, so in this respect, it is at a great disadvantage. However, Bangalore has a powerful advantage over other parts of India. This is not jurisdictional as much as it is individual. It turns out that many rote programmers, call-center attendants, etc., are learning to their dismay that the clearing price for their skill set in Silicon Valley is a fraction of what it used to be, thanks to falling telecommunications and coordination costs.

An issue, however, is whether the firm has a responsibility to its jurisdiction not to outsource because of the dislocation costs that outsourcing causes. There is no clear answer on this issue. What is clear is that as firms outsource jobs from Silicon Valley to Bangalore, they reduce the number of existing high-wage jobs in Silicon Valley. The question is, Can they create an equal number of new high-paying jobs locally? If they can't, the employment base in Silicon Valley will drop. To the extent that the jurisdiction benefited from the economies of scale associated with large numbers of skilled workers, firms that engage in the net export of high-paying jobs may negatively affect the jurisdictional advantage of their home territory.

What do firms lose when they outsource? Various historical examples, such as semiconductors, show that the countries that were the site of outsourcing became competitors in subsequent rounds of product development. What is lost in outsourcing may be a familiarity with

production and product design that suggest the next round of innovation (Pisano 1994). Chesbrough and Teece (1996) argue that outsourcing may hamper the kind of complex, systematic innovation that creates valuable new-generation business breakthroughs.

VII. Important Issues to Tackle in Jurisdictional Advantage

The challenge for jurisdictional advantage is the translation of theory into practical policy terms. Many existing recommendations are far too generic, emphasizing the desirability of having an educated, creative, and efficient workforce along with a strong physical infrastructure and great centers for research and teaching. Specific recommendations are usually based on reinforcing those activities that a location currently specializes in, in other words, those economic sectors and activities that make up a high share of a city's activities.

Jurisdictional advantage depends on an additional criterion: those activities and capabilities that in combination create a uniquely favorable jurisdiction for some set of industries. While generic capabilities are important, far too many locations satisfy basic criteria; a highly educated workforce, by itself, is no guarantee for a city-specific advantage.

Simply being specialized in an activity also does not mean that a region has a strong advantage in that activity. As we have shown earlier, a jurisdiction can have a disproportionately high number of jobs in a given cluster and still have below-average wage levels in that cluster. Instead, jurisdictional advantage could be established and maintained by implementing policies that enhance unique and location-specific capabilities.

In this context, a key question is, In what practical, action-oriented ways can jurisdictions build a coherent activity system? Given the importance of the private choices of firms and employees, it is unlikely that successful jurisdictional activity systems will be built exclusively or even primarily by governments. Most likely, they will require the cooperation of governments and firms. An important responsibility for governments will be to create incentives that encourage firms and talented employees to take positive cluster- and jurisdiction-building activities.

Taxation policy is likely to be critical. It is unlikely that bidding wars based on targeted tax relief to attract a firm to the jurisdiction may create a positive benefit because of the ability of other jurisdictions to pro-

vide the same benefits. A tax system that accounts for the needs of the specific clusters of interest for the jurisdiction is most likely to produce beneficial results. For example, tradable tax credits allow startup firms to sell their net operating losses and research and development spending to profitable companies or sell the credits back to the state. Mintz (2001) argues that the marginal tax burden on capital and labor prevalent in a jurisdiction influences its prosperity. Therefore, spending programs designed to attract firms (directly or indirectly) may benefit from empirical analysis that quantifies the purported benefits netted against their costs in terms of higher marginal tax burden to ascertain whether these incentives produce net benefits or costs.

One element that has no chance of being unique is the payment of cash incentives to firms. Cash is completely fungible and for that reason, it is the easiest feature for another jurisdiction to match. Cash used as an incentive has no effective leverage. It costs residents of the jurisdiction dollar for dollar against potential personal after-tax income rather than, for example, a badly needed bridge that has the prospect of earning an extremely high return on the investment made.

The evidence suggests that firm-location decisions are not responsive to jurisdictional tax differentials except at the intrametropolitan area (Bartik 1991, Papke 1991). This finding suggests that individual municipalities may gain if they drop their tax rates or offer special incentives. Of course, this approach creates artificial competition. Individual municipalities may benefit if they view themselves as subsidiaries or divisions of the larger city and cooperate to their mutual advantage.

In the knowledge-based economy, social policy may not be discounted as something alien to jurisdictional advantage. It appears to be an integral part of jurisdictional strategy (Porter 1999, Florida and Gates 2002). Attributes that make a jurisdiction an attractive place for talented workers to locate are powerful elements in the activity system of successful jurisdictions. As always in jurisdictional strategy, the question is, Can a given social policy create more benefit in raising the psychic income and quality of life of residents than it takes away in the taxation required to support it?

In establishing policy, jurisdictions will have to find ways to be as nimble as the firms they host. Successful firms are constantly remaking themselves and reinventing their core businesses in response to changing market conditions. It is often easier for them to move to a new location rather than work within the confines of an existing jurisdiction. It

might be incumbent on jurisdictions to change that equation by being responsive and open to working with their resident firms. A frequent complaint is that local government pays attention to a firm only when it threatens to leave rather than cultivating an ongoing relationship with the firm.

Jurisdictional advantage is not simply the battle for high-technology industries. In no jurisdiction do high-technology industries make up a majority of jobs. Even in high-technology states such as Massachusetts and California, high-technology clusters account for less than 20 percent of jobs (Institute for Competitiveness and Prosperity 2003). While high-technology clusters may be attractive, there is as much to be gained by creating a unique activity system for a non-high-technology cluster as in replicating the features of numerous other jurisdictions that are pining after high-technology industries.

Cities remake themselves over time, reflecting structural changes in the economy. Glaeser (2003) shows how Boston has been able to remake its economy three times since the colonial era because of the availability of local skilled capital. Of course, these transitions are costly to individuals and their families when skill sets become obsolete and jobs disappear. This result reiterates the importance of social policy as the backbone of industrial competitiveness and economic growth.

In corporate strategy, an immense variety of activity systems provide competitive advantage; the same is likely to be true with jurisdictional strategy. While many firms look longingly at Wal-mart or Dell and decide they need to pursue a Wal-mart strategy or a Dell strategy, they are much more likely to produce a successful strategy by pursuing an approach tailored to their particular circumstances and assets. Similarly, jurisdictions that try to be the next Boston or Silicon Valley may be pursuing the wrong approach to jurisdictional advantage. Any commitments of resources to an activity involve trade-offs against other opportunities. We have suggested that building jurisdictional advantage necessitates an understanding of what not to do and how investments detract from the coherence of the jurisdictional activity set: policy makers will be required to investigate further into just how to do this at the particular sites they make decisions for.

As with the multiplicity of outcomes of jurisdictional strategy, many different models are likely to emerge with respect to how jurisdictions organize themselves to facilitate the creation and implementation of jurisdictional strategies. Cities are far from homogeneous, with different

functional and industrial specialization, each with a unique position relative to other cities in the economy. Even more so than with corporate strategy, jurisdictional strategy is likely to be only in part an analytical, top-down exercise; it is more likely to be an intensely social, consensus-building exercise. As such, the role of political leadership in jurisdictional strategy is likely to be crucial.

At the national level, it will be increasingly important to understand the role of individual city jurisdictions play in competitive advantage. If a nation is comprised of individual jurisdictions, each following copycat strategies of using cash incentives to attract the currently vogue industries (e.g., biotechnology or nanotechnology) to their jurisdiction rather than another national jurisdiction, the nation's prosperity potential will be diminished. If instead the nation is comprised of individual jurisdictions, each attempting to create an activity system that is uniquely beneficial to a particular cluster or agglomeration of clusters by investing in attributes that make it particularly attractive to firms and talent in those clusters, the nation will have an increased prosperity potential. In this paper, we have argued that jurisdictions may benefit from a strategic orientation that considers (1) the unique and not easily replicated assets, resources, and skill set contained in a jurisdiction; (2) the position of the jurisdiction vis-à-vis the hierarchy of cities in the national and world economy; and (3) the maximization of wages and property values within the juridiction. What we have suggested is that the role of jurisdictions and jurisdictional advantage deserves a place on the policy agenda.

Notes

Prepared for the National Bureau of Economic Research (NBER) Innovation and the Economy Conference (Washington, DC, Tuesday, April 13, 2004). This paper has benefited from comments and suggestions by Scott Stern, Josh Lerner, Will Strange, and Wendy Dobson. Rich Bryden at the Institute for Strategy and Competitiveness provided assistance with data. Comments are welcome.

1. We will use the term *city* to refer to the integrated economic entity such as the metropolitan statistical areas as defined by the U.S. Bureau of the Census. Thus, we focus on the city as a focal point for economic activity, similar to people saying that they live in Los Angeles even though their residence is in West Hollywood. This use of the term *city* typically encompasses multiple political or administrative units. Rather than viewing themselves in competition, these units may be conceptualized as subsidiaries, divisions, or subunits of a going concern.

2. The location quotient is calculated as the percentage of activity in a city, and industry is normalized by the national percentage of activity in the industry. A location quotient

equal to 1 indicates that the activity is represented in the city exactly as mirrored in the national economy. When the location quotient is greater than 1, the industry has a greater representation in the city than would be expected, which is evidence of geographic concentration. The larger the location quotient, the greater the concentration of the industry in the city.

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