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Partridge Mark D. and Olfert M. Rose

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**The Winners' Choice:
Sustainable Economic Strategies for Successful 21st Century Regions**

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Mark D. Partridge

M. Rose Olfert

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Abstract: Throughout the second half of the 20th Century, urbanization, new technologies, rapid labor-saving productivity growth in primary industries, and improved highways combined to create large-scale rural-urban functionally integrated regions. These forces have raised the stakes for regions in their pursuit of economic development and growth, making successful regional policy even more important. Changes to the governance structures consistent with the increased interdependence within broad rural-urban regions will improve the region's competitiveness; adopting fad-based approaches and policies aimed at “picking winners” will be less fruitful. Going forward, continuing globalization and environmental sustainability have the potential to fundamentally reshape relative regional attractiveness.

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Corresponding author: Mark D. Partridge, AED Economics Ohio State University, 2120 Fyffe Road, Columbus, OH 43210, USA; Phone: 614-688-4907; Email Partridge.27@osu.edu.

The authors are Swank Professor of Rural-Urban Policy and Professor, Department of Agricultural, Environmental, and Development Economics, Ohio State University, and Professor in the Johnson-Shoyama Graduate School of Public Policy, University of Saskatchewan. We thank Raquel Tsukada for her able research assistance. We also thank the anonymous reviewer and editor for their very helpful comments and suggestions. The authors are responsible for the final product.

Introduction

The places where people live, work, shop, and recreate, forming functional economic regions, are the essential entities for economic analysis and policy. These are the building blocks of economic growth, where "the rubber hits the road," in terms of economic development strategies. In turn, prosperity of the mega-region is essential to providing economic opportunities, high quality public services, and a good quality of life for the resident population. Understanding how regional economies evolve and what makes them prosperous becomes even more essential in the post-2000 climate of sluggish economic growth in which job creation in local communities becomes paramount.

In advanced economies, the geographical size of economic regions has greatly expanded since 1950 to encompass wide swaths of what were traditionally 'rural' areas. In the outer reaches of these expanded regions, areas that were once dependent on primary sector activities such as agriculture have evolved to having much more diverse rural economic bases. Labor-saving technological changes have led primary sector employers to shed workers and consolidate, while transportation improvements have facilitated commuting between rural and urban areas. Households' retail expenditures are also conducted on a more regional scale. Small-town shops have mostly either consolidated or been replaced by big-box stores with extensive regional market areas. Issues of planning, infrastructure, and land use encompass both urban areas and their exurban fringes. Clearly, practical distinctions between rural and urban areas have blurred as they have become more interdependent.

Economists have documented how technological change and transportation improvements have led to the organic formation of large urban-centered regions. Yet, political discourse and media reports typically ignore this fundamental transformation of how economic activity is organized. They continue to invoke a rural-urban divide that is often based on landscape considerations rather than what the people are actually doing. For example, a *New York Times* 2008 Editorial lamented that the Presidential candidates were focused too much on 'rural' issues such as subsidizing ethanol production, while not paying close enough attention to 'urban' issues

such as “education, housing, health care, jobs, transportation and environment,” as if those are only ‘urban’ issues. This lack of awareness means that there have been few institutional and governance changes to reflect the rise of mega regions across North America—local communities compete with their neighbors for economic development and provision of public services, rather than working together in their mutual interests. Indeed, North American regions are still using governance designed in the “horse-and-buggy” era to compete in the 21st Century.

The current phase of globalization, beginning in the 1950s and accelerating in the 1980s, is another pervasive reality affecting the spatial location of economic activity. Globalization implies that product markets for goods and services are increasingly international. Capital flows are more fluid and entrepreneurial talent is more footloose. One upshot is that across an increasing number of industries, individual firms are more mobile than ever. Globalization along with falling transportation costs makes it even more important for a particular region to be competitive in its bid to attract highly-mobile firms and households that have a wide range of location choices. Cities and communities used to compete with their immediate neighbors. Now they compete globally. Winners (losers) do not just gain (lose) capital, workers, and entrepreneurs from their neighbors, but they now potentially gain from (lose to) the entire world, magnifying the benefits (costs) of (not) achieving a competitive edge.

In this article, we explore the evolving nature and rising importance of regions. First, in order to understand how regions can maximize their competitiveness as a location of choice in the global arena, we need to be able to define regions and understand how they have evolved, especially since the middle of the 20th Century. Second, we explore the recent history of regional economic development policies. The findings are not very encouraging. Rather than cooperating on economic development and service provision, individual communities within regions still compete with one another in, at best, zero-sum games. In particular, communities too often engage in wasteful economic competition using expensive tax incentives and subsidies to attract favored industries. It is not clear that there are widespread benefits in the winning regions, as they may be forced to reduce services or raise taxes on the rest of the region’s residents and firms

to offset the tax breaks (or subsidies) they gave to favored firms. Such a problem is exacerbated if the competition is *intra*-regional, where economic activity is simply rearranged without creating any new wealth—e.g., suburbs competing with a core city. Another problem is that local communities engage in sensational fad-based efforts rather than more successful and sustainable endeavors. Recent “flavor of the month” endeavors include attracting bio-technology firms, cluster-based policy, and today’s latest craze—green jobs. The problem is that politicians and economic developers have a dubious track record in picking the next 'hot' industry and simply copying everyone else is neither very innovative nor strategic. Governments should focus more on functions that are best done by governments (education, infrastructure, environmental protections, etc), leaving the private sector to focus on what it does best.

If regions are currently not generally engaging in productive competition, we ask what *should* regions be doing? The answer is to adopt more proactive regional governance models of consolidation and real collaboration that account for the wide range of socioeconomic spillovers evident in their regions, and to take advantage of the scale economies in service and infrastructure provision. Second, rather than subscribing to the current fashion of trying to attract outside firms, they should build from within through retention, expansion, and supporting local entrepreneurship. Reinforcing this point is that diverse local economies typically outperform those highly concentrated in one industry. To pick an extreme case, was Gary Indiana’s concentration in the steel industry good for sustainable long-term growth (ditto for Detroit’s concentration in automobiles)? Building from within should lead to a more diverse economy than attracting one or two large outside firms/industries. Third, recognizing that knowledge will likely remain the catalyst for economic growth and innovation, regions with an attractive quality of life for high-skilled workers will have an advantage. We acknowledge that these approaches are fairly standard and not particularly tantalizing, but being patient and building a foundation is the *best* hope for regional competitiveness.

We then examine the future of North America’s regions. Given that U.S. economic regions are currently unprepared for ongoing challenges, we wonder if regions are prepared for those

emerging in the future. For example, one expected future challenge is addressing the wide-ranging impacts of climate change and environmental sustainability. Climate change will possibly reverse long term trends in U.S. regional growth, placing pressures on both origin and destination regions.

We conclude by urging a more proactive set of policies to make American regions more competitive. As a starting point, we argue that federal and state/provincial efforts should focus on the realities of regional policy rather than continuing to conduct policy under the artificial distinction of “rural” and “urban.” Given the economic realities of the last 60 years, we propose the formation of a U.S. Department of Regional Development to consolidate the economic development functions of U.S. Housing and Urban Development, U.S. Department of Agriculture (USDA) Rural Development, along with the myriad of other economic development functions taking place in the Commerce, Labor, and Transportation Departments. The resulting regional approach to policymaking will be more focused and better aligned to make North American regions, and thus the nation, competitive in the 21st Century and more likely to provide needed jobs for its citizens.

How Have Regions Evolved?

Regions can be defined in a great many ways to reflect particular perspectives. We take a 'people-centric' view of regions appropriate to addressing issues of public service delivery, infrastructure development, planning, and economic development. We define a region as the geographic area that encompasses place of residence and place of work, and the geographic area within which everyday goods and services are purchased and basic public services are delivered. The resulting functional economic area (FEA) approach is by no means novel (Barkley 1995; Fox and Kumar 1965; Miller 1998; van Oort et al. 2010). The delineation of FEAs is strongly influenced by commuting patterns, whereas other spillovers that occur through factors such as the environment or infrastructure likely also correspond to these boundaries (e.g., due to sprawl, or placement of highways).

A contrasting view held by many politicians and much of the media is that a region is defined

by the appearance of the landscape. In this view, if the landscape is agricultural, the region is agricultural; if the landscape is forested, it is a timber region, and so on. These physically descriptive notions of a region do not account for where the people work, shop, send their children to school, or engage in recreation—i.e., the spatial spillovers that are essential in our discussion below. Though these perspectives may have been more accurate 100 years ago, their persistence underlines the lack of understanding of how regions and regional economies have since evolved and the new opportunities and challenges that have emerged.

We describe in this section two aspects of regional evolution that have somewhat paradoxically made (evolving) local regions even more important for determining competitiveness. First we illustrate the process of expanding regional boundaries as more and more rural space becomes functionally tied to focal urban centers. Second we describe the role of the information, communication, and technology (ICT) revolution and globalization in making regions more open, with more porous borders in terms of the exchange of goods and services. The result is larger, more open regions. However, rather than diminishing the importance of regions, these changes have made it even more important that regions employ astute internal management and improved connectivity with the rest of the world to improve its global competitiveness.

Expanding Regions: Rural Space attaching to Urban Places

Historically, the very existence and the growth of an urban center depended on the surrounding rural areas as farmers came to the town or city to buy goods and services (Christaller 1933; Krugman 1991; Lösch 1954). The primary direction of causal growth has generally reversed itself for mature FEAs (Partridge et al. 2008; Ali et al. 2011). In 1950, regional FEAs were geographically relatively small and fairly closed and discrete, dictated largely by relatively higher transportation costs. Glaeser and Kohlhase (2004) document the more or less continually falling transportation costs in the U.S. since 1890.¹ Communication and information limitations further reduced access to goods, services and employment possibilities outside the region. In agriculture-dependent areas, farm holdings were relatively small. Dimitri et al. (2005) report

average farm size in the U.S. increased from 200 acres in 1950 to about 450 in 2001; 16% of the total labor force was employed as their primary job in agriculture in 1945, declining to 1.2% in 2000. Commuting to non-farm employment was limited by the road network and the means of transport and farming technologies that were still relatively labor intensive—in 1945, 27% of farmers had off-farm employment, in 2003, 93% of farm households had off-farm employment (Dimitri et al. 2005). Technologies in nonfarm sectors were also consistent with smaller scale retail and commercial establishments (e.g., small hardware stores versus Home Depot), and the same was true in the provision of public services, such as education.

Over the past 50-60 years, the geographic reach of FEAs and the nature of production and consumption within them have been fundamentally altered by changes in transportation and production technologies. The one-room country school, for example, has long since been replaced with much more highly specialized methods of education, segregated by age-group, area of study and particular needs. The corner grocery or hardware store has been largely replaced by big box retailers like Wal-Mart, Costco and Home Depot. Most agricultural production happens on very large commercial-size holdings, while small 'farms' are primarily lifestyle-choice residences for people with non-farm employment; 89% of the incomes of 'farm' households is earned off the farm (USDA 2010). Economies of size and scale have led to consolidation in many production processes, as well as the concentration of economic activities in or near successively larger urban centres (Partridge et al. 2008).

Accompanying technological changes in production and transportation, many small towns in the Great Plains region of North America, for example, ceased to exist as they lost the threshold market size for a wide range of goods production and services provision. FEAs then reformed around larger regional centers, also translating into fewer, larger regions (Stabler and Olfert 2002). These regions continue to expand geographically over time and evolve in response to trends that affect commuting and shopping patterns, and the related changes in threshold sizes described above.

Using a comparative static framework and a clustering technique, Stabler and Olfert (2002)

examine the consolidation of the trade center system in the province of Saskatchewan in the Northern Great Plains region. Table 1 illustrates the consolidation process over the 1961-2002 period, showing communities filtering downward in the trade centre hierarchy as they gradually lose market potential and as functions successively moved up to higher levels (Stabler and Olfert 2002). Over time, larger and strategically-located places took up more and more functions and became focal points for regions that circumscribed commuting and shopping areas. Stabler and Olfert document a fundamental reorganization of regions in which there were 39 urban centers in the top three tiers of a six-tiered urban hierarchy in 1961, but only 18 in 2001. At the bottom of the hierarchy, less than half of the Province's communities were in the lowest tier in 1961, but nearly 85% in 2002. Stabler and Olfert further show that the province's economic geography has transformed itself to having 11 mega-regions, each with an urban anchor.

As a consequence of the complex changes driven by new production and transportation technologies illustrated by this example, the borders of FEAs have extended outwards, and regional growth experiences have been closely tied to the size and vitality of their focal urban center (Drabenstott 2003; Partridge and Olfert 2009; Partridge et al. 2008; Renkow and Hoover 2000; Stabler and Olfert 2002). The geographic 'diameters' of FEAs have increased with improvements in transportation, and a range of at-home labor-saving technologies and institutions. There is evidence that commuting sheds are larger around big urban centers (Ali et al. 2011; Goetz et al. 2010a; Renkow and Hoover 2000). More remote FEAs, or those with smaller focal urban centers, are experiencing population losses or slower growth than those that are more centrally located and/or with larger urban centers. Figure 1 illustrates the way in which commuting sheds have changed over a 20 year period (1981-2001) around a larger Canadian city, Edmonton Alberta. Higher degrees of commuting dependency have clearly extended outwards over even the 20 year period.

The organic evolution of FEAs over time is also well-represented by the geographical growth of U.S. Metropolitan Statistical Areas (MSAs). The U.S. Office of Management and Budget defines MSAs as, "...one or more adjacent counties...that have at least one urban core area of at

least 50,000 population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties" (U.S. Census Bureau 2010). Aside from the issue of defining and measuring the 'high degree of economic integration' (which in effect is having a 25% commuting rate to the urban core), this definition is consistent with our notion of FEAs. The evolution of the MSAs is illustrated by the fact that in each ten-year Census, many are redefined outward. MSAs of 1950 bear little resemblance to the current ones.

The geographic extent of four representative metropolitan areas is illustrated in Panels A-D of figure 2. These four case studies include: sprawling Atlanta, Georgia; one from the slow growing "rustbelt" region—Columbus, Ohio; and two metropolitan areas from the slow-growing Great Plains region Des Moines, Iowa, and Minneapolis, Minnesota. The latter three cases illustrate that even in slow growing regions, MSAs have greatly expanded their geographical footprint.

The Atlanta region (Panel A) clearly illustrates the effects of the construction of the Interstate highway system and other road improvements. The region expanded from 3 counties to 15 between 1950 and 1973, a four-fold increase in area, followed by a corresponding increase to 28 counties by 2003 (or about another doubling in geographical size). The growth process is similar for metropolitan Des Moines and Columbus even though they are less populated than Atlanta (table 2). Des Moines was about one-tenth the population of metropolitan Atlanta in 2009, while Columbus was about one-third its size. Minneapolis-St Paul MSA is a little slower growing geographically than the other cases. However, in all of these cases, the MSA boundaries understate the true growth of the respective regions which also include tightly-linked neighboring MSAs and micropolitan areas, combining to form even broader Combined Statistical Areas (CSAs), 'mega' regions in their respective states.ⁱⁱ

Table 2 shows the type of growth processes that are common in these regional FEAs. Populations for three groupings of counties are shown: Group 1, those that were part of the MSA in 1950; Group 2, those that joined the MSA between 1950 and 1973; and Group 3, those that joined 1973-2003. The general pattern is a diminution over time of the relative size of the core

1950 Group 1 counties and a rise of the relative size of the Group 2 tier added 1950-1973. For example, in Atlanta MSA, Group 1's population share declined from 62% in 1950 to 46% in 2009, whereas the Group 2 share increased from 18% to 43%.

Conversely, with the exception of Minneapolis-St. Paul, Group 3's share was relatively constant over time, with its growth slightly lagging the overall metropolitan average. The slowest growing Group 3 (among our cases) was Des Moines with a growth rate of about 70% between 1970 and 2003. To put this into perspective, between 1950 and 2000, the typical nonmetropolitan county grew by only 32%. Thus, even the most remote parts of these metropolitan areas grew considerably faster than their nonmetropolitan peers. What was happening to these counties is that they typically transformed themselves from a rural agriculture base to a base defined by commuting and market linkages to the core metropolitan area.

To further illustrate the rural-urban diversity of the regions that have self-formed, Panel b of table 2 reports the population densities of the three county groups for each of the four case study MSAs. As these figures show, population density in the original Group 1 counties is much greater than in the other two groups, about 3 to 9 times that of Group 2 and about 15 to 20 times that of Group 3. The relative low density in parts of Group 2 and virtually all of Group 3 counties would explain why our stereotypical politician or major city newspaper writer may conclude from the agricultural landscape that these counties still rely on their 1950 economic base. Instead, by definition, the high commuting rates to the urban core illustrate the reality of Group 2 and Group 3 counties being tightly linked to the urban center's economy.

Panel c of table 2 further illustrates the folly of simplistic conclusions based on confusing landscape with the economic activity of the residents. It reports for each of the three Groups in the four case study metropolitan areas, the percent of the population that lives in urbanized areas (roughly at least 1,000 people per square mile), nonfarm rural areas, and on rural farms.ⁱⁱⁱ This panel clearly shows that the core 1950 Group 1 counties are the most urbanized with 94% to 99% of the population living in urbanized areas, while the nonfarm rural population and especially the farm rural population were relatively small (farming did not account for more than

0.4% of Group 1 population in 2000). When interpreting the farm population figures, note this includes very “casual” farm households that derive very little income from farming. Overall, Groups 2 and 3 had much smaller urban populations, accounting for about 59 to 83% in Group 2 and 40 to 52% of Group 3. Rural farm population share ranged from only 0.2 to 7% in Groups 2 and 3 (even for Des Moines), with the balance being non-farm rural population.^{iv} The low farm share illustrates that the people were engaged in other work activities in these outer regions.

Regardless of the sparsely populated bucolic landscape, even relatively rural Groups 2 and 3 counties had the character of “low density” suburbs tied to the urban core through the commuting behaviors of their residents. Indeed, these four case study regions show that the changes since 1950 are astounding. In 1950, urban centers were compact “islands” with relatively little connection to the rural hinterlands. Today, these islands have evolved into the foci of “mega” regions often four to seven times larger in geographical size than in 1950.

The inclusion of more and more rural space within urban-centered regions illustrates the growing dependence of rural areas on the urban centers that dominate the regional economies (though this statement is factual, it bothers some rural stakeholders). This increased dependence implies increasing *within-region* cohesiveness that has evolved organically bottom-up. From a policy design or governance perspective, an understanding of this context and matching governance jurisdictions to the realities of functionally interdependent regions would seem crucial. Yet local government jurisdictions have changed very little, their static administrative boundaries not reflective of the economic realities (Andrew and Feiock 2010; Drabenstott et al. 2004; Goetz et al. 2010a; Hammond and Tosun, 2011).^v Even FEAs positioned around smaller urban areas would benefit from a governance structure where the geographic jurisdiction of the local government was consistent with the *de facto* regions in order to internalize current externalities and benefit from scale and threshold economies. Recognition of the regional transformations characterized by expanding 'virtual' boundaries and increased internal dependence of rural areas on urban centers is essential in policy design and evaluation.

Open Regions: Increased Connections to Global Economies

The increasing dependence of rural areas on urban focal points within regions resulted largely from changes internal to the region that were triggered by transportation and production technology changes. At least as dramatic has been the information/communication (ICT) revolution, transforming access to (information about) producer and consumer goods and services, as well as employment opportunities. The magnitude of the ICT impact resulted, for example, in pronouncements that "The Earth is Flat" (Friedman 2005) and the "Death of Distance" (Cairncross 1995, 1997). The ICT revolution has altered the relationship between regional FEAs and the rest of the world, by making the region much more open.

In a more open region, producers can create effective input-output linkages globally and, at the same time, local production must be competitive in a global setting. Consumers have instantaneous access to information about goods and services and prices anywhere in the world; the labor force has ready access to information about global employment opportunities. The growth of the "Knowledge Economy" has spawned new sectors as well as having an impact existing sectors, all intimately connected to global networks. Telecommuting is at least conceptually possible, though ICT technologies are thought by economists to complement face-to-face contact (rather than serving as a substitute), or that these technologies actually support industries that require more face-to-face contacts (Sinai and Waldfogel 2004; McCann 2007).^{vi} Consumers can and do spend incomes on goods and services as well as urban amenities in places far removed from the region where they reside.

New external connections of more open FEAs are not necessarily with nearby places or even places on the same continent. While widespread globalization is not a new phenomenon, as indicated by the globalization of commodity markets in the 19th Century, these trends are having novel impacts on both the potential and the vulnerability of regional economies. Expressed in terms of a regional impact 'multiplier,' as an increasing proportion of regional income is spent outside the region (and often in other countries), the local multiplier will decrease. A government policy to subsidize the construction and use of wind turbines (for example) to benefit a region will have economic spillovers impacts along the supply chain for those who (say) manufacture

the components in China. Globalization means that beneficiaries of regional initiatives are less likely to be the region's residents, and at the same time the region's residents will increasingly be influenced by events far beyond their borders and beyond their control. Of course, such trends not only have implications for regional policies, but also help explain why (for example) a national stimulus package may have been much more successful in the comparatively closed economies of the 1930s.

Free-flowing capital and the competition for knowledge workers intensify the international competition among FEAs. Greater Kansas City is not just competing with Greater St. Louis or Greater Omaha, but competes more than ever with faraway places such as Beijing and Baden-Württemberg for capital, knowledge workers, and entrepreneurs. This competition means that if Kansas City wins (loses) this economic competition, they are not only going to pull (lose) capital, entrepreneurs, and knowledge workers from just their historic competitors St. Louis or Omaha, but also from the rest of the world.

In our discussion, we have shown how rural parts of FEAs have become more economically linked to their urban core, and at the same time, have become more interdependent with the rest of the world. The geographically expanded FEAs are 'thinner' near their borders as the newly 'incorporated' rural areas play a role akin to low density suburbs, and the borders are increasingly porous, leaving the region open to the rest of the world beyond its traditional nearby competitors.

Regions Matter More than Ever in the 21st Century

The patterns described above suggest that regions and their characteristics are likely to become more important, as the agility with which entrepreneurs, capital, and knowledge workers relocate from lagging to preferred regions increases. With more mobile resources, policymakers' understanding of the dynamics of regions takes on added importance, as the smallest advantages (disadvantages) are magnified in their effects on the region's prosperity (Thisse 2010). The region's success in being 'picked' as the location of choice for households and firms is of critical importance for the survival and prosperity of the region.

While regions expand in size and become more open, the spatial configuration within which individuals live, work and conduct their day-to-day expenditures is still discrete and has physiological limits. In an early discussion of FEAs, Fox and Kumar (1965) assert that the maximum time a typical person is willing to spend commuting is one-hour each way. As particularly road transportation has improved, the geographic distance consistent with a one hour commute has expanded somewhat (Ali et al. 2011; Anderson 2002; Eliason et al. 2003; Rouwendal 1999). However, the daily time constraint is relatively immutable, including time at work and time for sleeping, eating, and personal maintenance. Likewise, as rising wages increase the opportunity costs of commuting time, there are limits to the geographic extent of a region. Indeed van Oort et al. (2010) point to very stable commuting times over 20 years in the Netherlands.

There are further practical reasons for regions to continue to matter. For instance, infrastructure decisions of governments and the investment decisions of firms are by definition site-specific and these decisions will, in turn, continue to be very important for the regional population. And while external “global” connections are increasingly important, core activities of employment, day-to-day shopping, children attending school, access to health services happen for the most part within the FEA. Thus, the daily lives of individuals continue to be strongly influenced by regional economic conditions.

We have shown how economic development is now a regional concern as the link between place of work and place of residence has long been cut, creating the need for broader economic development and transportation strategies, and land use planning that reflects the actual regions that people live, work, recreate, etc. However, it is important to be aware of regional characteristics as well as the potential and limitations of various regional development strategies. In understanding this context, we now turn first to the suboptimal economic development practices that permeate the current policy landscape, saving for section 4 how regional policies should be developed, given the realities we have described.

Suboptimal Policies and Current Economic Development Responses.

Regions participate in economic growth differentially. Space still matters (Leamer 2007) and economic growth happens at particular sites with either natural advantages (access to ports, natural amenities) or access to urban agglomeration economies. Factors that influence growth are not ubiquitous and that means that not all regions can realistically expect to participate equally in the growth process. There is a natural evolution of regional comparative advantage with changes in technology and market demand. For example, textiles were the ‘hot’ mid-19th Century industry, centered in New England. However, as the production technology changed, textile firms migrated first to the low-wage rural South and then abroad. Of course, this process left historic New England mill towns in economic distress until new industries filled the void. The new industries are typically higher paying than textiles and New England remains a prosperous location in many dimensions despite the loss of what was the key industry of the mid-19th Century. In fact, the economics literature is full of examples of communities recovering from economic shocks, illustrating that if a community has a good foundation, it can be very resilient to economic shocks.^{vii} Nonetheless, despite the clear aggregate macroeconomic advantages of resources flowing to more productive or lower-cost locations, such evolutions have resulted in attempts by those not favored by this adjustment process, or by senior governments with a mandate to address regional inequality, to try to stem natural market trends by supporting declining regions. These interventions have typically had unintended consequences and are usually expensive.

One problem with addressing regional inequalities is that the decision is inherently political and the resulting policies and processes often run counter to economic fundamentals. For example, trying to help remote regions in decline is often very expensive with high opportunity costs and can reduce aggregate growth when resources are diverted from more productive regions with agglomeration economies to sparsely-settled regions that lack them (Polèse and Shearmur 2006). Indeed, such growth-reducing effects are why the World Bank (2009) called for greater use of spatially neutral policies to encourage growth in locations where it will be most productive (which they argued was large cities).

Reducing broader multi-province or multistate regional inequalities is primarily a concern of national governments—e.g., addressing the persistent poverty in Appalachia or in Atlantic Canada, or addressing the massive population loss in the Great Plains of North America. If intervention in an attempt to reduce regional disparities does not produce a strong endogenous growth response, it will likely reduce national income or slow needed adjustments from low to high productivity regions. Worse yet are responses in which, firm, industry or sector policies are disguised as broad-based regional development policies designed for entire regional population. Too often such policies merely support rent seeking by local elites rather than helping the broader population (Storper and Mannville 2006). Section 4 will describe when interventions are justified on an economic basis.

We assume that a common goal for the vast majority of communities, cities, and regions is the availability of diverse economic opportunities with high income levels and/or quality of life.^{viii} Though not always the case, these economic opportunities are typically associated with population and employment growth, especially in the slow growth of the early 21st Century. In pursuit of this goal, communities and their broader regions strive to advance their strengths to attract new firms and enhance economic opportunities. At the national level, if it is effective, this constant competition among regions should increase aggregate productivity by improving regional productivity and encouraging resources to flow to higher productivity regions.

If the inter- and intra-regional competition is conducted in an inefficient manner, it could lead to wasteful overbidding for new firms. In this case, it could be a negative sum game from the nation's perspective. Further, from the receiving region's (or community's) perspective, it may be wasteful and futile in terms of long term, sustained growth. A key feature of wasteful competition is that it encourages firms to relocate away from their most productive location.

This wasteful competition (or "winner's curse") too often entails a series of incentives and subsidies that have the opportunity cost of the lower taxes or better services that may have instead been more beneficial to the receiving region's residents (e.g., Burstein and Rolnick

1994).^{ix} Further exacerbating matters is the firm's origin region now has more unemployment and less tax revenue to address its needs. We now consider wasteful competition in more detail. *The Reliance on Fad-Based and Inefficient Policy.*

Local economic development initiatives are often attached to the latest economic development fad. Johnson (2007) describes these fads as typically associated with one particular guru, whose claims and recommendations are somewhat vague, whose ideas promise broad applicability and easy-to-follow recipes. There is usually very little empirical research basis to support the craze aside from charming anecdotes. However, Johnson points out that there is usually a kernel of truth in the attraction of the fad, which is why it typically catches on. Fads that have had widespread appeal at some point since the 1990s include recreating the next Silicon Valley (Silicon Prairie, Silicon Tundra, etc), bio-technology, value-added manufacturing, attracting immigrants to declining areas or (more recently) attracting creative class and bohemians. Perhaps that most prominent fad over the entire period has been clusters, which persists despite limited empirical support. Today the rush to green jobs is in vogue, which has also taken off with very little solid research to support the notion that 'clean' jobs will be a major *net* jobs creator (which is not to say that environmental sustainability is unimportant!).

The underlying notion of most economic development fads is that government policymakers can find the next 'hot' industry and divine its ideal location. This implies that policymakers are particularly adept at identifying what will be the future strategic industries *and* their locational requirements. Illustrating the difficulty of picking the hot firm or industry, economists have long known that beating the financial market average is difficult as recently illustrated by the wreckage of the dot.com bubble, the housing bubble, and the financial derivatives bubbles. As Princeton economist Burton Malkiel (2003) colorfully put it, a blind folded monkey could perform as well as most stock pickers. The point is that if expert stock pickers have an exceedingly difficult time, it is unclear how inexperienced economic developers or politicians would do any better at picking winners.

There is no shortage of examples of failures by local economic development professionals in picking the next growth industry and its ideal location. Glaeser and Gottlieb (2008) provide well-known examples of failings of government leaders in picking industries despite an abundance of confidence in the new fashion at the time—e.g. the much vaunted efforts of Japan’s MITI, U.S. efforts to develop alternative energy in the in the 1970s such as oil shale, or the misplaced efforts in the last decade to build biotechnology clusters. Further, in their efforts to develop the next hot sector, politicians and economic development professionals often offer tax incentives and subsidies. Indeed, while economists talk about the costs of tax incentives such as shifting resources from productive uses to sectors with lower productivity (and/or higher taxes and lower public services to pay for the incentives), politicians and economic development professionals persist in efforts to support sectors/firms that the market would not do alone.

What then explains why policymakers make proposals such as promoting wind energy in places that are not windy, proposing solar farms in places that are not sunny, or build biotechnology clusters in places that have no chance of success? First, it is not literally impossible for a region to develop a competitive advantage in a particular sector—e.g., the Research Triangle in Raleigh-Durham comes to mind—but the costs can be very high and the odds of success are very low as demonstrated by the scores who have tried and failed to replicate the Research Triangle or Silicon Valley. Yet, the low odds of success leads us to conclude that policymakers are either overconfident or (more likely) believe they will not be held accountable for their failings. Second, politicians are under so much pressure to create jobs to improve their chances of reelection that they feel compelled to demonstrate that they are doing “something,” even if that means following the latest craze with very little likelihood of success. Offering tax breaks and incentives to just about everything also allows politicians the opportunity to claim credit for positive economic events even if their actions had very little to do with the actual outcome.

A third reason is that economic development professionals are judged by brokering ‘deals’ they can sign and whether they appear to have a ‘progressive’ forward-looking agenda. While

landing big companies with massive subsidies and tax breaks may not improve the community's *overall* or *long term* well being, sticking to tried and true basics is not sensational or 'progressive' and takes time and patience to realize results. Of course, patience is not a virtue of politicians up for reelection after making bold promises of new jobs. Likewise, landing a big company can quickly help the development professional (or politician) move on to their next job before the costs of their actions are fully realized. Generally, economists do not fully appreciate the incentive compatibility problem between the personal utility function of professional economic developers and the needs of the community at large.

Because the cluster fad has been so prominent in economic development, we spend some time discussing it to illustrate both the attraction of these temporary distractions and their downfall. Clusters are a hybrid of the sectoral policies described above and are associated with the Harvard management expert Michael Porter. He defines a cluster as "...a geographically proximate group of companies and associated institutions in a particular field, linked by commonalities and complementarities" (Porter 1998, p. 198). So, for example, a grouping of health service companies could be a medical cluster, or a grouping of biotech firms a biotechnology cluster, or a grouping of tourist sites such as those around a gambling casino could be an entertainment cluster.

As with other fads, there is a kernel of truth in the cluster arguments. Indeed, Porter's notion of clusters is actually quite old as economists dating back to the 19th Century have described the workings of localization economies (Martin and Sunley 2003; Duranton et al. 2010). Though not as alluring as the term 'clusters,' localization economies is the simple notion that proximate firms in a given industry and supply chain can take advantage of closer proximity to customers and suppliers, better attract a labor force, or capture spillovers from emulating successful competitors.^x

Economists typically find that doubling the relative size of a given industry within a region is associated with a 3-8% increase in that industry's productivity, about the same size as the effect of urbanization economies (Duranton et al., 2010; Puga 2010). Because urbanization economies

apply to *all* firms in a region versus just the firms that are part of the ‘cluster,’ the scale of its impact would be across the broader economy benefitting all or most residents, not just the workers associated with the cluster.

The criticisms against cluster policies are numerous and include the lack of systematic evidence that cluster development policies have positive effects. A key criticism is that the definitions of clusters are so vague that they cannot be applied on a consistent basis across regions, while the heterogeneity across clusters further makes it impossible to draw general policy rules from their success or failings (Martin and Sunley 2003; Duranton et al. 2010).^{xi} It is really unsatisfying that the success of clusters is measured by the notion “you know it when you see it.”

A second criticism is that promoting a cluster too often requires the use of subsidies or tax breaks, which have opportunity costs for the broader regional economy. Further, after identifying (and subsidizing) a cluster, who knows whether it will experience a downward spiral? In a worst-case scenario, the demise of Detroit’s automotive cluster brought the whole region down illustrating how the resources would be better expended diversifying the entire Detroit region, not just supporting a cluster that is on the verge of becoming uncompetitive. Clustering also further concentrates a region’s economic activity in the industries within the given cluster, while the evidence suggests that more diverse economies have better economic outcomes (Glaeser et al., 1992; Partridge and Rickman, 1995; Duranton et al., 2010).

Perhaps most telling is that even if successful, a cluster is unlikely to have much of an effect on the region. Duranton et al. (2010) show that doubling the size of a cluster (which would be a remarkable policy success) would only lead to about a 2% increase in wages and that this effect would be limited to those workers employed in the cluster. This is certainly not a transformative event for the region’s workers outside of the cluster. Finally, a typical finding is that an industry’s local growth is inversely associated with its initial relative share (e.g., Desmet and Fafchamps 2005; Partridge et al. 2008). That is, there is a reversion to the mean effect where relatively large sectors (the clusters) tend to grow less than the regional average, perhaps because

of the greater competition for customers and inputs in bigger clusters. Indeed, such a finding might explain why Feser et al. (2008) found that technological-based clusters in the Appalachian region were not associated with subsequent employment growth.

Why does it matter? Despite the dubious empirical support for cluster policies, they are widely used around the world as a leading economic development tool. Moreover, the concept has been recently recycled by the U.S. Department of Commerce and the U.S. Small Business Administration in the form of “Regional Innovation Clusters” to promote regional economic growth.^{xii} While we agree that regional approaches are generally optimal for promoting growth, the consensus among economists is that cluster approaches are misguided and divert scarce resources away from higher valued uses. Perhaps more importantly, the focus on clusters diverts resources from broader-based efforts that consider the full range of sectors, an approach that would likely be effective. Efforts like supporting clusters may produce short-term “successes” such as increases in networking or meetings, but are unlikely to promote long-term growth unless the economic fundamentals are supportive of the cluster (which raises the question of why development policy was needed in the first place). Thus, while good economic development policy should promote or market a region’s advantages including organically formed clusters, efforts to artificially 'build' clusters are likely to be unsuccessful, especially when these efforts come at the expense of broader-based efforts aimed to help the entire community, not just the cluster.

The arguments against clusters promotion as an economic development policy can be extended to most other fads. To translate into real economic development, these efforts would require (on the part of the policymaker) intimate knowledge about the details of the next growth industry. They would also require clairvoyance about whether other countries will eliminate a particular region's competitiveness (e.g., India’s gains in software are one reason why U.S. information sector employment has recently declined). Indeed, the hot industry of the late-1980s and 1990s for industry targeting was the information sector including ‘dot.coms’ (information includes software and telecommunications). Even as it was the so-called “can’t miss” future

growth industry of that era, between its peak in March 2001 and August 2010, U.S. information employment declined by 27.1%, while total nonfarm employment only declined 1.8%.^{xiii} Even if a sector is poised for growth, policymakers still need to know which individual firms (and their managements) will prosper and *where* they will prosper. Further complicating matters is that even if a sector is growing, there are still questions about which technologies will succeed. For example, what types of biotechnology will flourish, or will fuel cells be the next technology for automobiles vs. other technologies, and so on. Politicians and economic development professional are unlikely to be well-positioned to know these answers.

Selecting individual firms for tax incentives and tax subsidies is a key component in implementing cluster policy, sectoral policy, or other state and local economic development policies. The vast majority of related literature argues that individually selected tax incentives for firms are ineffective at increasing local prosperity (e.g., Burstein and Rolnick 1994; Holmes 1995; Gabe and Kraybill 2002; Peters and Fisher 2002; Bondonio and Greenbaum 2007; Glaeser and Gottlieb 2008; Lee, 2008; Goetz et al. forthcoming). This is in contrast to a more widely accepted alternative view that a more neutral policy of *across the board* low rates of business taxes can lead to greater economic activity. For example, Bartik (1991, p. 43) estimates that a 10% across-the-board reduction in state or metropolitan area business taxes will increase that area's economic activity 1 to 6%.

Greenstone and Moretti (2004) and Greenstone et al. (2010) are two papers that challenge the notion that tax incentives to individual firms are necessarily "bad." They examine the location of large facilities (so-called 'million dollar plants') and compare various firm/place outcomes to the outcomes of the 'losers' that did not win the competition. The losers are among the finalists with the winner for the location of the million dollar plant as identified by the trade publication *Site Selection Magazine*. We do not dispute the author's empirical results, but we are skeptical of their identifying assumption. Basically, our point can be made using the same example used by Greenstone et al. (2010): i.e., BMW's 1992 decision to locate a large facility in Greenville-Spartanburg, South Carolina versus the reported 'loser' Omaha, Nebraska. Greenstone et al.'s

(2010) identifying assumption is that the ‘loser’ is like the winner in every key dimension except that the winner ‘won’ the plant—i.e., without the million dollar plant, they would have equal performance. Thus, comparing (or differencing) the *ex post* outcomes would tell us the effect of locating the plant because the loser acts as the counterfactual.

Despite Greenstone et al.’s (2010) examination of some pre- and post-location decision trends, our view is that it is entirely possible if not highly likely that the firm (and its site selection consultants) is more strategic than just ranking the winner and loser based on their economic fundamentals. In particular, would not the firm consider its *own* profits rather than just the community’s relative economic fundamentals? Indeed, a strategic profit maximizing firm likely keeps a set ‘losers’ in the mix because the losers were offering very generous incentives, even if the losers had very weak economic fundamentals. In this way, the firm could use the loser’s bid as a way to extract greater rents from the winner. Such a possibility is further supported because the firm will understand its profitability better than the communities who are doing the bidding.

In the case of BMW, why would Omaha ever be the runner up in a competition for BMW? Omaha has no strong access to the auto supply chain. It is not geographically close to the major markets, or to a port for importing of European components, or exporting vehicles. Across the United States, was Omaha truly the next best alternative for BMW? Or was Omaha left in the mix because it offered very generous tax incentives and it allowed BMW to secure a better deal from Greenville-Spartanburg? Is it possible that ‘losers’ are losers for a reason? We believe that a comparison to the nation as a whole is actually an adequate counterfactual assuming one controls for the conditioning variables. Angrist and Pischke (2009, pp, 69-77) argue that such matching strategies employed by Greenstone et al. (2010) would produce results that are mainly the same as standard instrumental variables (IV) or ordinary least squares (OLS) strategies. Any difference is that matching strategies put more weight on the ‘treated’ observations and standard regression approaches put more weight on cases where there are nearly equal cases of treated and untreated observations. Indeed, Greenstone et al. (2010) find that when using *all* U.S. counties,

the winning counties had a small relative *decrease* in Total Factor Productivity, which we find more realistic.^{xiv}

Nonetheless, we believe that the most appropriate counterfactual to offering firm-specific targeted tax incentives is offering *across the board* lower taxes for *all* businesses. Implementing across-the-board lower overall business taxes (or better services), which does not require oracle-level information about the future growth industries or about the nonlinearities of localization or urbanization economies, is much more likely to be successful. Likewise, if the goal is employment creation, new jobs tax credits that treat all firms equally would more directly address the stated objective than picking firms.

To illustrate the point that ‘landing’ big million dollar facilities is unlikely to lead to strong growth, Panel a of Figure 3 plots 2008-2010 state job growth on the number of per-capita million-dollar facilities announced for the 2005-2007 period from *Site Selection Magazine*. Then to consider employment growth in the last year prior to the Great Recession and the first year after the Great Recession, Panel b reports 2006-07 employment growth on announced 2005 facilities and Panel c reports 2009-10 employment growth on announced 2008 facilities. We also point out some interesting state cases. When interpreting these numbers, two factors likely mechanically increase (positively) the correlation. First, firms are most likely to expand or open large facilities in states that they expect to grow regardless of the plant expansion. Second, we likely are capturing some construction, and this typically has large employment effects. Nonetheless, the correlation is always near zero and statistically insignificant. Indeed, we tried other years and the correlation was always near zero (both positive and negative) and never statistically significant regardless of considering all facilities or million dollar manufacturing facilities (because they might spur the location of other suppliers).^{xv}

We are careful to not infer causation from these regressions, but it is very clear that being the big ‘winner’ in luring million dollar plants is not a transformative event. Yet, landing big plants receives a vast share of the attention from politicians and economic developers. Our findings are consistent with Lee’s (2008) findings that manufacturing relocations are a minute share of

manufacturing job growth and that incentives play very little role in their decision to relocate. Later, we will describe strategies with better prospects than trying to land mega-projects.

Again, we ask why do politicians and economic development professionals engage in tax incentives if their success rate is so low? A key reason is the incentive compatibility problem that residents do not have full information regarding the effects of alternative policies. Conversely, economic professionals get ‘promoted’ to their next job by cutting deals and the full costs, including the recognition of failed policies, may not be apparent for many years. The political economy of tax incentives is very similar to the political economy of trade policy. That is, voters do not fully recognize the lower prices due to imports and voters do not know which exporter thrived due to free trade, but they can identify a plant closure in a newly uncompetitive industry. Analogously, the firms benefiting from across the board tax cuts, many of which would be small businesses below the radar, would be invisible to voters. Cutting of ribbons by politicians, in contrast, is highly visible when they ‘land’ a big firm with tax incentives. Also, like the international trade political economy literature, another reason for tax incentives is that local governments are under extreme lobby pressure by rent-seeking ‘loser’ industries that survive only with favorable treatment (Baldwin and Robert-Nicoud 2007), while profitable industries do not need such support.^{xvi}

Effective Regional Strategies for the 21st Century

The appeal of the fad is that it promises a quick and easy fix. Effective strategies, on the other hand, tend to be tedious and typically need to be nurtured over a sustained time period. Conceptually, the task is one of becoming the region of choice for households and firms in their location decisions based on utility and profit-maximizing motivations respectively. Practically the region's mission is to maximize the probability that it will be chosen by successful businesses, and let the households and firms sort themselves into preferred locations. Of course, this process can entail aggressively marketing the strengths of a region including its schools, infrastructure, human capital, regulatory and tax environment, and the organic formation of clusters that may or may not be expanding. In this environment, all firms large and small

regardless of industry have an equal chance to prosper based on the economic fundamentals. This stands in contrast to 'picking the industry' for the particular region and then diverting resources from other sectors in the region to promote this favored existing or anticipated industry (e.g., green energy, a particular cluster, or a retail development favored by local elites).

Note that advocating limiting subsidies and tax breaks may appear as though we are proposing a limited role for governments. That is not true and it is likely the opposite. Governments providing good governance are the core of effective regional strategies for the 21st Century. Governments are indispensable in performing what are well-understood government functions: the provision of public services (education, information, security) and infrastructure, and ensuring that the regulatory framework is both adequate to protect (public and private) property and individuals and does not stifle growth and development. Providing good schools and infrastructure, and performing their functions efficiently and effectively actually requires a relatively active government, but one focused on the activities that are best accomplished by governments, avoiding venturing into activities that are best left to the private sector. Governments do not have a good track record in private sector activities. Indeed, well-informed voters (and media) may be what are needed for officials to implement good policy, meaning voters need to understand what governments can and cannot do for local development. In this, we are reminded of the role Ross Perot played in American politics in 1992 of informing voters of the costs of high government budget deficits and the tradeoffs involved in reducing them. If local jobs are important to voters, such teachable moments would seem to have high payoffs.

In designing a successful regional strategy, then the first question is what does it take to be the chosen region by firms and households in a globally competitive environment? Successful regional characteristics are likely to include the following:

- 1) Efficient provision of government services (and regulations) that are desired by residents and businesses, including a governance structure that reflects the functional economic integration. The successful region will also have to weigh the tradeoffs between policies that firms like with those that households like and not just favor one or the other;

2) High levels of human capital and especially knowledge workers. This means knowing and responding to what would make living in the region attractive to this group of workers; and

3) Support for entrepreneurship and innovation, where the latter is to be interpreted broadly including incremental innovations to help produce or develop a product. However, we note that it is not necessary for the region to be the ‘innovator,’ but the region needs the capacity to be able to adopt innovations and increase productivity. Productivity is what ultimately raises living standards; and

4) Recognition of externalities that may be generated due to private sector activity or inactivity, and appropriate responses.

Regional policies that produce these characteristics are the 'best bet' for sustainable regional development.

Efficient provision of Government Services

Innovations in governance can facilitate efficiencies by internalizing the range of spillovers and externalities that occur across existing administrative boundaries, which seldom coincide with FEA boundaries. For instance, there is evidence of substantial positive spatial spillovers from urban growth, often extending out to 100kms or more in the countryside (Partridge et al. 2007; Barkley 1995). Internalizing these externalities will be one of the benefits of governance arrangements that recognize expanded FEAs. If the beneficiaries of public expenditures coincide closely with the taxpayers, the latter will have a vested interest in the provision of the level of public services needed to make the region attractive. For example, transportation improvement financed by taxes within a commuting shed benefits both rural commuters and urban employers. Similarly other public infrastructure such as libraries, schools, landfills, water and sewage, that serve the FEA are ideally financed from a tax base comprising the entire FEA, both for equity considerations and as a way of internalizing the externalities (Drabenstott et al. 2004). In practice, to achieve such levels of regionalism, metropolitan areas need more effective tax sharing. One example is the tax sharing of increased property tax valuations in the Minneapolis-St. Paul area that reduces fiscal disparities in the region and reduces competition between

neighboring cities (Orfield, 1997). Overall, proponents of more regional approaches look to the limited successes around Portland, OR, Indianapolis, IN, and Louisville, KY as good starting points as providing valuable lessons for how to proceed and for the need to incorporate the entire region beyond the central county (e.g., Rosentraub, 2000; Muro, 2004). Of course, there are other complications to forming regional governance such as defining the region (which we argue should roughly follow commuting patterns) and developing an inclusive political process (Rodríguez-Pose, 2008).

It should be noted that our call for regionalism does not contradict Tiebout sorting arguments. We are just geographically extending them by noting that the relevant “community” evolves over time as technologies and transportation change. In 1950, as we have shown for our four case-study metropolitan areas, communities were geographically compact with fewer spillovers from neighbors. Today, “communities” are larger with widespread spillovers that produce *regional* communities. In these regions, individuals will continue to make their location choices based on their preferred level of public service provision (and taxation), but local/regional governments will be collecting taxes over a base that is more consistent where the benefits are consumed, that is, functionally integrated. Further, with the largest feasible market area, they will be able to realize economies of size and scale in the provision of those services. In these large organically formed regions, the spillovers will be internalized if governance structures are organized to reflect the reality on the ground. Tiebout sorting, indeed, will continue to favor regions based on functionally integrated areas, as the tax cost of public services will be at the lowest feasible level given the market size.

In an era of tight fiscal budgets, changes in governance to reflect the regional realities of North American FEAs are an appealing way of improving economic outcomes without greater expenditures. Even so, it has long been pointed out the current governance structure is ineffective and does not represent the realities of modern regions. For example, Allen (1931) long ago argued that the province of Saskatchewan’s local governance structure was far too fragmented for the technologies and transportation of the 1930s and needed to be reorganized on a regional

basis. While Allen's arguments were obvious and, of course, have greatly strengthened since 1931, virtually nothing has been done. One reason is that many local policymakers feel they would be made redundant in regional approaches (which is undoubtedly true), and some rural residents have concerns about losing local control. Ironically, the status quo implies the loss of control. "Small box" rural governments such as townships in the Midwest and Northeast U.S. and rural municipalities in Canada (and even sparsely populated counties) often lack the capacity to effectively provide public services and conduct economic development. The status quo means the death of too many communities or at best, a lower standard of living and quality of life.

High Levels of Human Capital

The importance of human capital in any development process is certainly well-established (Glaeser et al. 1992, 1995, 2004; Simon 1998; Simon and Nardinelli 2002). This is perhaps increasingly so in the 'Knowledge Economy' where the premiums for education have been rising. Fostering regional capacity through providing high quality education is one of the strategies often advocated as a result. A well-educated local labor force is an attractive regional asset both for firms and households in their location decisions. Not only are educated individuals better off but the well-documented societal and economic spillover benefits strongly support this strategy (Moretti 2004). Indeed supporting institutions of higher learning has from time to time become a regional development strategy in itself (Andersson et al. 2004; Drabenstott et al. 2004; Goldstein and Renault 2004). Supporting universities is a start, but education begins very early. In this, early childhood education likely has the highest returns. Because early childhood education is good for future worker productivity and in attracting current parents interested in the education of their children, it is increasingly viewed as an economic development strategy that pays higher returns than tax abatements (Bartik, 2011).

Human capital intensive workers are, however, highly mobile (Faggian and McCann 2009a, 2009b), especially in a North American context (Yankow 2003). Attracting and retaining this coveted segment of the labor force is essential to a region poised for long term and sustainable success. Public services and facilities such as libraries, museums, good broadband connectivity

and transportation access can be instrumental both in retaining an educated population and in attracting others, but we caution that such strategies need to be subjected to benefit-cost analysis and not justified on the basis of wishful thinking.

Within the labor force characterized by high levels of human capital, knowledge workers are often identified as particularly appealing, as they comprise an increasing share of the workforce. The occupational structure of production, across industries, is increasingly concentrated in the professional, managerial and administrative occupations (Autor et al. 2003; Berman et al. 1994). In this competition, regions need to be realistic in their aspirations. Higher-order occupations and jobs will likely be predisposed to locate in or near urban settings. Hence, rural communities that are not linked into urban-centered regions will not participate in this type of growth process and “going it alone” likely means a future of low-wage jobs if not outright death for those rural communities without other assets such as natural amenities.

A related set of regional policies is the pursuit of the Creative Class (CC). There is a literature proposing that the CC, variously defined, is a desirable cohort to be courted and attracted (Florida 2002; Florida et al. 2008; Hansen et al. 2009; McGranahan and Wojan 2007; Nathan 2007). This degree of specificity in identifying a particular type of human capital may be unnecessary (Glaeser 2005; Olfert and Partridge, 2011; Comunian et al. 2010). As an explanation of why the presence of knowledge workers is important to any region, this work is instructive, illustrating that a 21st Century perspective that knowledge workers are mobile and regions are competing for them. Yet, the creative class prescription appears to have been taken too far by practitioners and politicians. This pattern is illustrated by trying to make downtowns attractive to young university educated workers in areas that have little hope of success or focusing on artistic Bohemians as a broad-based development strategy, both of which lacked a research basis.

Attention to the provision of a broad range of services that improve quality of life through public services provision and good governance is essential for the attraction and retention of a high quality labor force. A physically pleasing environment, access to recreation and cultural amenities, safety and security and high quality transportation and communication infrastructure

will be demanded by the labor force that regions wish to attract. A possible caution against singling out local natural amenities as a strategy is that if successful, these attractions may be quickly capitalized into higher land prices.

Support for Entrepreneurship and Innovation

The third constructive regional development strategy indicated above is the support of entrepreneurship and innovation (Deller and McConnon, 2009; Deller forthcoming; Drabenstott 2008; Loveridge and Nizalov, 2007; Rodriguez-Pose and Crescenzi, 2008; Goetz et al. forthcoming). Like the basic good governance and management policies described above, supporting local entrepreneurship should be standard fare, though it is often neglected in favor of more glamorous short term strategies such as attracting big outside firms with tax incentives. Providing an environment conducive to entrepreneurship and innovation includes reducing uncertainty about future conditions through a transparent and efficient regulatory environment, provision of modern transportation, communication and information services, and access to a skilled labor force as well as to a network of other entrepreneurs. To be clear, because successful entrepreneurs can be found in all industries, a region's focus on entrepreneurs should not be limited to 'hot' or seemingly 'advanced' technologies because this would rule out the most realistic possibilities for growth for that region.

There are other advantages of focusing on entrepreneurship and small business development through business retention and expansion efforts (Fleming and Goetz, forthcoming). First, small businesses seem to be more likely to purchase inputs locally rather than from a global supply chain, increasing local spillovers. Second, they are less likely to outsource or to relocate to say China. Third, they foster the creation of a diverse economic structure that we have already noted that will likely outperform regions that possess a concentrated local economic structure. Finally, cultivating local businesses does not require the use of potentially excessive tax incentives to outside firms, who in turn, may be likely to leave for greener pastures in the future.

Externalities and Market Failures

Where private sector investments/developments produce externalities, public policies may be

required to regulate or mitigate the effects. Environmental degradation and pollution are clear examples. Either for future economic development or current and future quality of life, policy interventions may be called for. Appropriate measurement and monitoring, and anticipation of future incidence of effects may be challenging and will require both good judgment and sophisticated quantitative techniques (including evaluation). The more difficult case, is the claim that current interventions are required to maintain or develop options for future development, or the support of “can’t miss” infant industries that are projected to (eventually) become self-sufficient and regionally important industries. Retaining future options for development through expanding the infrastructure (“build it and they will come”) is at best high risk. Justifying the support of new industries based on future large regional spillover effect, even more so.

Reality Check

There are no guarantees associated with exploiting the best policies, even if they are much more likely to be successful than suboptimal policies. Even if regional governments and residents do everything right, their region and community still may not prosper because they are competing with the rest of the world. Employing the best strategy is not a sufficient condition for success. It does not guarantee that the region will be chosen by a particular industry or household type, but the firms and households who do choose the region are doing so for sustainable reasons and will form the basis for long term growth and development that is appropriate to the region. To do otherwise is costly and will lead to, at best, very short term gains.

Future Challenges for Regions.

Beyond the regional policy recommendations proposed here, a number of new and ongoing challenges remain. Ongoing challenges include evolving preferences and demands of households and firms, as well as technological changes that alter significant relative prices, eroding existing competitive advantages and creating new ones. Nevertheless the region's 'Best Bet' is staying the course with basic and fundamental good policy, knowing that this is a necessary but not sufficient approach. Indeed, we do not propose silver bullets for regions in persistent decline and we realize the best strategies for maximizing the residents' utility may be to facilitate the process

of out-migration of firms and people.

Communication and 'recruitment' may become an important regional initiative in the global bid for the attention, and endorsement of firms and households both local and distant. Skillfully tailored internet-based communication will be required where paper or other more generic media used to be adequate. The speed with which information can be accessed and both the aesthetic and substantive quality of the information can make an essential difference. Internet users, especially those the region would most like to retain/attract are sophisticated and time-constrained. Yet, this does not rule out the need for word-of-mouth and personal meetings to facilitate communication. As one economic developer told us, potential contacts have to know a little about your location before they will even think to 'Google' your community.

The more sinister challenges, however, are structural changes due to a range of exogenous forces. Among these are fundamentally binding budget constraints, changes in energy prices, and climate change. Although changes in budget constraints may commonly be considered more cyclical than structural, there may be long term public debt constraints or ideological shifts that limit public sector involvement in the form of regional economic development policy. Austerity and a reduced appetite for public sector spending may also follow from global shifts in relative economic growth rates. Enthusiasm for public policy could also wane due to a paucity of high quality accessible research detailing the conditions under which regional development policy may be successful. In addition, the ongoing redistribution of population will reduce the political (and policy) importance of some regions, especially those rural and remote.

A second significant challenge, the specter of higher energy prices fundamentally altering spatial economic relationships, is not new. Even though previous periods of intense concern have come and gone with apparently little effect, the possibility of a reversal cannot be ignored. Yet, Europe has faced similar dynamics in the spatial formation of FEAs, even with significantly higher energy costs, implying North America is far from a transformative change in the evolution of FEAs due to higher energy prices. Nonetheless, regional conflicts, logistical and institutional failures or absolute resource depletion have the potential for major price disruptions.

Major sustained increases in energy prices could greatly alter relative FEA competitiveness through structural changes in prices and transport costs. Clearly, efforts to achieve lower energy usage per capita will shelter regions from such trends, while the *sensible* adoption of alternative energy sources will be appropriate when new technologies make these sources cost effective (including counting the full social costs of fossil fuels). However, we have already warned against the adoption of 'faddy' green/clean energy economic development policies that lack an economic basis and are instead the products of good intentions or wishful thinking.

Perhaps of greater concern as an exogenous and pervasive influence is climate change. Ongoing and sustained changes in temperature, rainfall and sea levels are well documented. A global shift in the food productive capacity of regions is one of the obvious consequences, leading also to a shift in relative prices of especially fresh produce across regions. Desertification of some regions along with improved productivity of others is likely to result.

While the natural environmental consequences of climate change are understood to some extent, at least in their broadest form, the human responses are less often alluded to in the related discussions. Indeed, the research agenda in North America hardly recognizes that climate change will greatly alter migration behavior and how it will affect the competitiveness of regions. The most significant force in U.S. population movements over the past 50 years has been the move to a "nicer" climate (Graves 1976; Rappaport 2007; Partridge 2010). Vast migration flows and major population redistribution has resulted. Looming climate change has the potential to trigger an ongoing response of at least this magnitude. Previously favorably located regions in terms of warm climate and natural amenities may find themselves at a disadvantage, while other regions may flourish. The precise dimensions and boundaries of these effects may not be clear, but the general pattern is now known. For example, it is conceivable that states such as Florida or Arizona will be viewed unfavorably in terms of natural amenities while states such as Minnesota or Michigan may be viewed more favorably.

Reinforcing such migration trends is the tremendous change in infrastructure and government expenditures that would be needed in certain locations. For example, coastal regions will likely

have to relocate infrastructure due to rising sea levels, which is costly. Of course, this will require higher taxes, which will make these regions less competitive, which will be further reinforced if there are fewer and fewer people to support such government funding. We could see Sunbelt locations entering a vicious downward spiral that has afflicted Rustbelt locations since the 1970s. Others may disagree indicating a need for a climate change research program that considers the relocation of businesses and people versus one that is more static. In examining future competitiveness of regions, climate change cannot be ignored.

In this environment of ongoing, and potentially new and dramatic changes, it is even more important for regions to avoid the temptation to 'pick the winners' in terms of particular industries or clusters, or the flavor of the month. Given the uncertainties in the world, the chances of succeeding in that game in an increasingly global, open and changing environment would seem to be lower than ever before, while the opportunity costs are likely to be very high as "losing" regions will face outflows to the rest of the world.

Implications

To understand the overarching spatial dynamics of economic growth, it is essential to understand the geographically large (and growing) rural-urban economic regions where economic activity takes place. These regions have greatly expanded since the 1950s, increasingly incorporating rural areas that previously had only marginal linkages to urban areas. A clear implication of the rise of bigger 'mega' regions is that federal, state/provincial, and local development policy design should, in general, abandon the distinction of 'rural' and 'urban' (and then trying to define rural and urban). If people and businesses have long reorganized themselves on the basis of regions, then economic development policies should also be conducted on a regional basis. For example, rather than urban development policies being handled in U.S. Housing and Urban Development and rural development policies being handled in USDA Rural Development (along with scattered development functions in the Commerce, Labor, and Transportation Departments), it is time for a new U.S. Department of Regional Development to take the lead. There are entrenched interests that would fight such a reorganization, but federal

policy should be aimed at internalizing economic spillovers and maximizing economic performance rather than supporting rent seeking and outdated notions of economic development. Indeed, the current artificial distinction between rural and urban economic development slows the needed institutional adjustments to support regionalization. Why should rural-urban regions work together when policy is divided between them?

In adopting regional policies, successful regions are unlikely to be the ones that “pick winners” and offer subsidies and tax breaks to lure them. Policymakers have a dismal track record in picking winners and the tax incentives have a corrosive impact on the broader economy. Rather, policy should build a foundation that would attract the “winners” of the 21st Century. A region (or anyone else for that matter) may not know what will be the future strategic industries or firms, but they should create a climate such that the winners will choose their region because that is where these firms will be the most competitive (including being able to attract a capable workforce). A stronger foundation requires effective governance with high-quality service provision at a low tax-price, a setting conducive to attraction/retention/creation of knowledge workers, and facilitating and promoting entrepreneurial activities. And if the region, having conducted sound policy and good governance, is chosen by none or few, that is likely because the region is uncompetitive in the new reality. If true, it could surely only be made worse by expending public money trying to recruit outside firms against all odds, and in the end simply not meeting the necessary conditions and being even worse off.

Supporting innovation—broadly defined to include incremental innovations in process and product—is also helpful, but we caution that the ultimate goal should be higher productivity as that is what raises living standards. That is, the benefits of innovation can trickle out of a region by other adopters, while a region can be successful by being earlier adopters of best practice. Hence, having knowledge workers who can adopt best practice and new innovation is paramount. Likewise, export-based approaches are neither necessary nor sufficient for prosperity (Kilkenny and Partridge 2009). There are many examples of this such as the Great Plains region of North America being a major agricultural exporter despite wide-scale population loss.

Similarly, the Rustbelt has long been a major exporter though it has had a mostly stagnant economy (picture Detroit). Again, regardless of whether a region exports or not, the clear path to prosperity is high productivity. Finally, this brings us back to the conclusion that regions need to build from within by promoting their existing entrepreneurs and small businesses rather than the current overreliance on ‘faddy’ policies and landing big firms to the region.

Globalization and climate change will be two key challenges facing the competitiveness of North American regions. Globalization in conjunction with capital mobility and lower transport/communication costs raises the stakes of competitiveness. Small gaps in competitiveness mean that regions either pull resources from the rest of the world or lose their own productive resources. Getting it right becomes even more important in the global environment. Climate change has the potential to unwind the amenity migration that has driven Sunbelt growth. Not only will Sunbelt climates will be relatively less appealing, but rising sea levels and other factors will make it necessary to relocate infrastructure, which would be costly, making affected regions even less appealing. The possibility of major regional alignments cannot be dismissed, raising the question of whether American rural-urban regions are prepared. Going forward, focusing attention on how globalization and climate change will affect the productivity, competitiveness and realignment of North American regions is of urgent importance.

END NOTES

ⁱ They report that the average cost of moving a ton a mile fell from 18.5 cents in 1890 to 2.3 cents in 2001 (in 2001 dollars). Also see Partridge (2010) on the long-run decline of transportation costs.

ⁱⁱ Forming the Atlanta-Sandy Springs-Gainesville CSA is the Atlanta MSA in figure 1 along with the Gainesville, GA MSA and the La Grange, GA, Thomaston, GA, and Valley, AL micropolitan areas. Forming the Columbus-Marion-Chillicothe CSA is the Columbus MSA along with the Chillicothe, OH, Marion, OH and Washington, OH micropolitan areas. The Des Moines-Newton CSA includes the Des Moines MSA and the Newton, IA micropolitan area. The Minneapolis-St. Paul-St. Cloud, MN-WI CSA contains the Minneapolis St. Paul MSA, the St. Cloud, MN MSA and the Faribault, MN, Hutchinson, MN, and Red Wing, MN micropolitan areas.

ⁱⁱⁱ The formal definition of an urban area as defined by the US Census Bureau is:

1. A cluster of one or more block groups or census blocks, each of which has a population density of at least 1,000 people per square mile at the time;
2. Surrounding block groups and census blocks, each of which has a population density of at least 500 people per square mile at the time; and
3. Less densely settled blocks that form enclaves or indentations, or are used to connect discontinuous areas with qualifying densities. Source: www.census.gov.

^{iv} By comparison, U.S. Census Bureau data indicate that the overall nonmetropolitan rural farm population share was 3.8% in 2000.

^v Conversely, Grassmueck et al. (2008) find no evidence that government fragmentation in Pennsylvania contributes

to youth out-migration.

^{vi}We are not arguing that the world is flat and that distance is dead. Specifically, Leamer (2007) provides persuasive arguments that distance is alive and well in international commerce. However, in the key dimensions we describe, communities are increasingly competing and functioning in a global context.

^{vii}Some other examples of regional resilience to economic shocks are as follows. First, the New Economic Geography spawned studies of man-made disasters. For example, Davis and Weinstein (2002) found that rather devastating Allied bombing campaigns on particular Japanese cities had little influence on their long-run growth paths measured 10-12 years later. Likewise, evidence suggests that natural disasters such as floods or earthquakes have a temporary impact on the growth path of affected areas (e.g., Xiao, forthcoming). Similarly, new plant openings have only a modest impact on local labor markets (Edmiston, 2004; Kilkenny and Partridge, 2009), while communities that experienced military base closings may have actually fared better in the long run (Poppert and Herzog, 2003). The point is that underlying growth is determined by the long-run economic fundamentals, not short-term events like plant openings.

^{viii}Residents and responsive policymakers are obviously interested in broader quality of life. That is, residents are interested in maximizing utility (not just economic outcomes) as articulated in the core of the spatial equilibrium approach that is central to regional and urban economic modeling in North America (Roback 1982; Glaeser and Gottlieb 2008; Partridge 2010).

^{ix}A clear worst-case example is Rio Rancho, New Mexico's successful \$290 million bid to lure an Intel plant in 1993. The city did not account for the need to provide public services when it made its bid. As a result, Intel had to drill its own well for water supply, while the city was left with an overstressed water system, schools that were 60-90% overcapacity, and the city lacked bonding capacity (Schweke, 2009). Another egregious example is "job poaching" where nearby communities steal jobs from one another using various incentive deals—e.g., tax incentives are used to lure (say) a Wal-Mart from one city to another neighboring community. No net wealth is created, but the 'loser' city loses tax revenues and the winner also may lose tax revenue due to the incentive deal. It is unclear how the region benefits from such behavior. See Lynch (2010) for other examples of local governments overbidding for new firms and losing needed tax revenue.

^xLocalization economies stand in contrast with urbanization economies which are more related to positive spillovers of locating in a larger city regardless of the size of the sector.

^{xi}Gordan and McCann (2000) provide simpler classifications for clusters. While these classifications are pedagogically useful in an academic setting, it would be very difficult to use them for policymaking.

^{xii}For a discussion of the U.S. Economic Development Administration's cluster policy, see <http://www.eda.gov/AboutEDA/RIC/> (accessed on October 6, 2010). Discussion of U.S. Small Business Administration cluster policy can be found in Rahman (2010).

^{xiii}Likewise, the pharmaceutical industry lost about 1.0% employment over the period illustrating that biotechnology strategies of the past decade were also far from fool-proof. The source for this employment data is the U.S. Bureau of Labor Statistics website, www.bls.gov [downloaded October 10, 2010].

^{xiv}If one is committed to matching, we would be much more persuaded by a matching strategy that finds the counterfactual using traditional matching strategies based on 'economic distance' from the winner using all U.S. counties in the sample, or counties in the winner's geographical region. This would help purge endogeneity such as the possibility that 'losers' are inherently different because of their willingness to offer large tax incentives.

^{xv}Specifically, for each individual year between 2005 and 2009, we regressed annual employment growth in the year of announcement on the per-capita million dollar facilities. We then regressed annual employment growth in the year *after* announcement on per-capita million-dollar facilities. Finally, we repeated this by focusing on million-dollar manufacturing facilities in isolation, all with the same outcome of no statistically significant relationship. Note that *Site Selection Magazine* includes a facility in this database if there is either a US\$1 million or more in building costs or lease costs per year and either create 50 or more new jobs or involve 20,000 square feet (1,860 sq. m.) or more of new space. They added the \$1million *lease* threshold in their 2008 data.

^{xvi}Another related craze (fad?) in economic development is the so-called "public-private partnerships." They can span a wide range of initiatives from research collaborations between business and education to redevelopment of neighborhoods. Thus, they are hard to uniformly label as "good" or "bad." Yet, we worry that such initiatives too often appear to be a relabeling to draw attention away from the use of government subsidies and tax abatements, while much of the project's risk is borne by the public and the profits go to favored private interests. In this case, many of the criticisms of tax incentives apply.

References

- Ali, Kamar, M. Rose Olfert and Mark D. Partridge. 2011. Urban Footprints in Rural Canada: Employment Spillovers by City Size. *Regional Studies* 45(2): 239-260.
- Allen, William. 1931. Our Farm Problems—And Some Possible Solutions. *Scientific Agriculture* 16(7): 397-410.
- Andersson, Roland, John M. Quigley and Mats Wilhelmson. 2004. University Decentralization as Regional Policy: The Swedish Experiment. *Journal of Economic Geography* 4(4): 371-88.
- Anderson, Anne Kaag. 2002. Are Commuting Areas Relevant for the Delimitation of Administrative Regions in Denmark? *Regional Studies* 38(8): 833-44.
- Andrew, Simon A. and Richard C. Feiock. 2010. Core-Peripheral Structure and Regional Governance: Implications of Paul Krugman's New Economic Geography for Public Administration. *Public Administration Review* 70(3): 494-99.
- Angrist, Joshua D. and Jorn-Steffen Pischke. 2009. *Mostly Harmless Economics: An Empiricist's Companion*. Princeton, NJ: Princeton University Press.
- Autor, David H., Frank Levy, and Richard J. Murnane. 2003. The Skill Content of Recent Technological Change: An Empirical Exploration. *Quarterly Journal of Economics* 118(4): 1279–1333.
- Baldwin, R.E. and F. Robert-Nicoud. 2007. Entry and Asymmetric Lobbying: Why Governments Pick Losers. *Journal of the European Economic Association* 5: 1064-1093.
- Barkley, David L. 1995. How Functional Are Economic Areas? Tests for Intra-regional Spatial Association Using Spatial Data Analysis. *Papers in Regional Science* 74(4): 297-316.
- Bartik, Timothy. 1991. *Who Benefits From State and Local Economic Development Policy?* Kalamazoo, MI: W. E. Upjohn Institute for Employment Research Press.
- Bartik, Timothy. 2011. *Investing in Kids: Early Childhood Programs and Local Economic Development*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research Press.
- Berman, Eli, John Bound, and Zvi Griliches. 1994. Changes in the Demand for Skilled Labor within U.S. Manufacturing Industries. *Quarterly Journal of Economics* 109(2): 367–98.
- Bondonio, Daniele and Robert T. Greenbaum. 2007. Do Local Tax Incentives Affect Economic Growth? What Mean Impacts Miss in the Analysis of Enterprise Zone Policies? *Regional Science and Urban Economics* 37: 121-136.
- Burstein, Melvin L. and Arthur J. Rolnick. 1994. Congress Should End the Economic War Among the States. *Federal Reserve Bank of Minneapolis Annual Report*. Available at:

http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=672 (accessed September 23, 2010).

Cairncross, Frances. 1995. The Death of Distance. *The Economist*, September 30, 5-6.

_____. 1997. *The Death of Distance: How the Communications Revolution Will Change Our Lives*. Cambridge, MA: Harvard Business School Press.

Christaller, Walter. 1933. *Central Places in Southern Germany*. Translated from Die Zentralen Orte in Süddeutschland by C.W. Baskin. Englewood Cliffs, N.J: Prentice Hall..

Comunian, Roberta, Alessandra Faggian and Qian Cher Li. 2010. Unrewarded Careers in the Creative Class: The Strange Case of Bohemian Graduates. *Papers in Regional Science* 89: 389-410.

Davis, Donald R. and David E. Weinstein. 2002. Bones, Bombs, and Break Points: The Geography of Economic Activity. *American Economic Review* 92: 1269-1289.

Deller, Steven C. Forthcoming. Spatial Heterogeneity in the Role of Microenterprises in Economic Growth. *Review of Regional Studies*.

Deller, Steven C., and James McConnon. 2009. Microenterprises and Economic Growth, A Panel Study of the US States 1977 to 1997. *Applied Economic Letters* 16: 1307-1312.

Desmet, Klaus, and Marcel Fafchamps. 2005. Changes in the Spatial Concentration of Employment across US Counties: A Sectoral Analysis 1972-2000. *Journal of Economic Geography* 5(3): 261-84.

Dimitri, Carolyn, Anne Effland, and Neilson Conklin. 2005. *The 20th Century Transformation of U.S. Agriculture and Farm Policy*. USDA, ERS, Economic Information Bulletin No. 3. Available at <http://www.ers.usda.gov/publications/EIB3/eib3.pdf>. Accessed Nov. 1, 2010.

Drabenstott, Mark. 2003. A New Era for Rural Policy. *Federal Reserve Bank of Kansas City Economic Review* 88(4): 81-98.

Drabenstott, Mark, Nancy Novack and Stephan Weiler. 2004. New Governance for a New Rural Economy: Reinventing Public and Private Institutions--A Conference Summary. *Federal Reserve Bank of Kansas City Economic Review* 89(4): 55-70.

Drabenstott, Mark. 2008. An Effective Overhaul of Federal Economic Development Policy: Response to Markusen and Glasmeier. *Economic Development Quarterly* 22(2): 92-98.

Duranton, Gilles, Philippe Martin, Thierry Mayer, and Florian Mayneris. (2010). *The Economics of Clusters: Lessons from the French experience*. Oxford: Oxford University Press.

Edmiston, Kelly D. 2004. The Net Effects of Large Plant Locations and Expansions of County Employment. *Journal of Regional Science* 44: 289-319.

- Eliasson, Kent, Urban Lindgren and Olle Westerlund. 2003. Geographical Labour Mobility: Migration or Commuting? *Regional Studies* 37(8): 827-37.
- Faggian, Alessandra and Philip McCann. 2009a. Human Capital, Graduate Migration and Innovation in British Regions. *Cambridge Journal of Economics* 33: 317-333.
- Faggian, Alessandra and Philip McCann. 2009b. Universities, Agglomerations and Graduate Human Capital Mobility. *Journal of Economic and Social Geography* (TESG) 100: 210-223.
- Feser, Edward, Henry Renski and Harvey Goldstein. 2008. Clusters and Economic Development Outcomes: An Analysis of the Link Between Clustering and Industry Growth. *Economic Development Quarterly* 22: 324-344.
- Fleming, David and Stephan J. Goetz. Forthcoming. "Does Local Firm Ownership Matter?" *Economic Development Quarterly*.
- Florida, Richard. 2002. *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. New York: Basic.
- Florida, Richard, Charlotta Mellander and Kevin Stolarick. 2008. Inside the Black Box of Regional Development—Human Capital, the Creative Class and Tolerance. *Journal of Economic Geography* 8: 615-649.
- Fox, Karl and Krishna Kumar. 1965. The Functional Economic Area: Delineation and Implications for Economic Analysis and Policy. *Papers of the Regional Science Association* 15: 57-84.
- Friedman, Thomas L. 2005. *The World is Flat: A Brief History of the 21st Century*. New York: Farrar, Straus, and Giroux.
- Gabe, Todd M. and David S. Kraybill. 2002. The Effects of State Economic Development Incentives on Employment Growth of Establishments. *Journal of Regional Science* 42(4): 703–30.
- Glaeser, Edward L. 2005. Review of Richard Florida's *The Rise of the Creative Class*. *Regional Science and Urban Economics* 35(5): 593-596.
- Glaeser, Edward L. and Joshua D. Gottlieb. 2008. The Economics of Place-Making Policies. *Brookings Papers on Economic Activity*. Spring 2008, pp. 155-254.
- Glaeser, Edward L., Heidi Kallal, José A. Scheinkman, and Andrei Schleifer. 1992. Growth in Cities. *Journal of Political Economy* 100: 1126-1152.
- Glaeser, Edward L., José A. Scheinkman, and Andrei Shleifer. 1995. Economic Growth in a Cross-Section of Cities. *Journal of Monetary Economics* 36: 117-43.

Glaeser, Edward L. and Janet E. Kohlhase. 2004. Cities, Regions and the Decline of Transport Costs. *Papers in Regional Science* 83(1): 197-228.

Goetz, Stephan J., Yicheol Han, Jill L. Findeis and Kathryn J. Brasier. 2010a. U.S. Commuting Networks and Economic Growth: Measurement and Implications for Spatial Policy. *Growth and Change* 41(2): 276-302.

Goetz, Stephan, Mark D. Partridge, Dan S. Rickman, and Shibalee Mujumdar. Forthcoming. Sharing the Gains of Local Economic Growth: Race to the Top vs. Race to the Bottom Economic Development. *Environment & Planning C*.

Goldstein, Harvey A. and Charlotte S. Renault. 2004. Contributions of Universities to Regional Economic Development: A Quasi-experimental Approach. *Regional Studies* 38: 733-746.

Gordan, Ian R. and Philip McCann. 2000. Industrial Clusters: Complexes, Agglomeration and/or Social Networks. *Urban Studies* 37: 513-532.

Grassmueck, Georg, Stephan Goetz, and Martin Shields. 2008. Youth Out-Migration from Pennsylvania: The Roles of Government Fragmentation vs. the Beaten Path Effect. *Journal of Regional Analysis and Policy* 38(1): 77-88.

Graves, Philip E. 1976. A Reexamination of Migration, Economic Opportunity and the Quality of Life. *Journal of Regional Science* 16: 107-112.

Greenstone, Michael, Rick Hornbeck, and Enrico Moretti. 2010. Identifying Agglomeration Spillovers: Evidence from Million Dollar Plants. *Journal of Political Economy* 118: 536-598.

Greenstone, Michael and Enrico Moretti. 2004. Bidding for Industrial Plants: Does Winning a 'Million Dollar Plant' Increase Welfare? NBER Working Paper #9844.

Hammond, George W. and Mehmet S. Tosun. (2011). The Impact of Local Decentralization on Economic Growth: Evidence from U.S. Counties. *Journal of Regional Science* 51: 47-64.

Hansen, Hogni Kalso and Thomas Niedomsyl. 2009. Migration of the Creative Class: Evidence from Sweden. *Journal of Economic Geography* 9(2): 191-206.

Holmes, Thomas. 1995. The Effects of Tax Discrimination When Local Governments Compete for a Tax Base. Research Department Working Paper 544, Federal Reserve Bank of Minneapolis.

Johnson, Thomas G. 2007. Place-Based Economic Policy: Innovation or Fad? *Agricultural and Resource Economics Review* 36: 1-8.

Kilkenny, Maureen and Mark D. Partridge. 2009. Export Sectors and Rural Development. *American Journal of Agricultural Economics* 91: 910-929.

- Krugman, Paul. 1991. Increasing Returns and Economic Geography. *Journal of Political Economy* 99: 483-499.
- Leamer, Edward E. 2007. A Flat World, a Level Playing Field, a Small World after All, or None of the Above? A Review of Thomas L. Friedman's *The World is Flat*. *Journal of Economic Literature* 45(1): 83-126.
- Lee, Yoonsoon. 2008. Geographic Redistribution of US Manufacturing and the Role of State Development Policy. *Journal of Urban Economics* 64: 436-450.
- Lynch, Robert G. 2010. The Impact of State Tax Policy on Economic Growth. Presentation Made Before the Maryland Business Tax reform Commission Business Incentives in the Tax Code Subcommittee. Available at: http://btrc.maryland.gov/articles/documents/Impact_of_State_Tax_Policy.pdf. Accessed on February 20, 2011.
- Lösch, August. 1954. *The Economics of Location*. (New Haven, Conn.: Yale University Press, translated from *Die räumliche Ordnung der Wirtschaft* (Jena: Gustav Fischer, 1940; 2nd ed., 1944), by W. H. Woglom.
- Loveridge, Scott and Denys Nizalov. 2007. Operationalizing the Entrepreneurial Pipeline Theory: An Empirical Assessment of the Optimal Size Distribution of Local Firms. *Economic Development Quarterly* 21: 244-262.
- Malkiel, Burton G. 2003. *Random Walk Down Wall Street*. New York: W. W. Norton & Company.
- Martin, Ron and Peter Sunley. 2003. Deconstructing Clusters: Chaotic Concept or Policy Panacea? *Journal of Economic Geography* 3: 5-35.
- McCann, Philip, 2007. Sketching Out a Model of Innovation, Face-to-face Interaction and Economic Geography. *Spatial Economic Analysis* 2(2), 117-34.
- McGranahan, David and Timothy Wojan. 2007. Recasting the Creative Class to Examine Growth Processes in Rural and Urban Counties. *Regional Studies* 41(2): 197-216.
- Miller, Jon R. 1998. Spatial Aggregation and Forecast Accuracy in a Functional Economic Area and Its Component Counties. *Journal of Regional Analysis and Policy* 28(1): 49-59.
- Muro, Mark. 2004. *Details Will Determine If Mergers Help*. Brookings Institute Metropolitan Policy Program. Available at: http://www.brookings.edu/opinions/2004/1212metropolitanpolicy_muro.aspx, downloaded February 20, 2010.
- Moretti, Enrico. 2004. Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-sectional Data. *Journal of Econometrics* 121: 175-212.
- Nathan, Max. 2007. The Wrong Stuff? Creative Class Theory and Economic Performance in UK

Cities. *Canadian Journal of Regional Science* 30(3): 433-50.

New York Times. 2008. In Search of a Real Urban Policy. Editorial, February 19, 2008, <http://www.nytimes.com/2008/02/19/opinion/19tue1.html>. Accessed on February 21, 2011.

Olfert, M. Rose and Mark D. Partridge. 2011. Creating the Cultural Community: Ethnic Diversity vs. Agglomeration. *Spatial Economic Analysis* 6(1): 25-55

Orfield, Myron. 1997. *Metro Politics: A Regional Agenda for Community Stability*. Washington, DC: Brookings Institution Press.

Partridge, Mark D. 2010. The Dueling Models: NEG vs Amenity Migration in Explaining U.S. Engines of Growth. *Papers in Regional Science* 89: 513-536.

Partridge, Mark D. and M. Rose Olfert, 2009. North American Rural-Urban Evolution and Government Policy Response. In *Globalization and the Rural-Urban Divide* ed. M. Gopinath and H. Kim, pp. 169-210. Seoul: Seoul National University Press.

Partridge, Mark D. and Dan S. Rickman. 1995. Differences in State Unemployment Rates: The Role of Labor and Product Market Structural Shifts. *Southern Economic Journal* 62: 89-106.

Partridge, Mark D., Ray Bollman, M. Rose Olfert, and Alessandro Alasia. 2007. Riding the Wave of Urban Growth in the Countryside: Spread, Backwash, or Stagnation. *Land Economics* 83: 128-152.

Partridge, Mark D., Dan S. Rickman, Kamar Ali and M. Rose Olfert. 2008. Employment Growth in the American Urban Hierarchy: Long Live Distance. *Berkeley Journal of Macroeconomics—Contributions*. 8 (1).

Peters, Alan H. and Peter S. Fisher. 2002. *State Enterprise Zone Programs: Have They Worked?* Kalamazoo, MI: W. E. Upjohn Institute for Employment Research Press.

Polèse, Mario and Richard Shearmur. 2006. Why Some Regions Will Decline: A Canadian Case Study with Thoughts on Local Development Strategies. *Papers in Regional Science* (45): 23-46.

Poppert, Patrick E. and H. W. Herzog Jr. 2003. Force Reduction, Base Closure, and the Indirect Effects of Military Installations on Local Employment Growth. *Journal of Regional Science* (43): 459-481.

Porter, Michael. 1998. *On Competition*. Cambridge, MA: Harvard Business School Press.

Puga, Diego. 2010. The Magnitude and Causes of Agglomeration Economies. *Journal of Regional Science* 50: 203-220.

Rahman, Sarah. 2010. SBA Gets Into the Clusters Business. *New Republic*. July 14. Online at: <http://www.tnr.com/blog/the-avenue/76265/sba-gets-the-clusters-business>. Accessed October 6, 2010.

- Rappaport, Jordan. 2007. Moving to Nice Weather. *Regional Science and Urban Economics* 37: 375-398.
- Renkow, Mitch and Dale Hoover. 2000. Commuting, Migration, and Rural-Urban Population Dynamics. *Journal of Regional Science* 40(2): 261-87.
- Roback, Jennifer. 1982. Wages, Rents, and the Quality of Life. *Journal of Political Economy* 90: 1257-128.
- Rodríguez-Pose, Andrés. 2008. The Rise of the “City-region” Concept and its Development Policy Implications. *European Planning Studies* 16: 1025-1046.
- Rodriguez-Pose, Andrés and Riccardo Crescenzi. 2008. Research and Development, Spillovers, Innovation Systems, and the Genesis of Regional Growth in Europe. *Regional Studies* 42: 51-67.
- Rosentraub, Mark S. 2000. City-County Consolidation and the Rebuilding of Image: The Fiscal Lessons from Indianapolis’s UniGov Program. *State and Local Government Review* 32: 180–91.
- Rouwendal, Jan. 1999. Spatial Job Search and Commuting Distances. *Regional Science and Urban Economics* 29: 491-517.
- Schweke, B.. 2009. *Business Incentives Reform*. Washington: The Corporation for Enterprise Development.
- Simon, Curtis J.. 1998. Human Capita and Metropolitan Employment Growth. *Journal of Urban Economics* 43: 223-243.
- Simon, Curtis J. and Clark Nardinelli. 2002. Human Capital and the Rise of American Cities, 1900-1999. *Regional Science and Urban Economics* 32: 59-96.
- Sinai, Todd and Joel Waldfogel. 2004. Geography and the Internet: Is the Internet a Substitute or a Complement for Cities? *Journal of Urban Economics* 56: 1-24.
- Stabler, Jack C. and M. Rose Olfert. 2002. *Saskatchewan's Communities in the 21st Century: from Places to Regions*. Regina, SK: Canadian Plains Research Centre, University of Regina.
- Storper, Michael and Michael Manville. 2006. Behavior, Preferences and Cities: Urban Theory and Urban Resurgence. *Urban Studies* 43: 1247-1274.
- Thisse, Jacques-François. 2010. Toward a Unified Theory of Economic Geography and Urban Economics. *Journal of Regional Science* 50: 281-296.
- U.S. Census Bureau. 2010. Statistics of U.S. Businesses, Definitions. Accessed at: <http://www.census.gov/econ/subs/definitions.html> on December 3, 2010.
- USDA, ERS. 2010. Farm Household Income Briefing Room. Available at:

<http://www.ers.usda.gov/briefing/wellbeing/farmhouseincome.htm>. Accessed November 1, 2010.

van Oort, Frank, Martijn Burger and Otto Raspe. 2010. On the Economic Foundation of the Urban Network Paradigm: Spatial Integration, Functional Integration and Economic Complementarities within the Dutch Randstad. *Urban Studies* 47(4): 725–748.

World Bank. 2009. *World Development Report: Reshaping Economic Geography*. Washington, DC: The World Bank.

Xiao, Yu. Forthcoming. Economic Impacts of Natural Disasters and Trajectories of Adjustment. *Journal of Regional Science*.

Yankow, Jeffrey J. 2003. Migration, Job Change, and Wage Growth: A New Perspective on the Pecuniary Return to Geographic Mobility. *Journal of Regional Science* 43: 483-516.

Table 1. Trade centre hierarchy evolution, Saskatchewan, Canada, 1961-2001

	1961	1981	1991	1995	2001
Primary Wholesale-Retail	2	2	2	2	2
Secondary Wholesale-Retail	8	8	8	8	8
Complete Shopping Center	29	22	6	7	8
Partial Shopping Center	99	30	46	22	6
Full Convenience Center	189	136	117	59	72
Minimum Convenience Center	271	400	419	500	502
Total	598	598	598	598	598

Source: Stabler, Jack C. and M. Rose Olfert. 2002. *Saskatchewan's Communities in the 21st Century: from Places to Regions*. Regina, SK: Canadian Plains Research Centre, University of Regina.

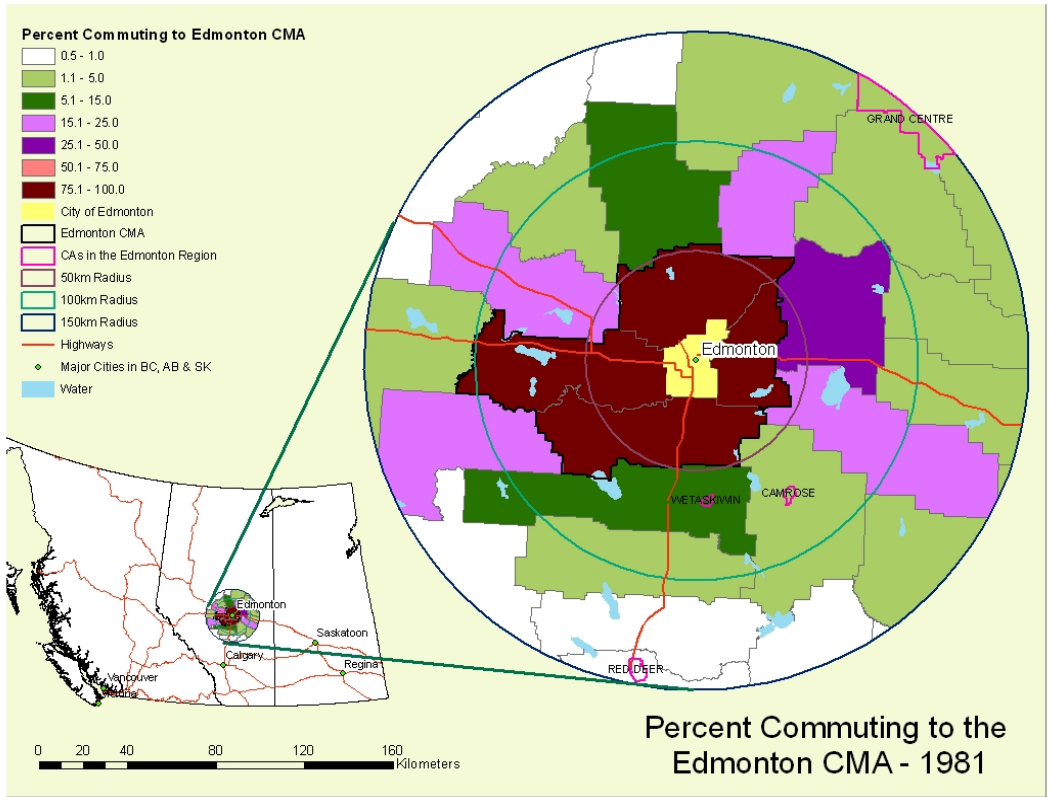
Table 2. MSA evolution, 1950-2009, Atlanta, Columbus, Des Moines and Minneapolis-St. Paul

	Group 1: MSA in 1950	Group 2: Counties added 1950-73	Group 3: Counties added 1974-2003	Total MSA in 2003
Panel a: Population Size and Shares				
Atlanta: # of counties	3	12	13	28
1950 Population	671,797	192,665	214,862	1,079,324
% of 1950 pop., 2003 MSA boundary	62.24%	17.85%	19.91%	100.00%
% of 2009 pop., 2003 MSA boundary	45.58%	42.71%	11.71%	100.00%
2009 Population	2,495,722	2,338,275	641,216	5,475,213
Columbus: # of counties	1	4	3	8
1950 Population	503,410	134,060	108,500	745,970
% of 1950 pop., 2003 MSA boundary	67.48%	17.97%	14.54%	100.00%
% of 2009 pop., 2003 MSA boundary	63.83%	22.74%	13.43%	100.00%
2009 Population	1,150,122	409,693	242,033	1,801,848
Des Moines: # of counties	1	1	3	5
1950 Population	226,010	17,758	51,898	295,757
% of 1950 pop., 2003 MSA boundary	76.42%	6.00%	17.58%	100.00%
% of 2009 pop., 2003 MSA boundary	76.29%	8.04%	15.67%	100.00%
2009 Population	429,439	45,275	88,192	562,906
Minneapolis-St. Paul: # of counties	4	5	4	13
1950 Population	1,116,509	118,989	60,718	1,296,216
% of 1950 pop., 2003 MSA boundary	84.14%	9.18%	4.68%	100.00%
% of 2009 pop., 2003 MSA boundary	73.11%	17.74%	9.15%	100.00%
2009 Population	2,390,572	579,948	299,294	3,269,814
Panel b: Population Density				
Atlanta: No. of Sq. Miles	1,150mi. ²	3,233mi. ²	4,097mi. ²	8,480mi. ²
1950 Population Density	584.16	59.60	52.44	127.27
2009 Population Density	2,170.14	723.30	156.49	645.64
Columbus: No. Sq. Miles	543mi. ²	1,938mi. ²	1,533mi. ²	4,014mi. ²
1950 Population Density	926.54	69.19	70.79	185.86
2009 Population Density	2,116.84	211.45	157.91	448.94
Des Moines: No. Sq. Miles	592mi. ²	573mi. ²	1,747mi. ²	2,912mi. ²
1950 Population Density	381.84	30.98	29.76	101.56
2009 Population Density	725.53	78.99	50.48	193.29
Minneapolis-St. Paul: No. Sq. Miles	1,809mi. ²	2,692mi. ²	1,863mi. ²	6,364mi. ²
1950 Population Density	617.16	44.20	32.59	203.68
2009 Population Density	1,321.42	215.43	160.65	513.79
Panel c: Urbanization intensity				
Atlanta: 2000 %in urban areas	98.92%	83.16%	42.53%	86.16%
2000 %in nonfarm rural areas	1.06	16.63	56.12	13.59
2000 %on rural farms	0.02	0.22	1.34	0.25
Columbus: 2000 %in urban areas	98.16%	61.16%	49.51%	84.11%
2000 %in nonfarm rural areas	1.78	36.75	47.40	15.01
2000 %on rural farms	0.06	2.08	3.09	0.88
Des Moines: 2000 %in urban areas	94.20%	58.55%	39.83%	83.72%
2000 %in nonfarm rural areas	5.35	36.39	52.75	14.49
2000 %on rural farms	0.45	5.06	7.42	1.80
Minneapolis-St. Paul: 2000 %in urban areas	96.01%	65.04%	52.08%	87.87%
2000 %in nonfarm rural areas	3.84	32.66	44.78	11.43
2000 %on rural farms	0.14	2.29	3.14	0.70

Sources: Population: U.S. Census Bureau. 1950, 1980 Census Counts, 2000, 2009 Population estimates. Area: 1950, 1980 U.S. Census Bureau. Census Counts; 2000, 2009 U.S. Census Bureau. Population Estimates. Area: U.S. Census Bureau, Fact finder,

Basic Counts/Population. Urban/rural: U.S. Census Bureau, Fact finder, Detailed tables/Geography.

Figure 1. Commuting rates around Edmonton, Alberta in Canada, 1981 and 2001



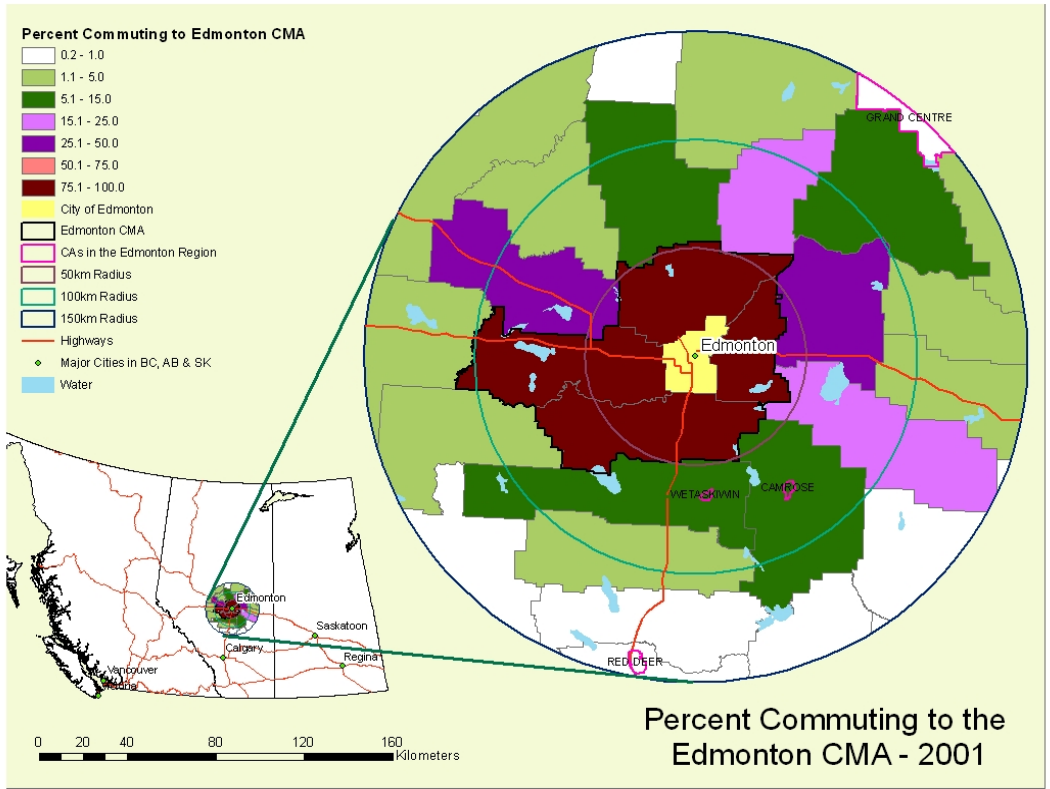
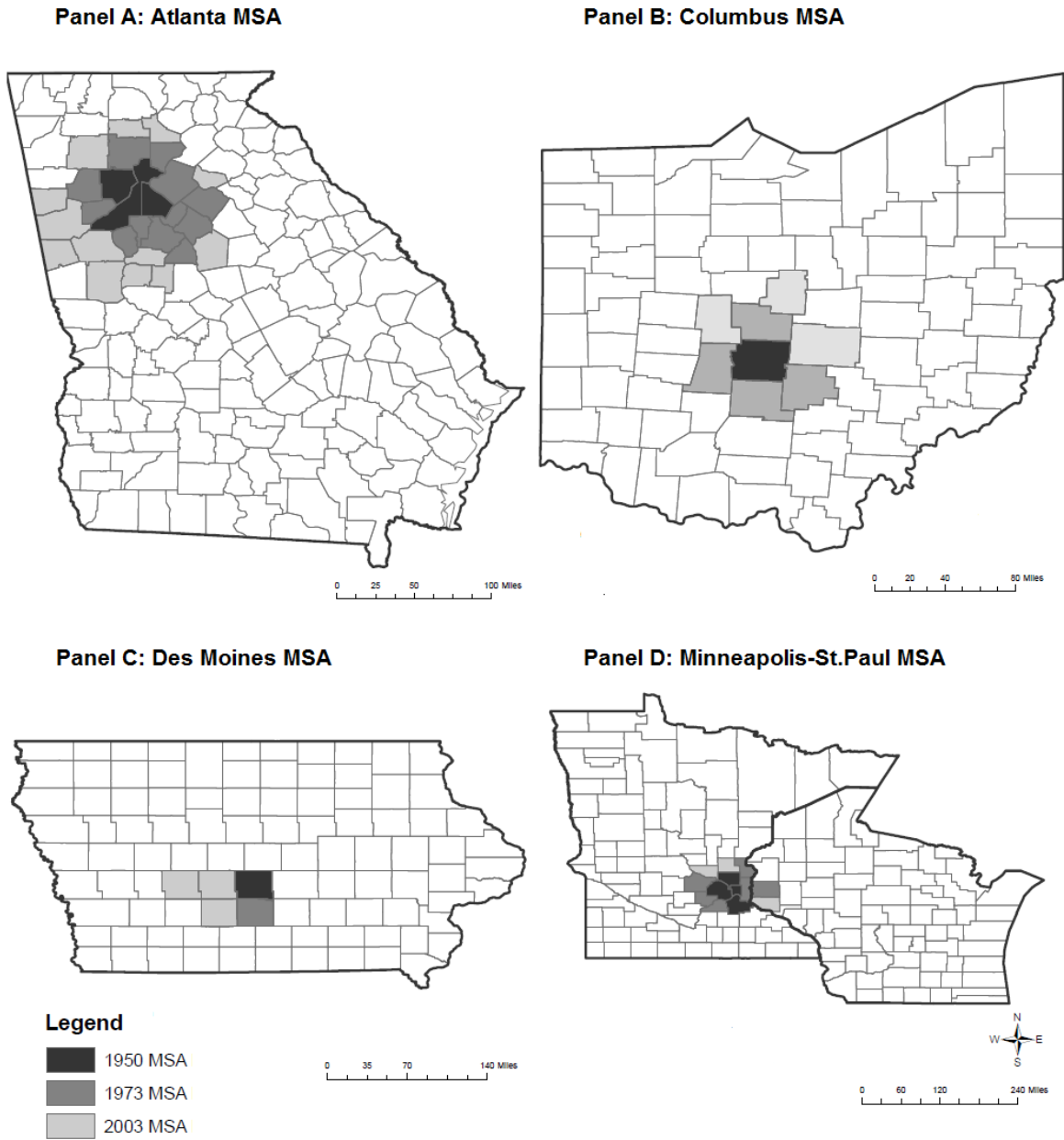
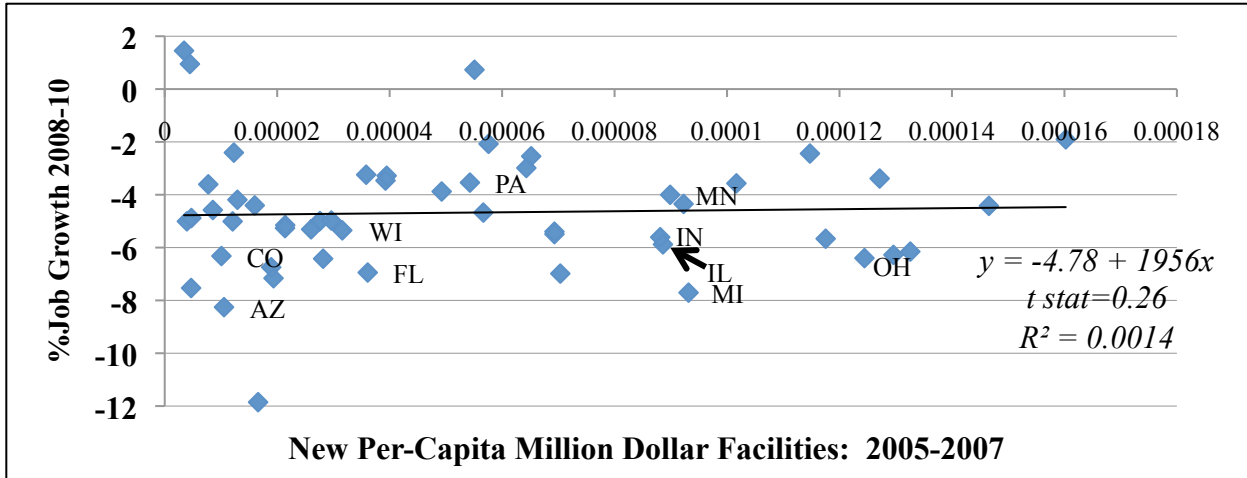


Figure 2. The evolving Metropolitan Statistical Areas 1950-2003

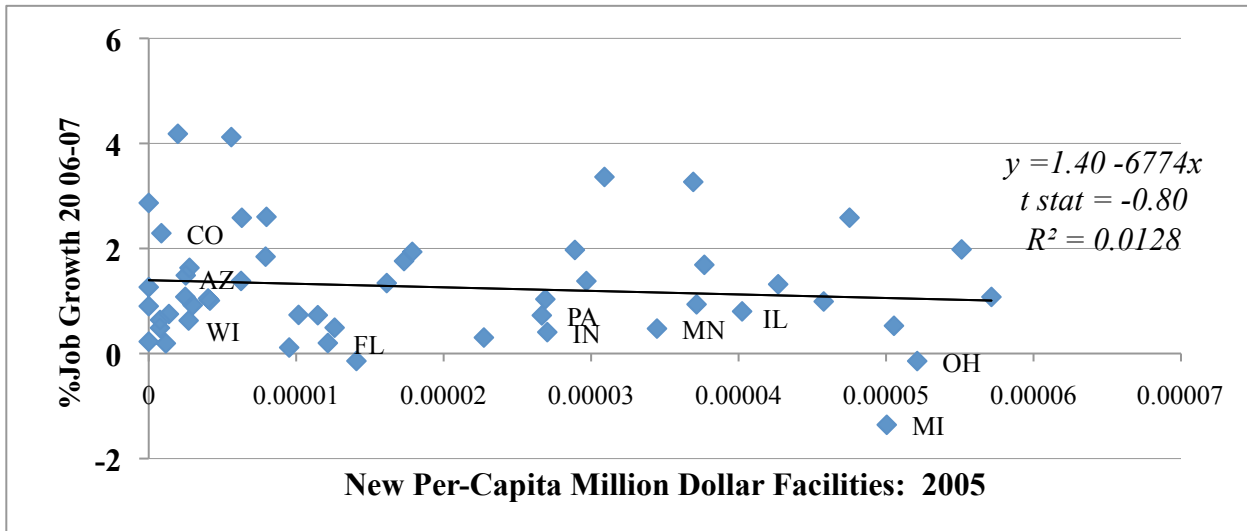


Source: U.S. Census Bureau.

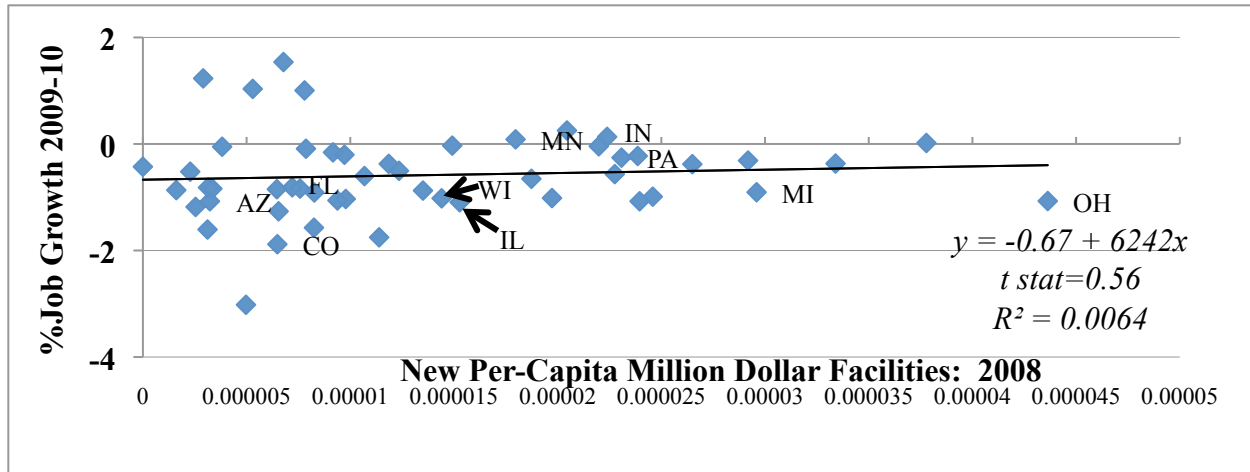
Figure 3. State Employment Growth on Announced Per-Capita Million Dollar Facilities
 Panel a. 2008-2010 Employment Growth



Panel b. 2006-2007 Employment Growth



Panel c. 2009-2010 Employment Growth



Notes: The number of facilities is from various March issues of *Site Selection Magazine*, www.siteselection.com. State population data is from the U.S. Census Bureau, www.census.com, and employment data is from the U.S. Bureau of Labor Statistics, www.bls.gov. All data was downloaded on February 22, 2011.