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Evaluations of Regional Competitiveness: Making a Case for Case Studies

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ABSTRACT. This paper provides an overview of the concepts of regional competitiveness, including definitions, conceptual models, measurements, and the benefits and shortcomings of following a strategy to enhance competitiveness. Next, city-region rankings and indices of competitiveness are reviewed and the usefulness of these studies is summarized. Potential roles for regional scientists for improving (1) evaluations of regional competitiveness and (2) applications of evaluations to regional development policy are suggested. Recommendations are made regarding the need for additional case study research by regional scientists in order to improve the quality and relevance of information used by public policy makers. Quality case studies also will enhance the roles of regional scientists in the policy process concerned with improving a region's prospects for economic growth and development.

Key Words: regional competitiveness, metropolitan rankings and indices, case study research, regional economic development policy

JEL Classifications: R11, R58

1. INTRODUCTION

Regional competitiveness, how an area rates in comparison with others, is receiving increasing attention in trade publications and the popular press. States and metropolitan areas proudly point to high rankings or grades in reports on livability, entrepreneurial environment, innovative capacity, workforce preparedness, and strength of the local economy. Regions with relatively low ratings in these publications are quick to note shortcomings in the studies' methodologies or provide examples of alternative reports where the areas' rankings are more favorable.

A focus on ranking regional competitiveness is a relatively recent phenomenon that coincides with globalization and evolution of the knowledge economy. Research by regional scientists supports this increasing emphasis on competitiveness among regions. Camagni (2002) proposes that specialization and production in a regional economy are determined by a principal of absolute advantage and not the law of comparative advantage. As such, Camagni (2002, p. 2401) argues that "...the conclusion that each region will always be granted some specialization and role in the interregional division of labor is not valid." He concludes that "lagging territories" must improve the competitive climate (defined as human, social, and relational capital endowments) or risk exclusion and decline. Recent research also indicates that initial competitive advantages are likely to be reinforced by the redistribution of human capital and innovative activity across regions. Berry and Glaeser (2005, p. 436) find that "initial high income, and high skill, places are increasingly attracting more people (with college degrees)." Berry and Glaeser attribute this to skilled people starting businesses that have a high propensity to hire other skilled people. Appold (2005) also suggests that an important determinant of the

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location of private R&D facilities is the social influence process or mimetic effect. Firms and R&D facilities may imitate others and co-locate because they assume that others found something advantageous at the location. Thus, Appold (p. 33) finds evidence of the “spatial agglomeration of employment by co-location without connection.” In addition, Feldman (2000, p. 389) notes that “knowledge spillovers are geographically bounded within a limited space;” therefore, the competitive advantages resulting from local innovative activity and skilled labor are likely to remain highly localized.

Communities and regions appreciate the concept of absolute comparative advantage and they are investigating policies and programs to enhance this. Regional scientists and economic development organizations/institutions attempt to provide insights into regional competitiveness through extensive research of the determinants of economic development and rankings/indices of components of competitiveness. For many communities and states, however, published works on regional competitiveness are complicated, confusing, and at times contradictory. As a result, regional policy makers often turn to case studies of other communities that they deem to be “success stories” in the New Economy or to “best practices” of programs implemented elsewhere. Public policy recommendations (e.g., incubators, endowed chairs, venture capital funds) are then proposed based on perceptions of successes in the case studies and best practices.

In general, regional scientists have had relatively little involvement in the case studies or best practices components of analyses of regional competitiveness. This is, in my opinion, unfortunate because an appreciation of the history and structure of the regional economy would be beneficial in assessing the prospects for and determinants of regional economic competitiveness. The purpose of this address is to encourage a greater role for regional scientists in conducting case studies and best practices and/or assisting in drawing the appropriate conclusions from existing studies. I initiate the discussion with a short review of the literature on regional competitiveness and ratings by regional scientists and others. Next, I make suggestions for ways that we can help community leaders “get more” from their examinations of case studies and best practices. Finally, I make a case for a larger role for case study research in regional science.

2. OVERVIEW OF REGIONAL COMPETITIVENESS

The literature on regional competitiveness in the academic and popular press covers four principal subject areas: (1) definitions, conceptualizations, and measures of competitiveness; (2) benefits and shortcomings of following a strategy to enhance local competitiveness; (3) the estimation of competitiveness indices (i.e., ratings, rankings, scores, grades) for states and metro areas; and (4) methodological shortcomings with the more visible ranking studies. The following section provides only an introduction to the four discussion areas. The interested reader may refer to the December, 2004 issue of *Regional Studies* for seven excellent papers on regional competitiveness. The purpose of the following discussion is to highlight the extensiveness of the literature and diversity of opinions regarding competitiveness and its role in regional economic prosperity. Kitson, Martin, and Tyler (2004, p. 992) state that “this new focus on ‘territorial competitiveness’ is itself highly problematic... (and)...The concern is that there is an elusive concept, flawed indicators, and over-prescribed policies.” Reliance by policy makers on case studies and best practices for insights into regional competitiveness may be a logical response to a highly elusive concept.

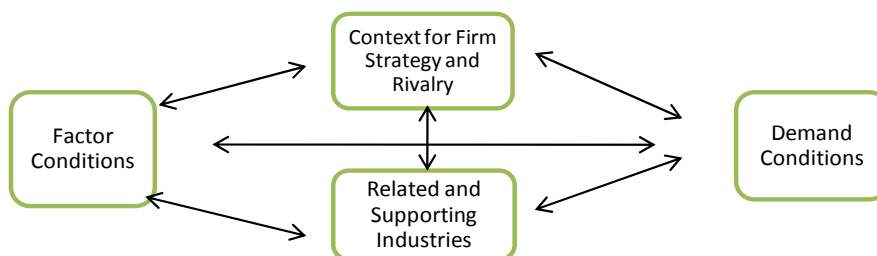
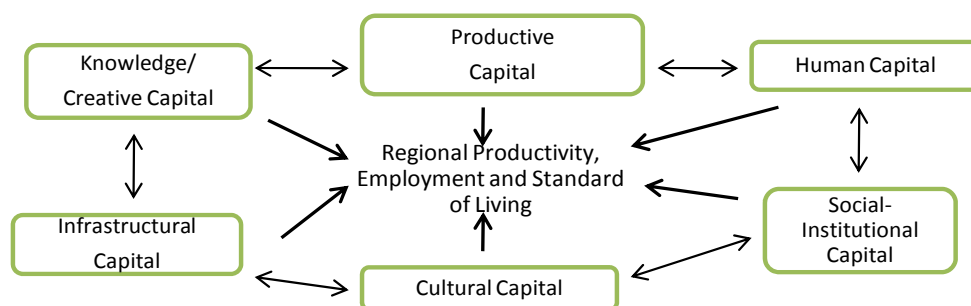
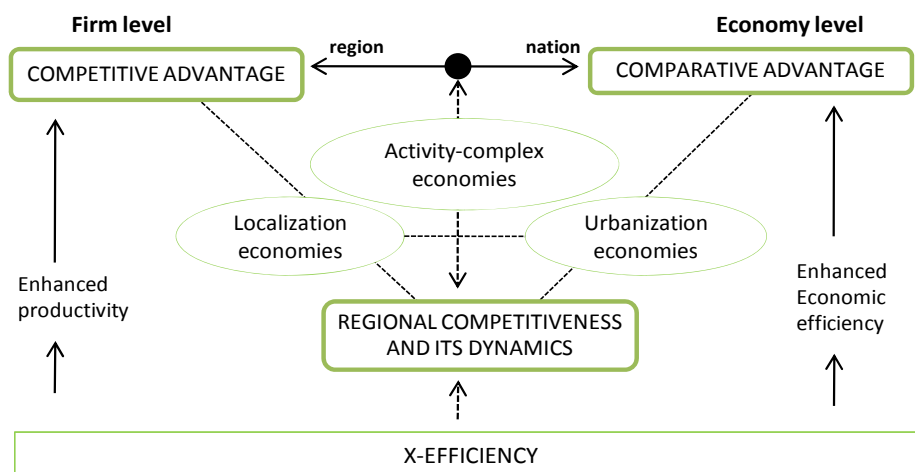
2.1. Definitions, Conceptualizations, and Measures.

2.1.1. Competitiveness Defined. Definitions of regional competitiveness are almost as numerous as the papers written about competitiveness. Most definitions include profitable and expanding firms and an improving quality of life for residents. Storper (1997, p. 20), in one of the earlier works on regional competitiveness, defined competitiveness as “the ability of an economy to attract and maintain firms with stable or rising market shares in an activity while maintaining or increasing standards of living for those who participate in it.” Similarly, Huovari, Kangasharju, and Alanen (2001, p.1) consider regional competitiveness “as the ability of regions to foster, attract, and support economic activity so that its citizens enjoy relatively good economic welfare.” Other definitions or descriptors of competitive regions include the ability to maintain a system of innovation (European Commission, 2004), ability to compete in national and global markets (Budd and Hirmis, 2004), sustainability of the process so as not to compromise the welfare of future generations (European Competitiveness Report, 2000), and an ability to adapt to changing market conditions (Porter, 1998, North, 2005). Finally, Kitson, Martin, and Tyler (2004) rely on revealed preferences to distinguish competitive regions from those less so. They (p. 997) also propose that “ultimately competitive regions and cities are places where both companies and people want to locate and invest in.”

2.1.2. Conceptualizations. Conceptual models provide the framework for assessing regional competitive advantage. These models generally include the factors or key components of a competitive economy and interrelationships between factors. The best known of these models of competitiveness is the Porter (1990) diamond of national advantage (Figure 1a). Porter’s diamond is designed to illustrate the determinants of national competitive advantage, but the concept also is used in discussions of regional advantage. Porter emphasizes that the diamond represents a self-reinforcing system where the impacts associated with changes in one determinant (e.g., factor endowments or conditions) may be affected by situations in another determinant (e.g., firm strategy, structure, and rivalry). Porter’s conceptual model is the foundation for an economic development strategy focused on clusters and innovation. In his analysis of regional economic performance differences in US BEA Economic Areas, Porter (2003, p. 571) concludes that “performance is strongly affected by the strength of clusters and the vitality and plurality of innovation.”

Alternative perspectives of the key determinants of competitiveness are provided in Kitson, Martin, and Tyler (2004) and Budd and Hirmis (2004). Kitson, Martin, and Tyler attribute (p. 994) regional differences in growth and development to the characteristics of the local economy (“soft externalities”) that influence the “efficiency, innovativeness, flexibility, and dynamism” in which factor endowments are used and local firms operate. The authors identify six characteristics critical to fertile environments for productivity (Figure 1b): productive capital, human capital, social-institutional capital, cultural capital, infrastructural capital, and knowledge/creative capital. Kitson, Martin, and Tyler’s conceptualization of regional competitiveness is consistent with the development of “regional innovation systems” as drivers of local economic development.

Budd and Hirmis give external economies of scale and scope a significant role in determining regional competitiveness (Figure 1c). Budd and Hirmis (2004, p. 1025) argue that three types of agglomeration economies (localization, urbanization, and activity-complex) “...provide the indirect transmission mechanism that brings together the comparative advantage at the firm level and the comparative advantage at the economy level of a region.” The theory of

Figure 1. Conceptualizations of Competitiveness**1a. The Porter diamond framework (Porter, 1998)****1b. Bases of regional competitive advantage (Kitson et al., 2004)****1c. Framework for assessing regional competitiveness capacity (Budd and Hirmis, 2004)**

X-efficiency is used as a conceptual framework to integrate firm productivity, agglomeration economies, and the resulting regional competitiveness capacity. According to Budd and Hirmis (2004, p. 1025) “A more X-efficient region is one in which total locational endowments, including agglomeration economies, are exploited optimally by indigenous firms and industries.”

2.1.3. Measures of Competitiveness. Suggested measures of regional competitiveness vary according to whether the study focuses on inputs critical to the regional production function or outputs and outcomes of the production process. An excellent summary of the input, output, and outcome measures used in 22 studies of city-region competitiveness is provided in Greene, Tracey, and Cowling (2007). Research that addresses the input side of the regional production function generally recommends multiple measures so as to better capture the diversity of factors that contribute to a region’s competitive capacity. For example, the “Development Report Card for the States” (Corporation for Enterprise Development [CfED], 2006) uses 38 measures of development capacity divided into five principal categories (human resources, financial resources, infrastructure resources, innovation resources, and amenity resources and natural capital).

A reliance on input measures to reflect competitiveness is complicated by the absence of regional production functions that specify the roles of the selected inputs in enhancing regional economic development, thus other researchers focus attention on regional outputs and outcomes resulting from the development process. Krugman (1990) states that the critical output measure is productivity or output per worker, while Porter (2000) prefers productivity (output per unit of capital and labor) in the traded goods and services sectors. Kitson, Martin, and Tyler (2004) note that productivity is very difficult to measure, and in addition, increases in regional productivity may be attained simply by eliminating low-productivity jobs. That is, unfavorable outcomes (job losses) may result from what appear to be favorable changes in outputs and competitiveness. Thus, Kitson, Martin, and Tyler add that competitiveness also should include outcome measures such as the ability to sustain a high rate of employment amongst the working age population, and Budd and Hirmis (2004) suggest consideration of the quality of jobs available. Perhaps the most comprehensive set of outcome measures for competitiveness is provided by Kresl (1995, p. 51) in his six attributes of a competitive urban environment.

- High-skill, high-income job creation.
- Goods and services produced should be environmentally orientated.
- Goods and services with high-income elasticity of demand and similar characteristics should be the basis of production.
- Full-employment considerations should determine the suitable rate of growth, without overheating markets.
- Specialization of activities should be based on future potential of the city, not on acceptance of present configurations.
- Potential of the city to move up the urban hierarchy.

2.2. Benefits and Shortcomings of a Competitiveness Strategy

Excellent discussions of potential benefits and costs associated with an institutionalized regional competitiveness strategy are provided in Malecki (2004) and Turok (2004). The focus of these papers is the potential impacts from competitiveness strategies targeted at “high road” (e.g., enhanced productivity) versus “low road” (e.g., reduced costs) development alternatives.

Malecki and Turok suggest five principal benefits from assessing relative competitiveness and undertaking efforts promoting local competitiveness. First, attention to competitiveness may help public officials and local residents better appreciate the current economic environment and the local conditions and resources that influence firms' sustainability. Second, competitiveness assessments may identify weaknesses in the local economy and encourage the delivery of public resources to these program areas. Third, an analysis of regional competitiveness encourages public officials to take a longer-term perspective on the economic development process, thus providing them with greater incentives to engage in long-term development policies and programs. Fourth, policy makers can better assess progress in the regional economy if multi-year data are collected for analysis of regional competitiveness. Fifth, the findings of a regional competitiveness study in terms of local strengths may be used in promotional or marketing programs for the area.

Malecki (2004) and Turok (2004) recognize that all competition is not good and they note three principal drawbacks to regional competitiveness strategies. First, competition may be wasteful if subsidies are used to encourage the relocation of competitiveness-enhancing businesses such as corporate headquarters or research and development facility. A subsidy war for R&D facilities may provide little net benefit to society, much like the subsidy wars for manufacturing facilities. Second, a focus on relative competitiveness as an economic development strategy may result in a misallocation of resources from a state and local perspective. Civic pride and inter-regional rivalry may encourage the funding of duplicative programs or facilities. In addition, resources may be reallocated from low-visibility programs (e.g., pre-K education) to high-visibility programs (e.g., endowed chairs at state universities) in an effort to attain a higher competitiveness ranking. Bristow (2005) is especially apprehensive regarding the potentially detrimental impacts of competitiveness strategies on overall community development policy, and he (p. 299) argues that "The discourse of competitiveness strongly appeals to the stratum of policy makers and analysts who can use it to justify what they are doing..." Third, an institutionalized competitiveness strategy may contribute to widening social inequalities if there are consistent losers among social groups and communities. For example, small and peripheral regions are at a competitive disadvantage in the New Economy (Partridge et al., 2007), and this disadvantage will be exacerbated if investment and talent are concentrated in the privileged regions in the name of enhanced regional competitiveness. In sum, Turok, (2004, p. 1075) argues that "Competition is unlikely to be always or inevitably beneficial, or indeed harmful. Much depends on the form it takes and the context in which it is pursued..." Thus, as with all good public policy analysis, programs and policies to enhance regional competitiveness should be monitored to better determine the size and distribution of benefits and costs associated with the programs.

2.3. City-Region Rankings and Indices

Abundant in the literature are studies that rank or grade regions based on selected social and/or economic attributes. These publications include such diverse attributes as creativity (Stolarick, 2003), entrepreneurial environment (Goetz and Freshwater, 2001 and Entrepreneur.com, 2006), innovative capacity (Hall, 2007), and best places to live (Ashford et al., 2007). Of special interest to this paper are studies that rate the competitiveness of local and state economies. Five highly visible rankings reports are the Milken Institute Best Performing Cities (DeVol, Bedroussian, and Kim, 2007), the Beacon Hill Institute *Metro Area and State Competitiveness Report* (Haughton and Sirin, 2004), the Policom Corporation Economic

Strength Rankings (Fruth, 2007), The 2007 State New Economy Index (Atkinson and Correa, 2007), and the Development Report Card for the States (CfED, 2007). A summary of the data and methodologies used in these five studies is provided in Table 1. An overview of numerous national and regional indices of innovation is provided by the State Science and Technology Institute (SSTI, 2002).

The reader will note the diversity of the reports with respect to the city-regions selected for ranking, measures or indicators selected to reflect the components or categories of competitiveness, and the procedures chosen for combining the measures into overall indices, rankings, or grades. For example, among the three reports for cities, the study areas range from the 50 largest metropolitan areas in Haughton and Sirin (2004) to 363 Metropolitan Statistical Areas and 576 Micropolitan Statistical Areas in Fruth (2007). The ranking reports also differ greatly in terms of indicators selected to reflect regional capacity and competitiveness. The CFED (2007) uses 67 measures assigned to 15 sub-indices that are then assigned to three main categories (performance, business vitality, and development capacity).

Alternatively, DeVol, Bedroussian, and Kim (2007) assign 26 indicators to five principal categories. Finally, the ranking studies vary in how the selected indicators are combined into the final index, rank, or grade. For example, Haughton and Sirin (2004) use no weights (or alternatively equal weights) on the 37 indicators that determine the eight sub-indices and again no weights on the eight sub-indices that determine the overall metro index. Similarly, all 67 measures in the Development Report Card for the States received equal importance in the sub-indices. Weights are provided for indicator measures in the remaining three reports presented in Table 1. These studies note that weights are selected to account for correlation among the indicators and reflect the relative importance of the indicator to the “score” in the sub-indices and overall index. Unfortunately, few insights are provided in the three competitiveness reports regarding the criteria or methodology for selecting weights for indicators.

The diversity of indicator measures and weighting schemes used in the competitiveness rating reports results in marked variability among the rankings provided by the studies. Table 2 provides the 10 highest ranked metropolitan areas as stipulated in the Fruth (2007), DeVol, Bedroussian, and Kim (2007), and Haughton and Sirin (2004). The “top ten” lists are drawn from the 50 largest MSAs so as to be consistent with the set of cities selected by Haughton and Sirin (2004) in the Beacon Hill Institute report. Three observations are drawn from Table 2. First, there are numerous similarities in the three lists—nine metropolitan areas are named on two lists and Charlotte, North Carolina is ranked in the top ten on all three reports. Second, there are many differences in the three reports—nine cities are listed on only one of the three top ten lists (Nashville, San Diego, Atlanta, Riverside-San Bernadino, Houston, Boston, Seattle, Denver, and Portland). Third, the top ranked metro area in two of the reports (Boston on BHI and Riverside-San Bernadino on Milken) do not make the top ten lists on the other two ranking studies. In summary, the similarities and differences among the ranking reports are sufficient to provide both support for findings from regions with high rankings and criticism from regions with lower grades.

**Table 1. Summary of Data and Methodologies Used
in Five Regional Competitiveness Ratings Reports**

A. Development Report Card for the States (CfED, 2007)

- Grades (A-F) are provided for three main categories: Performance, Business Vitality, and Development Capacity. No overall grade is provided.
- Data are collected for 67 measures. The 67 measures are assigned to 15 sub-indices and the sub-indices are assigned to the three main categories.
- Each state is ranked 1 (best) to 50 (worst) on every measure. Sub-indices scores are the average rankings of the measures in the sub-indices. Main category (index) scores are the sum of sub-indices' scores within the category. No weights are used in the scoring.
- Grades are based on rank: 1-10 (A), 11-20 (B), 21-35 (C), 36-45 (D), 46-50 (F).

B. The 2007 State New Economy Index (Atkinson and Correa, 2007)

- Rankings and scores are provided for 26 measures or indicators of New Economy capacity and activity. The 26 indicators are assigned to five categories: knowledge jobs, globalization, economic dynamism, digital economy, and technological innovation.
- Indicator scores are based on the standard deviation of each score from the mean score for all states.
- The five principal category scores and the overall state scores are based on the sums of weighted indicator scores. Weights are selected to reflect the relative importance of indicators/categories and account for correlated indicators.

C. Policom Corporation Economic Strength Rankings, 2007 (Fruth, 2007)

- Ranks (1-363) all Metropolitan Statistical Areas and ranks (1-576) all Micropolitan Statistical Areas.
- Average annual increases for three time periods (2001-2005, 1996-2005, and 1986-1995) are collected for 19 measures of worker earnings, jobs, and wages and four measures of welfare and Medicaid expenditures.
- Percentage increases are "adjusted mathematically for consistency." Measures that reflect wages and the 1996-2005 period are weighted twice.
- The growth rates for each measure are ranked and the measures' rankings are totaled. Areas are then re-ranked (e.g., 1-363 for MSAs) based on the summation of all rankings.

D. Metro Area Competitiveness Report, 2005 (Houghton and Sirin, 2004)

- Ranks the largest 50 metropolitan areas based on eight principal categories: government and fiscal policies, security, infrastructure, human resources, technology, business incubation, openness, and environmental policy. Thirty-seven indicators are assigned to the eight categories.
- Each of the 37 measures is normalized with a mean of 5 and standard deviation of 1. Indices for the eight principal categories are simple averages of the normalized values of the assigned indicators. Next, the eight sub-indices are normalized (mean = 5, standard deviation = 1).
- The overall index is the simple average of the eight normalized sub-indices. The overall index is normalized with mean of 5 and standard deviation of 1. No weights are used on the 37 measures or eight sub-indices.

E. Best Performing Cities, 2007 (DeVol, Bedroussian, and Kim, 2007)

- Indices and rankings are provided for 200 "largest" cities and 179 "small" cities.
 - Indices are based on 9 measures: rates of job growth over three time periods, rates of wage and salary growth over two periods, relative high-tech GDP growth rate over two periods, high-tech GDP location quotient, and number of high-tech industries with LQ > 1.
 - All measures are expressed relative to the U.S. average (U.S. average = 100)
 - Overall city indices are the weighted sum of the nine adjusted measures. Weights of 0.143 are applied to job and wage growth rates, and weights of 0.071 are applied to high-tech growth rates and location quotients. City indices are used to determine rankings among large and small cities.
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**Table 2. Comparisons of Rankings among Alternative Studies,
Selection from 50 Largest Metropolitan Areas, 2005-2007**

Policom Economic Strength Rankings ¹	Milken Best Performing Cities ²	BHI Metro Area Competitiveness Report ³
1. Washington, DC	Riverside-San Bernardino, CA	Boston, MA
2. Charlotte, NC	Phoenix, AZ	Raleigh, NC
3. Las Vegas, NV	Orlando, FL	Seattle, WA
4. Nashville, TN	Las Vegas	Denver, CO
5. San Diego, CA	Raleigh, NC	Austin, TX
6. Phoenix, AZ	Salt Lake City	Minneapolis, MN
7. Atlanta, GA	Austin, TX	Portland, OR
8. Sacramento, CA	Charlotte, NC	Washington, DC
9. Minneapolis, MN	Sacramento, CA	Salt Lake City, UT
10. Orlando, FL	Houston, TX	Charlotte, NC

Notes: ¹ Fruth's (2007) rankings for 363 Metropolitan Statistical Areas.

² DeVol, Bedroussian, and Kim's (2007) rankings for 200 largest Metropolitan Statistical Areas.

³ Houghton and Sirin's (2004) rankings for 50 largest Metropolitan Statistical Areas.

2.4. Usefulness of Indices and Rankings

Academics have been quick to question the methodologies selected for estimating rankings and grades and the usefulness of the findings for public policy recommendations. Fisher (2005), in his book *Grading Places*, offers four questions aimed at assessing the validity of an index and resulting grades and rankings. First, “does the index include all the relevant variables, and only the relevant variables?” This question addresses the validity of the specification of the conceptual model used to create the index. Specifically, Fisher suggests that the index should avoid the mixing of input, output, and outcome measures to reduce direction-of-causality issues. Also, the use of too few or too many variables may result in measurement problems such as omitted variables bias and double counting due to multicollinearity between variables. Second, “do the causal variables in fact measure what they claim to measure?” For example, are patents and SBIR funding good measures of innovative activity? Third, “how does the index deal with the problem of combining disparate measures into a single index number?” This question addresses the implicit or explicit weighting used to combine multiple measures into sub-indices and multiple sub-indices into an overall index and ranking. Huggins (2003) demonstrates that rankings are sensitive to the weighting scheme selected, especially for city-regions in the middle of the rankings. Fourth, “does the index do a good job of predicting why some states or cities grew more rapidly than others over some time period?” Fisher's (p. 72) analysis of five indices of competitiveness finds that “...none of them actually do a very good job of measuring what it is they claim to measure, and they do not, for the most part, set out to measure the right things to begin with.” Luger and Bae (2006) also show that state and local cost-of-doing business studies are inadequate at providing insights into business location decisions and regional competitiveness. The authors note that the cost-of-living indices do not take into account that (1) businesses consider more than direct costs differences when making their location choices and (2) businesses can change their production processes to mitigate some high cost characteristics of a location.

Fisher's criticisms of indices focus on the methods used to construct indices and the predictability of the results. Other researchers question the usefulness of indices and rankings for public policy guidelines. Hall (2007) notes that a letter grade or ranking provides policy makers with few insights regarding where to allocate resources to enhancing their region's standing. Even the availability of a coefficient or "weight" on a measure used in an index (e.g. percentage of adults with college degrees) may have limited value for policy unless that factor has a relatively uniform impact on the dependent variable regardless of industry, region, or time (Skuro, 1988). Cortright and Mayer (2004) suggest that such uniformity is highly unlikely, and they note that indices are snapshots that ignore the historical process and the region's industrial legacy with respect to technology, institutions, labor markets, and entrepreneurial environment. In addition, McCann (2004), Bristow (2005), and Luger and Bae (2006) propose that indices and rankings, even those done well, may not result in good economic development policy. Rankings are seductive to regional development agencies because they provide "quick and dirty" assessments of regional economic performance and offer "off the shelf" solutions for complex economic development problems. The grades and rankings also encourage a short-term inward focus rather than a long-term regional perspective on development. McCann (2004, p. 1926) concludes that "The danger for urban growth coalitions in believing the hype of rankings and tailoring policy towards their criteria is that no room will be left in the policy discussion for alternative visions or for stories that do not fit the narrative of prosperity." Finally, Bristow (2005, p. 294) argues that ratings are especially detrimental to regions with low rankings because "they clearly carry the inherent danger of stigmatizing lagging regions as failing because of their own deficiencies, when the problems may lie in part in broader structures."

The State Science and Technology Institute (SSTI) is more optimistic regarding the potential usefulness of indices and rankings. The SSTI (2002, p. 1) suggests that

...when done well and often, innovation indices and science and tech report cards can actually serve several beneficial ends...They can:

- Be useful tools for developing awareness of the condition of a state or regional economy...
- Help to identify the areas which warrant the most immediate attention so that limited financial and human resources can be targeted...
- Offer the political opportunity and supporting evidence to engage in longer-term policies and programs...
- Assess the direction of a region's or state's economy if the index includes multi-year data and is done regularly...
- Provide data to support elements of a geographic area's branding and other promotional marketing strategies.

The SSTI adds that a "good index" also would contain the opportunity for public involvement in the selection of measures and weights, a clear explanation of the data and methodology used, an examination of trends over time, and public dissemination of findings with specific recommendations for policy alternatives.

The SSTI's faith in competitiveness indices and rankings is, in general, not shared by regional scientists. For example, Martin and Tyler (2003) state that no theoretical perspective fully captures the complexity of regional competitiveness. Greene, Tracey, and Cowling (2007, p. 16) add that "attempts to measure and compare competitiveness of cities and city-regions are at best flawed and at worst represent a meaningless race in which the winners and losers remain

static over time.” And Cortright and Mayer (2004, p. 36) conclude that “Rankings are pernicious because they distract attention from useful analytic frameworks.” The distrust (dislike) of regional competitiveness indices and rankings by regional scientists limits their participation in the development of indices and results in a decline in their quality and usefulness. Later discussion will address how regional scientists could contribute more to the development and application of indices so that the indices would be more valuable to the city-regions that rely on their data for policy directions.

3. RESPONSES TO THE RANKINGS COMPETITION AND CONTROVERSY

Rankings of regional competitiveness send mixed signals to local economic development agencies seeking insights into alternatives for improving the local economy. On the one hand, the indices and rankings give the impression of a relatively straight forward relationship between selected area characteristics and regional competitiveness. On the other hand, the large number of competitiveness rankings, conflicting findings among studies, and volatility of rankings over time create confusion regarding the studies’ findings. The end result is that many economic development agencies punt on their efforts to divine policy guidance from studies and rankings of competitiveness, and they take a “road trip” to visit the “winners.” In general, the “winners” are those city-regions that rank high in the competitiveness indices or those areas that made large improvements in their rankings over time. The “road trip” also might be virtual in the sense of reviewing “best practices” studies available on local efforts in entrepreneurship, industry clusters, and systems of innovation. In both cases, the visiting economic development agency hopes that the winners’ secrets of success are revealed and these secrets may be incorporated into the visitor’s local economic development strategy.

Popular domestic destinations for road trips include Austin, Texas; Raleigh-Durham, North Carolina; Portland, Oregon; and Madison, Wisconsin. Ireland (“The Celtic miracle”) is a favorite foreign destination for groups seeking insights into global competitiveness. Participants on these visits to other city-regions generally include a mix of community leaders from area businesses, economic development agencies, educational institutions, non-profit organizations, and government entities. These visitors from city A meet with individuals and organizations in city B regarding the programs and policies in city B that are perceived to enhance the city’s competitiveness. The lessons learned from this visit are next used to affect policy change in city A, and improvements in city A’s rankings are interpreted as support for the new policy directions.

A low-cost alternative to visiting city-regions with high or rapidly improving rankings is to review others’ assessments of these “winners” as presented in the “best practices” literature. Best practices publications generally focus on a component of regional competitiveness (e.g., innovation, entrepreneurship, human capital); provide specific examples of a local or state program (e.g., industry cluster promotion); and summarize lessons learned from these programs. Examples of best practices studies include the National Governors Association (NGA) Center for Best Practices publications on investing in innovation (NGA, 2007) and arts-based rural economic development (NGA, 2005); Rural Policy Research Institute (RUPRI) studies on community capacity (Marre and Weber, 2007) and public venture capital programs (Barkley et al., 2001); and the National Association of Counties (NACo, 2007) model county programs in community and economic development.

3.1. Role for Regional Scientists in Competitiveness Evaluations

The reliance by the policy community on road trips and best practices often creates a disconnect between the local policy community and regional scientists. McCann (2007) suggests that the careful, formal evaluation provided by regional scientists is essential for designing good public policy for regions. Regional science research emphasizes that the concept of regional competitiveness is a complex function of numerous regional attributes, and the roles of individual regional attributes may vary markedly as other regional characteristics change. Yet, information gleaned from trips and best practices all too often implies a prescription or formulaic approach to enhancing regional competitiveness. That is, if city A just had more of programs x and y, like city B, then city A would be more competitive in the global economy.

Regional scientists caution economic development agencies regarding the use of road trips, case studies and best practices in policy design. In my opinion, however, we are not likely to dissuade policy makers from relying on these sources of information for insights into policy alternatives. The case study/best practices approaches provide the policy community with a relatively low cost, low risk methodology for policy development. The time involved for data collection and analysis (plan and take the trip and summarize the findings) is relatively short. In addition, policy makers may deflect responsibility for unsuccessful programs because they followed the “best practices” from the “leading” city-regions. Thus, perhaps regional scientists should “join” the policy community on road trips and studies of best practices, where our “joining” would involve assisting policy makers in acquiring relevant information and in drawing reasonable conclusions from this information. I recommend four general areas of participation in the process.

3.1.1. Quality of Indices. Regional scientists can help in the development of indices and benchmarking methodologies that more accurately reflect regional competitiveness. Communities rely on these indices to select their road trips, and some regions are producing their own mini-benchmarking studies whereby they compare their city’s characteristics with those of peer cities (see, for example, the Regional Economic Scorecard for Tampa Bay—Tampa Bay Partnership Center for Business Intelligence, 2007). Regional scientists are cognitive of the problems with indices and rankings, and they have been active refining measures and methodologies for city-region indices. Goetz and Freshwater (2001), for example, demonstrate the use of residuals from regression analysis as proxy measures for entrepreneurial climate in a state. Deller et al. (2001) introduce alternative measures of amenities and local quality of life and test for their contributions to rural economic development. Gardiner (2003) is investigating the role of regional spillovers and industrial structure (traded versus non-traded goods) on regional competitiveness indicators in Europe. Finally, Hall (2007) and Eberts, Erickcek, and Kleinhenz (2006) use factor analysis to group variables into statistically uncorrelated groups and regression analysis to estimate the statistical correlation between the group measure and regional growth.

In sum, regional scientists have much to offer benchmarking studies in terms of the variables to include, best measures and data sources for variables chosen, and reasonable “formulas” or methods for combining the selected variables to best reflect the regional characteristic of interest (e.g., competitiveness, innovative capacity, entrepreneurial environment). Despite our expertise in this area, regional scientists are reluctant to participate on these studies because we are aware of the complexity of the question of competitiveness, and we

know that even the most thorough research may provide only limited insights into the level and determinants of regional competitiveness. Thus we leave this research and the resulting benchmarking studies to individuals who take a less complicated view of regional economies and the regional competitiveness process. The result is, as noted earlier in Fisher (2005), indices and benchmarking studies that offer little useful information for public policy. Regional scientists may not be able to develop flawless indices or benchmarks for competitiveness; however, they most certainly can improve upon many of the studies currently available to policy makers.

3.1.2. Selection of Peer Cities. Road trips and studies of best practices generally involve the comparison of two or a small number of cities. In many cases, the cities selected are based on high rankings in a recent publication or the perception of unusual success in a particular program area (e.g. small business development or innovative activity). The usefulness of the information acquired on road trips and in case studies will be enhanced if the comparison cities are somewhat similar. That is, it will be less difficult to discern the role of human capital or university research on regional competitiveness if we are comparing communities similar in most other characteristics. Alternatively, a road trip to a city that differs markedly from the “home” city may not be very helpful in identifying clear choices regarding policies to enact to enhance competitiveness in the “home” town. Indeed, the lack of clear choices may be interpreted by different interest groups as support for each of their individual policy favorites.

Regional scientists have an appreciation for the roles of location, industrial structure, and economic history on regional competitiveness. They also have extensive knowledge of data sources and analytical procedures (e.g., cluster analysis and quasi-experimental design) for identifying similar city-regions. Thus regional scientists are ideally suited to advise policy makers regarding which city-regions to visit or which best practices to study in order to benefit most from other regions’ experiences. Examples of the use of small groups of comparison city-regions are provided in recent benchmarking studies by Eberts, Erickcek, and Kleinhenz (2006) for northeast Ohio and Cañas, Gilmer, and James (2007) for El Paso, Texas.

In addition to the selection of cities, regional scientists may assist policy makers in collecting information that is most relevant to the purpose of the visit or case study. Visits from city A to city B occur because a group of community leaders in city A believe that there are lessons to be learned from city B. In many cases, however, these visits are made without much prior study of the regions to be visited or the programs related to the regions’ successes. Regional scientists are well positioned to help policy makers get the most out of their road trips by focusing the visits on the community characteristics and programs most closely related to the goals of the visit. Regional scientists also may assist policy makers by helping them understand the community’s economic history. Cortright and Mayer (2004) propose that analyses of regional competitiveness often overlook the roles played by prior industrial development in determining the regions endowments with respect to technologies, institutions, labor markets, and entrepreneurial environment. The road trip constitutes a “snapshot in time” of the city-region, and perceptions from this snapshot should be made in terms of the industrial and economy legacy of the place.

3.1.3. Applications of Lessons Learned. The principal goal of road trips and reviews of best practices is the acquisition of insights into policies and programs that may enhance the economic development prospects of the visitors’ home town. Often the visitors will return from the case study with clear perceptions regarding specific programs and policies to be implemented and expectations regarding likely outcomes. McCann (2004) provides examples of economic

development strategies for Lexington, Kentucky and Columbus, Ohio that evolved from visits by city leaders to Austin, Texas. He notes, however, that the strategy for competitiveness is not easily transferred from one region to another. McCann (p. 1922) adds that “A desirable outcome of this transfer (policies from places known for good practices) would be a careful modification of policy to match the place-specific characteristics of the new location.” Kitson, Martin, and Tyler (2004) propose that a policy transfer, even with modifications, may not be appropriate. They (p. 996) argue that “both history and geography will have a major impact on the relevance of particular drivers and their impacts. Thus, investing in ‘innovation’ ...may have beneficial effects in one region but have little impact in another.” Budd and Hirmis (2004, p. 1026) concur on the importance of geography in policy selection, and they note that spatial structure ‘determines regional capacity to absorb, or constrain, future growth.’

Regional scientists have much to offer policy makers in the interpretation of lessons learned from road trips and best practices research and the application of these lessons to local economic development policy. First, road trips are made to discover the “keys to success” in the high ranking cities that are the focus of these trips. Regional scientists can aid the visiting policy makers by identifying the “drivers” of the city-region economy and the regional characteristics (resource endowments, technical knowledge, entrepreneurial environment) that enhance or inhibit the drivers’ roles in enhancing regional competitiveness. The determinants of a region’s competitiveness may be difficult to discern because there exist competing explanations for the current observations and questions of how to infer causality from the observations. For example, to what extent are high levels of education, academic R&D, and venture capital funding related to the high competitiveness rankings of Raleigh-Durham, North Carolina. McCann (2007) suggests that regional scientist offer the preferred methodologies for addressing these issues. Specifically regional science provides both formal models of regional economies and an analytical system or framework based on deductive or inductive reasoning from which regional economies and public policy may be assessed and evaluated.

Second, regional scientists can help public policy makers better understand why the lessons learned from road trips and best practices may or may not be relevant to the “visitors” home region. That is, regional scientists can provide insights into characteristics of the “home” region that may impede or facilitate the transfer of successful policies in the best practices community (e.g. local venture capital fund or technology incubator) to the “home” community. Bristow (2005, p. 293) argues that policy makers too often adopt a one-size-fits-all approach to regional development policy and “...end up pursuing ‘identikit’ competitiveness strategies...with no clear prioritization or tailoring of the dominant prescriptions to suit local circumstances.” The regional science community recognizes the inappropriateness of following such development strategies. For example, Cortright and Mayer (2004, p. 38) suggest that “...economic developers need to become ‘place professionals’ developing a detailed understanding of the specific characteristics of their region economies.” Eugene McCann (2004, p. 1922) adds that “A desirable outcome of this transfer (policies from places known for good practices) would be a careful modification of policy to match the place-specific characteristic of the new location.” In summary, policy prescriptions to enhance a region’s competitiveness will benefit from case studies of “competitive” regions and those regions that desire to enhance their competitiveness. Competitive advantage is a highly localized process and case study research will be useful in identifying the drivers of local competitiveness and the transferability of these drivers to locations with different history, geography, and industrial structure. More case study

research on regional competitiveness is required if communities are to have a better appreciation of the process, and I suggest that regional scientists are best prepared to conduct these studies.

3.2. Need for Case Study Research.

In *Case Study Research Design and Methods*, Yin (2003, p. 13) defines case-study research as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomena and context are not clearly evident.” He further proposes that the phenomena of interest (e.g., role of innovative activity in regional competitiveness) and its context (local industrial structure and history) may not be readily distinguishable, thus he suggests that the case-study approach relies on multiple sources of evidence with data collection and analysis guided by prior development of theoretical propositions. In summary, Yin views case study research as a comprehensive research strategy that includes the development of a theoretical model, research model design, and data collection and analysis. Yin emphasizes that data collection is not limited to individuals associated with the “case.” Case information often includes a review of the literature pertaining to the case (e.g. industry and government reports and popular and academic press articles) in addition to a thorough analysis of secondary data available on the local and regional economy.

Case-study research designs may have single or multiple cases (e.g., city-regions) in the research design and single or multiple units of analysis within each case. The choice between single-case and multiple-case designs for case study research is a function of the principal goal of the research, the availability of relevant cases, and the research budget. Multiple case studies generally are preferred if the research goal is program evaluation or the examination of causal relationships (hypothesis testing). The multiple-case design permits the researcher to make generalizations based on the observations of patterns or replications among the cases. The single-case research design is useful if the case is an extreme, unique, or revelatory case; a representative or typical case; or a longitudinal case (Yin 2003). Flyvbjerg (2006) also proposes that the single-case design can be used for hypothesis testing through the process of “falsification.” In this situation, if just one observation does not fit the proposition, then the proposition is considered not valid.

3.2.1. Shortcomings of Case Studies. Regional scientists are somewhat reluctant users of the case study methodology in their research. The methodology is relatively popular in research on industry clusters, regional innovative systems, and innovative mileaux; however, these studies are more the exception than the rule. For example, from 1999 to 2007, *The Review of Regional Studies* published 129 articles, only seven of which used case study research. I attribute our lack of excitement for case study research to four principal factors. First, “good” case studies require much attention to research design in order to identify all reasonable rival hypotheses, give appropriate consideration to the role of external factors (e.g. the political and economic environment) in the situation of interest, and avoid the selection of unrepresentative cases. The more “complicated” the research issue, the greater the amount of time and resources required for research design, case study selection, and data collection. In addition, “complicated” situations generally require a multiple case study research design and multiple sources of information per case. A large number of cases, and the collection of information from a large and diverse set of sources, is critical to avoid sample selectivity bias in terms of those chosen for study. This situation increases both the cost of the study and the skill set of the research team. Thus, an appropriately designed case study may be a relatively expensive and time consuming research methodology. The analysis of a region’s competitiveness is representative of a complicated case

study since it would involve a multiple-case design (“home” city-region versus a set of comparison city-regions) with multiple units of analysis for each case (e.g., inputs to the competitiveness process and geography, economic history, and industrial structure of the region).

Second, regional scientists are skeptical of information collected through personal interviews for a case study. Biased responses may result from cognitive dissonance and/or a retrospective view of the case on the part of the individual interviewed. The interviewees may give inaccurate information if they believe that such responses will result in a program or situation more to their liking. In addition, the individuals conducting the case study may be biased in their interpretations of the interviews and other collected information. North (2005) argues that individuals filter information through a belief structure shaped from experiences, and “biased” interpretations may result from researchers’ pre-conceived ideas of environments and relationships. As before, the likelihood of biased survey responses and biased interpretations can be reduced by increasing the number of perspectives on each case and increasing the number of individuals analyzing the case study data.

Third, public policy makers often use case study research to justify their support or opposition for a program, regardless of the appropriateness of the case study to their particular situation. “Best practice” case studies are used as justification for adopting a particular development program, e.g., a business incubator, without consideration of the assets in a region and the relevance of the program to the needs of the entrepreneurs. In addition, communities across the nation investigate the development of their version of a Research Triangle Park despite the critical absence of a core of leading research universities (i.e., Duke, North Carolina State, and the University of North Carolina - Chapel Hill) in the region. The misuse of case studies by policy makers discourages regional scientists from using this research methodology.

Fourth, I suspect that some regional scientists avoid case study research because they perceive it to be more difficult to publish in academic outlets than research using other research methods. Part of the difficulty in publishing case studies may result from a bias by reviewers against case studies, a bias developed through years of reading poorly done case studies. I also suspect that case studies are more difficult to write well. The presentation of research findings from a case study is not as straightforward as that for theoretical discussions or statistical analyses because of the diversity of data sources and possibility of multiple interpretations for the research findings. In other words, regional scientists are better trained at telling “stories” using econometric models and regression coefficients.

3.2.2. Usefulness of Case Studies. The concerns of regional scientists with case study research are justified; however, I believe that the benefits associated with good case studies exceed the potential shortcomings. The principal reason to be involved in case studies is that policy makers like case studies. Policy makers value the relative clarity of case studies and best practices research. The cause-effect relationship between a community’s characteristics and its rapid economic development often appear relatively straightforward in case studies. In addition, the lessons learned from the case study appear to be readily transferable to other regions. Regional scientists cannot be available at every meeting where policy makers review case studies and prescribe new policies and programs based on the studies’ findings. Thus regional scientists cannot alert the policy makers to the potential shortcomings of the case studies or to the transferability of the findings and lessons learned. Regional scientists can, however, contribute by providing more case studies of regional competitiveness. That is, the supply of good case studies (i.e., studies based on regional growth theory and conducted with an understanding of the

roles of space, history, and institutions in development) will increase with greater participation by regional scientists. Access to more good case studies should enhance policy makers' understanding of regional competitiveness and improve public policy.

Case study research also provides regional scientists with new information or perspectives on programs to enhance regional competitiveness. Organizations or programs often are so new that little information exists (outside the organization) regarding the workings or impacts of these programs. Regional systems of innovation are representative of relatively new approaches to regional competitiveness, yet McCann (2007) notes that our knowledge of the relationship between innovation and regional development is still very limited. Exploratory and descriptive case studies may observe interesting behavioral patterns or correlated activities in the regional systems, and these observations may be useful in developing or refining hypotheses regarding relationships in regional systems of innovation.

Case studies also may be useful in testing the hypotheses suggested by the exploratory case studies. A goal of much research by regional scientists is to test for causal relationships between phenomena. For example, which characteristics of the local business environment or which university R&D programs are related to increases in regional competitiveness. Ideally, these questions would be addressed with a well-specified econometric or quasi-experimental model supported by an extensive set of secondary or survey data. Unfortunately, there are numerous situations where event characteristics or data limitations reduce the effectiveness of econometric analysis and quasi-experimental design methods to detect causal relationships. Specifically,

- The characteristic or event of interest (e.g., availability of an entrepreneurial support system in the area) may have an impact on regional competitiveness (as reflected in new jobs and higher incomes), yet the impact is too small to detect from the “white noise” in the model estimation.
- An insufficient number of observations of the phenomena may exist to perform statistical analysis, or the phenomena may exist in an environment in which there are numerous correlated explanatory variables and it may be difficult to identify the more critical causal relationships.
- The event or program may be recent and little or no secondary data are available.

Examples of the use of case studies in hypothesis testing are provided in the extensive research on industry clusters (Austrian, 2000). Industry clusters may provide advantages to member firms in terms of labor pooling, targeted public services and infrastructure, greater availability of specialized input suppliers and business services, and an enhanced likelihood of networking to exploit new markets and technologies (Barkley and Henry, 1997). These characteristics of industry clusters are hypothesized to result in an environment that is conducive for entrepreneurial activity and small firm development. Yet, of interest to policy makers are which particular cluster characteristics are most related to entrepreneurial development in which type of cluster? Case study research proved to be helpful in distinguishing among the multiple related cluster characteristics. For example, Christopherson and Redfield (1993), Rosenfeld et al. (2000), and Gordon and McCann (2005) used case studies to show that networking among cluster firms was not a common occurrence in many industry clusters.

The application of the case study research methodology for hypothesis testing requires some qualifications. First, it is recommended that the study include numerous cases and multiple

sources so that generalizations may result from the triangulation of data, interviews, histories, and theories. The number of cases needed will be a function of the complexity of the situation and variety of external conditions. Second, generalizations from the findings are made to “theory” and not to population. The researcher should stipulate “rival” or alternative hypotheses and the case study’s findings should support the theory but not the rival hypotheses. In summary, given a rigorous theoretical framework, the goals of the research design are to (1) find similar results under similar circumstances or (2) find dissimilar results for predictable reasons (i.e., dissimilar circumstances matter as predicted by theory). Ideally, the case study research design will incorporate “feedback loops” such that the theoretical model and later case studies may be revised based on prior findings.

Finally, case study research may be useful in the evaluation of programs to promote regional competitiveness that are too new, too small, or too geographically limited to significantly impact available metrics such as jobs and income in the region. Case study program evaluations also are recommended when (1) the causal links between the program and outcome are too complex for identification by surveys or experimental methods, (2) path dependence or historical legacy are important to program efficacy, and (3) the role of program management or administration is critical to program success, but the critical characteristics are not captured in a survey (Yin, 2003).

Case study research could be especially beneficial in identifying development strategies for economically disadvantaged communities and regions. Much empirical research is available that identifies the shared characteristics of prosperous and growing regions (see, for example, Isserman, Feser, and Warren (2007), Henry, Li, and Barkley (2005), and Deller et al. (2001). Communities lacking the “good” characteristics (e.g., educated labor force, amenities, innovative activity, entrepreneurial environment) often become discouraged and resigned to their economic status. Yet empirical studies often overlook the “exceptions” or “outliers”, the communities and regions that prospered in spite of low initial values for attributes beneficial to local growth and development. Case studies of the “exceptional” communities may help fill gaps in our understanding of the growth process and provide inspirational examples and development strategies for lagging regions.

4. CONCLUSIONS

I suspect that regional competitiveness will remain an important issue for local and state policy makers for many years. A focus on regional competitiveness will be fueled by the increasing availability of ratings and rankings on economic strength and business vitality as well as innovative capacity, entrepreneurial environment, creative class, and livability. In addition, academics in regional studies and regional science will continue to promote the concept of a highly competitive global economy with “winners” and “losers.”

The policy community will respond to pressures to enhance their competitiveness (and rankings) by visiting the “winners” (as identified in rankings) and reviewing studies of best practices. Regional scientists have much to offer the policy community as these individuals and organizations attempt to design a competitiveness strategy based on the experiences of other communities. Our assistance may require the use of case studies to better understand the characteristics of the “target” and “home” region that may impede or facilitate the transfer of policies from one region to another. An expansion of case study research by regional scientists will be much appreciated by policy makers. Case studies and best practices provide information

on potential policy strategies in a form most palatable to them. More case studies by regional scientists will lead to improved public policy regarding competitiveness strategies by (1) providing policy makers with a larger pool of “good” case studies from which to acquire their insights on the economic development process, and (2) providing researchers and consultants with examples of appropriate research methods for case studies and investigations of best practices.

In summary, McCann (2007) argues that regional science offers the analytical framework, methodological rigor, and appreciation of the importance of place, space, and history necessary for contributions to ex ante public policy and ex post policy evaluations. Smith (2005) notes, however, that regional scientists have not taken an active role in providing policy oriented research. In my opinion, regional science’s contributions to policy will be limited further by its reluctance to use its formal models and methodological rigor to develop detailed empirically-based case studies. Regional scientists have much to offer public policy makers, and an increase in case study research should assist in the diffusion of our research findings among the policy community.

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