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JURISDICTIONAL ADVANTAGE

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ABSTRACT

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Jurisdictional Advantage

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 lower 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. Moreover, 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, 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 as well as those 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 concludes by considering the challenges to implementing jurisdictional advantage.

Alternatives to Shaping a Jurisdiction

There are two extreme philosophies available to policy makers to foster 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 a variety of 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 thing a jurisdiction can do is 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 is not without drawbacks. Since industrial development demonstrates high levels of path dependence and increasing returns, 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 very long time. Moreover, the existence of market failures associated with innovative activity inhibits the efficient allocation of resources, suggesting that there may be a role for government involvement.

An opposing philosophy advocates aggressive planning towards a targeted industry in what is a "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, currently, 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.

There are numerous examples where governments have not been able to establish clusters by fiat. One illustrative 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 R&D sector, the net effect was several strategic partnerships rather than broad-based economic development. Even in cases where policymakers 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 start-up companies it is

difficult for a jurisdiction to garner longer 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 and factor inputs and prevailing production technology. Co-location increases awareness of emerging trends and reduces uncertainty for firms. Innovation clusters spatially in 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, there is a tendency for activities which are ahead to get 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. Moreover, 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 ableto 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 there are so many factors that influence outcomes. However, given that future prosperity and quality of life are at stake, questions of how this might be done are of more than just academic interest.

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. However when we think about economic development specifically within the context of cluster formation and industrial competitiveness, the analogy is instructive. 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 unique activity system is a web of activities that, when working together, provide 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

US market over the past 30 years, in level of profitability, stability of earnings and growth in market share. Competitive advantage is not achieved through any single thing it does such as flying a completely standard fleet of Boeing 737s, or by flying from secondary airports, or having the most frequent daily departures from each of its locations, or by utilizing the Internet rather than travel agents for booking. Rather, Southwest achieves advantage by performing all of these (and more) activities in ways that fit together and reinforce each other to produce a significant and sustainable cost advantage over all of its competitors, 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. It is important to 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, 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.

Alternatively, a firm's activity system can 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 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 non-standard 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, as well as a unique investment philosophy, which 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 importantly 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 an activity system that is unique and is valuable in producing either a low cost or differentiation advantage over other jurisdictions.

Seeking Jurisdictional Advantage

Since a jurisdiction does not have shareholders, per se, the question is for whose benefit should a jurisdiction seek advantage? 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 do these things 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 their 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. Since the majority of American households own their own homes increases in property values are broadly distributed across the population. Moreover, increases in property values yield higher tax revenues for the jurisdiction which, if used judiciously, 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, there are two adjustments that 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 would be to adjust after-tax wages for major differences in government services and amenities provided. So if after-tax wages were used to compare jurisdictions of a US city with a Canadian city, there should be an adjustment for the fact that the residents of the Canadian city receive greater health care benefits through government expenditure. For individuals living in the U.S more of their health care costs would be paid for from after-tax wages.

Table 1 Here

Table 1 presents differences in wages by jurisdiction for those industries which have some demonstrated competitive advantage. As a benchmark, the average annual wage for all U.S. industries was approximately $33,200 in 2001. We list city-industries that have a higher-than-average national wage for the industry, a location quotient greater than one, indicating geographic concentration relative to national employment, and more than 10,000 employment. This table demonstrates that while cities specialize in certain industrial clusters, that specialization varies widely across cities in the same industry.

Creating and sustaining positive wage differentials is the essence of jurisdictional advantage. It is important to note that this is not synonymous with attracting high-technology industries, which has been 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. Equally transformative are investments in existing, more mature industries that are already in place and can invest as a means to compete with lower-cost locations. The relatively low-technology financial services cluster is one of highest paying clusters. 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 that is based on efficient inventory control and the process of innovation

In addition, many of theses clusters represent well-know associations between places and industries. For example, distribution services in Atlanta have a long history as a transportation hub and Los Angeles as 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 others industries (Porter 2003).

Across the US 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 2 present 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 from 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 fixture, equipment and services is in 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 2 had a location quotient greater than 1, which indicates to relative specialization for the industry within the geographic unit[2], a minimum of one thousand 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.

Table 2 here

To construct jurisdictional advantage requires a jurisdictional strategy – a set of choices which produces a jurisdictional activity system that generates either low cost advantage or differentiation advantage. The "customers" for a jurisdiction are job-providing entities – primarily, but not exclusively, firms. Jurisdictions are, in many respects, collections of firms, both large and small. And just as firms are one economic entity that organizes resources and production, jurisdictions are themselves another economic entity that provides a platform for similarly organizing resources. High wage jobs are the reward for the jurisdiction that can generate advantage and in doing so 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 start-up 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 start-up 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 importantly, these firms are relatively geographically immobile as entrepreneurs build upon 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 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 start-ups 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 thing that comes to mind. A low-wage jurisdictional strategy is like a low price company strategy. It does not produce advantage. At a company, a low price strategy produces low profits for the shareholders and is dangerous because it leaves the company vulnerable to being out-invested 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 for its residents not advantage.

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. There is absolutely nothing unique or hard to replicate in terms of giving dollars away to firms. The evidence is that this type of strategy is a race to the bottom in a zero-sum game. There is no evidence that it leads eventually to higher wages, which is the measure of a

successful low cost jurisdictional strategy. Moreover, these types of operations are frequently the first to be closed 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 among the highest results of any North American jurisdiction and it accomplished this superior outcome with below-average costs through unique approaches to management of the system (Chen and Mintz 2004). This allows Edmonton to charge lower personal taxes, other things being equal, which increases the after-tax wages of residents, enhancing 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 by locating near a number of industry-leading biotech firms already operating in the greater-Boston area. These externalities are outside of the ability of markets to price but there is evidence to suggest that firms gain economic value from them. Firms are simply more productive in certain locations, better able to innovate and create unique value. It is this greater productivity that translates into higher profits and higher wages.

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 literatures 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 this is the basis of jurisdictional strategy and advantage.

Economists have long known that industries cluster spatially for a variety of reasons: what is critical is that these clustered industries tend to be more innovative and have greater productivity which is why we observe wage premia for such clusters. An important distinction is between the geographic concentrations of production and the location of innovation. Whereas the geographic concentrations of production is often due to the location or 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, if 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 efficiently allocate. The significance of localized knowledge spillovers as inputs to firms' innovative activities suggest 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 be cognizant of 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 where there are necessary resources: resources that have accumulated due to 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 technological trajectory of specific localities is historically determined and may be the result of serendipity or small events. Krugman (1990) 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 a variety of methods; however, their growth can only be facilitated by building upon existing resources. Clusters cannot be built just anywhere from scratch.

Successful jurisdictions are characterized by a rich ecology of firms and institutions which 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 operation headquarters in the area and close to the top three polymer research institutions in the United States from whom they source 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 (2003) 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 which are mutually beneficial as 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 fact about entrepreneurship is that individuals do not relocate to start firms but instead use existing local contacts and networks to start their firms (Feldman 2001). This form of locational inertia indicates that regions that hold stocks of potential entrepreneurs are more likely to be successful at promoting new firm start-ups and establishing new industries. Innovative start-ups 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 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, it is the exchange of complementary knowledge across diverse firms and economic agents which 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 specialisation. 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 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) intense rivalry among local firms; 3) local presence of attractive factors of production; and 4) 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 with 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 the planet is good at most industries. Each jurisdictional activity system appears to be tuned for certain industries and not for others. . Moreover, 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. Puga and Duranton (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 due to 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.

However, 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 & Prosperity 2003). This also appears to be the case in the U.K., with London emerging as a cluster of clusters. Very 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 offer a potential strategic lever.

Uniqueness and adaptation, not uniformity and replication, provide jurisdictional advantage. In corporate strategy, if all competitors simply benchmark against each other and replicate what each other is doing, there will be no advantage and the benefits will flow to the customers, who will simply play off the look-alike firms against each other to suppress prices. Exactly the same principle may be expected to hold for jurisdictions. Competive advantage and economic growth may come from the creation of unique activity systems, not from simply replicating one another. Benchmarking is currently a very 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.

The Role of Firms in Jurisdictional Advantage

There is a big question as to the role of firms in jurisdictional advantage. A firm can act simply as a taker and exploiter of a jurisdiction. However, a firm is better served by being 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.

Moreover, the existence of externalities suggests that firms are receiving benefits that are outside of the market mechanism to price. While it may be argued that firms pay more taxes as a result of the higher profits they earn as a result of externalities, it may also be argued that firms may actively cultivate the sources of the agglomerative benefit by investing in local universities, building infrastructure, etc. Moreover, these investments are tax deductible and provide a means

to make targeted investments in jurisdictions rather than relying on the process of government budgeting. This is to say that firms may actively build the external resources and infrastructure that benefit their bottom line.

There is case study evidence 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 growing 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, there are interesting interplays 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 non-pecuniary benefits as well as monetary benefits. Firms can positively influence the overall welfare of residents in the jurisdiction by showing aspects of social responsibility which produce externalities that further enhance the jurisdiction and also benefit the firm.

Corporate outsourcing is also interesting 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, so in this respect it is highly disadvantaged. (Even as Bangalore is powerfully advantaged over other parts of India.)This is

not jurisdictional as much as it is individual. It turns out that many rote programmers, call centre attendants, etc. are learning to their dismay that thanks to falling telecommunications and coordination costs, the clearing price for their skill-set in Silicon Valley is a fraction of what it used to be.

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 are reducing the number of existing high wage jobs in Silicon Valley. The question is whether they can 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 impact the jurisdictional advantage of their home territory.

We may ask what firms lose when they outsource. There are various historical examples, such as semiconductors, where 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 1995). Chesbrough and Teece (1996) argue that outsourcing may hamper the kind of complex, systematic innovation that creates new generation valuable business breakthroughs.

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 productively efficient workforce, along with strong physical infrastructure and great centers for research and teaching. Specific recommendations are usually

based on reinforcing those activities that a location is currently specialized 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 which, in combination, create a uniquely favorable jurisdiction for some set of industries. While generic capabilities are important, there are far too many locations that satisfy basic criteria: a highly educated workforce, by itself, is no guarantee for a city-specific advantage.

Similarly, simply being specialized in an activity 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, it 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 provide the same benefits. A tax system that understands the needs of the specific clusters of interest for the jurisdiction is most likely to produce beneficial results. For

example, tradable tax credits allow start-up firms to sell their net operating losses and research and development spending to profitable companies or selling 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 that are designed to attract firms (directly or indirectly) may benefit from empirical analysis that quantifies the purported positive impacts netted against their costs in terms of higher marginal tax burden in order 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. Further, 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 which has the prospect of earning a very high return on the investment made.

The evidence is that firm location decisions are not responsive to jurisdictional tax differentials except at the intra-metropolitan area (Bartik 1991, Papke 1991). This suggests that individual municipalities may gain if they drop their tax rates or offer special incentives. Of course, this 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. The question, as always in jurisdictional strategy, is whether a given social policy

creates 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. Many times it is easier for them to move to a new location rather than work with 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 only pay attention to a firm when it threatens to leave, rather than cultivating an on-going 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% of jobs (Institute for Competitiveness & 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 to replicate the features of numerous other jurisdictions that are pining after high technology industries.

Cities remake themselves over time, reflecting structural change in the economy. Glaeser (2003) shows how Boston has been able to remake its economy three times since the Colonial period, due to 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 reiterates the importance of social policy as a backbone of industrial competitiveness and economic growth.

In corporate strategy, there is an immense variety of activity systems that provide competitive advantage. It is likely to be the case with jurisdictional strategy. While many firms look longingly at Walmart or Dell and decide they need to pursue a "Walmart strategy" or a "Dell strategy", they are much more likely to produce a successful strategy by pursuing an approach that is tailored to particular circumstance 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, there are likely to be many different models that 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 only in part be an analytical, top-down exercise. It is also 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 copy-cat strategies of using cash incentives to attempt to attract the currently vogue industries (e.g. biotechnology or nanotechnology) to their jurisdiction rather than

another national jurisdiction – the nations' 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 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 a vis the hierarchy of cities in the national and world economy; and 3) maximizes 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.

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Table 1:

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	158,727	4.7	1.75	$92,432	Financial Services
Boston	54,811	6	2.25	$77,380	Information Technology
Boston	35,210	7.9	2.94	$75,875	Communications Equipment
Boston	209,555	4.2	1.56	$67,853	Business Services
Boston	76,299	3.8	1.42	$64,680	Distribution Services
Boston	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
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

Table 1:					
Metropolitan Area	2001 Total Employment	2001 Share of National Employment	2001 Employment Location Quotient	2001 Average Wages	Industry Cluster
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
Los Angeles-Long Beach	18,517	4.1	1.22	$63,183	Communications Equipment
Los Angeles-Long Beach	51,679	13.8	4.09	$58,420	Aerospace Vehicles
Los Angeles-Long Beach	177,625	16.2	4.79	$57,800	Entertainment
Los Angeles-Long Beach	84,820	5.2	1.55	$45,397	Transportation and Logistics
Los Angeles-Long Beach	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	18,683	2.5	1.75	$53,438	Analytical Instruments
Minneapolis-St. Paul	20,065	5.4	3.8	$51,806	Medical Devices
Minneapolis-St. Paul	13,622	2.1	1.48	$41,023	Production Technology
Minneapolis-St. Paul	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
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
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

Table 1:

Metropolitan Area	2001 Total Employment	2001 Share of National Employment	2001 Employment Location Quotient	2001 Average Wages	Industry Cluster
Pittsburgh, PA	43,504	1.9	2.08	$32,817	Education and Knowledge Creation
Portland-	10,844	1.4	1.9	$65,845	Analytical Instruments
Raleigh-Durham	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
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	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

Table 2: Average wages differ greatly across and within industry clusters

	(2) Average Wages	(3) Ratio of Wages to Average City Wage
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
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
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
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

Endnotes

[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 as when people say that they live in L.A. while 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 normalized by the national percentage of activity in the industry. A location quotient equal to one indicates that the activity is represented in the city exactly as mirrored in the national economy. When the location quotient is greater than one the industry has a greater representation in the city than would be expected and this is evidence of geographic concentration. The larger the location quotient, the greater the concentration of the industry in the city.