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We're Right, They're Wrong, Regional Science Is Where It's At

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Abstract

Regional science is highly relevant in assessing issues that tangibly impact our lives. Conversely, economics is so fixated on mathematical rigor that it does not have the impact on policy that it should. Similar constructive criticisms apply to geography. To illustrate how regional scientists are more “grounded,” three examples show how their analysis can defeat popular misconceptions held by the media: (1) the role of energy resources in explaining Alberta’s long run growth; (2) how the largest U.S. cities are not growing increasingly more dominant; and (3) how considering American high poverty clusters can help inform international poverty research.

Keywords: Cities; Poverty; Regional growth; Regional Science

JEL classification: R32; R23; R11

I have benefited from discussions with Josefin Kihlberg, Rose Olfert, Jamie Partridge, Mike St. Louis, and frequent co-author Dan Rickman.

The title of my talk is “We’re Right, They’re Wrong, Regional Science Is Where It’s At.” The impetus for this talk is my growing bewilderment with some of the core disciplines that compose regional science. Take my discipline — economics. The economics profession continues its quarter-century trend of being more enamoured by mathematical technique rather than social or policy relevance. My impressions of recent discourse in geography are the opposite in that there is a deconstructionist movement that seemingly opposes rigor or analytics. Yet, in regional science, we continue our workhorse approach by deriving models and conducting empirical studies that are not only practical, but firmly grounded in broader socioeconomic relevance. If it doesn’t affect people, regional scientists are simply not interested.

Yet, as a discipline, we always seem to be questioning our relevance. Perhaps self evaluation is healthy, but regional conference agendas and speeches often ask something akin to whither regional science or worse, where did regional science go wrong? I am going to instead contend that we have it right, or at least closer to right, and it is the other disciplines that need to do some navel gazing.

My approach will use three simple examples from either popular wisdom or socio-economic research. I will then argue that regional science approaches would shed more light on the issue.

LESSON 1: REGIONS EXTEND ACROSS NATIONAL BOUNDARIES

Though regional scientists are keenly aware that spatial patterns and clusters extend across national borders, our wisdom doesn’t always extend to policy wonks, the media, or the public. Take an example from Canada. The map (Figure 1) shows a Statistics Canada map of persistent patterns of population growth over the 1981-2001 period. Darker shades of green indicate steady population gains, while darker shades of red denote persistent population losses. Two large swaths of red stand out in Atlantic Canada and the prairies. Two large swaths of green growth stand out in lower Ontario, surrounding Toronto, and in — most importantly for today — Alberta.

Looking east to west across Canada, the rapid population growth in Alberta has captured the attention of many Canadian observers. They routinely argue that Alberta’s growth is simply explained by its natural resource wealth — especially oil. For example, David Crane (2003, p. C02), economics editor of the *Toronto Star*, summed up this view when he stated:

...the energy industry accounts, directly and indirectly for about one-half of the Alberta economy, and has been the principal source of Alberta’s prosperity over the past 40 years....

Echoing these sentiments, Wilf Gilbert, vice-chairman of Peters & Co Ltd., recently argued that “The [oil and gas] industry will continue to drive Alberta’s economy...” (Gignac 2005).

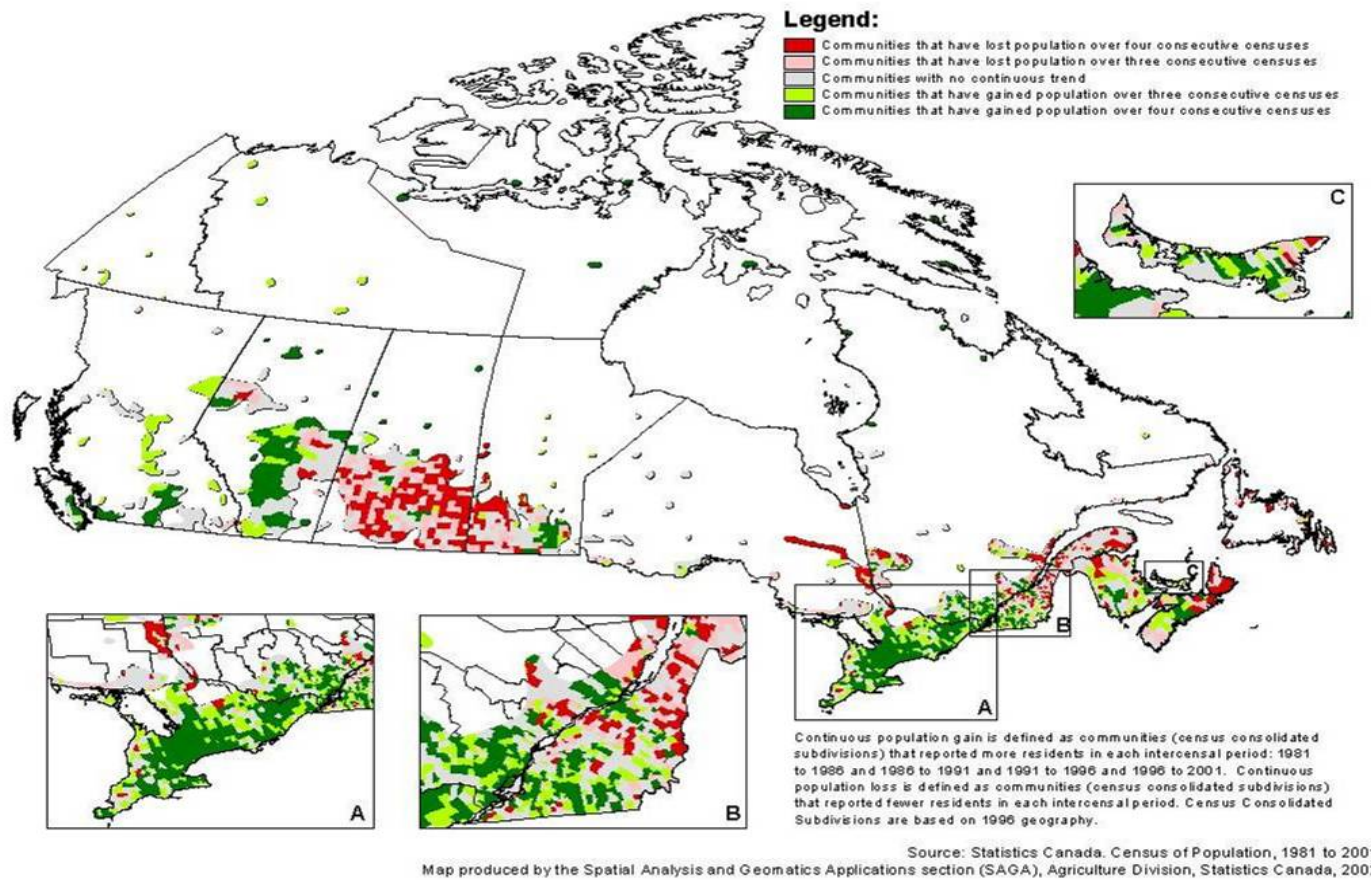


FIGURE 1. Canadian Community Population Gains and Losses Over Four Consecutive Censuses, 1981 to 2001

There are scores of examples in which statements like these go unchallenged. Indeed, such beliefs form the basis for expensive Canadian equalization payments where, in essence, Albertan taxes are used, in part, to fund lavish Equalization payments on so-called “have-not provinces.”¹ Alternative explanations for Alberta’s success such as its beautiful topography or its *relative laissez-faire* business climate (at least in a Canadian context) are ignored. Key explanations are not being considered in implementing better policy.

As a regional economist, the explanation that Alberta is simply living off its natural resources strikes me as incomplete or wrong. Even forgetting the point that Alberta’s population growth should have been depressed by the relatively low commodity prices that prevailed during the 1981-2001 period shown in the map, there are other problems with the conventional assessment. For one, development economists have fixated on the so-called “natural resources curse” in that energy-rich countries such as Nigeria or Venezuela have economically struggled despite their vast resource wealth.² Many explanations abound, including the co-existence of weak economic institutions, corruption, and Dutch disease.

One could argue that the natural resource curse applies to nations but not regions within developed countries. Well, that is a test regional scientists are well qualified to conduct. Figure 2 plots average 1981-2003 employment growth on the initial mining share for the lower 48 U.S. states. Note that 1981 was near the top of the resource sector economic cycle, while substituting 1986, which was the bottom of the cycle, would not alter the conclusion.³ That is, we see a statistically significant negative relationship between 1981 mining intensity and subsequent employment growth (at about the 6 percent level). So there is some evidence of a natural resource curse for the U.S. states – or at least we can’t argue that natural resources are an inherent advantage.

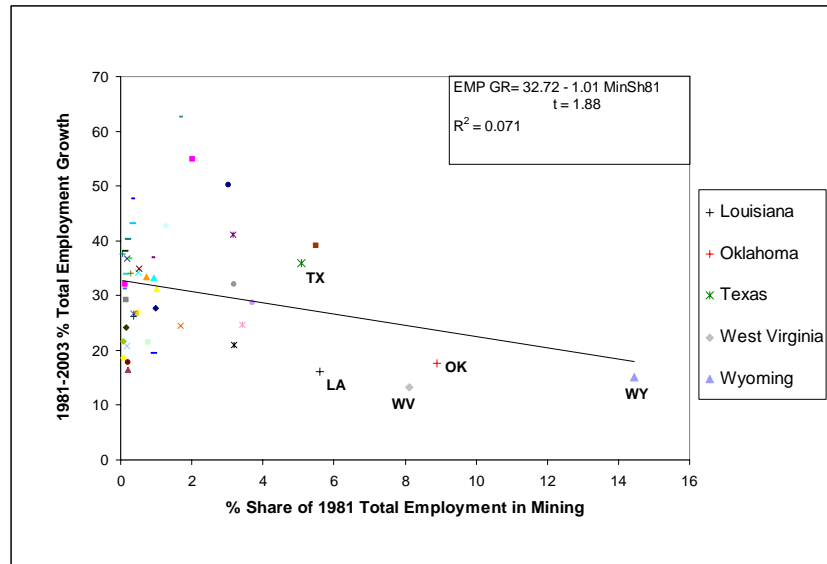
Of course, one could argue that Canada is somehow different. However, when I consider the 10 Canadian provinces in Figure 3, there clearly is no relationship between the initial non-agriculture primary sector share and subsequent employment growth. This applies to whether the trend includes Alberta or does not include Alberta.

Well then, what is the cause of Alberta’s growth? Figure 4 shows 1990s population growth for U.S. counties and Canadian census divisions. Now, darker shades of red

¹ For example, just for the sparsely populated province of Newfoundland and Labrador, the government of Canada recently awarded \$2.6 billion in additional equalization payments (Department of Finance Canada, “Government of Canada Reaches Offshore Agreement With Newfoundland and Labrador.” Accessed from www.fin.gc.ca/news05/2005-007e.html on March 3, 2005.

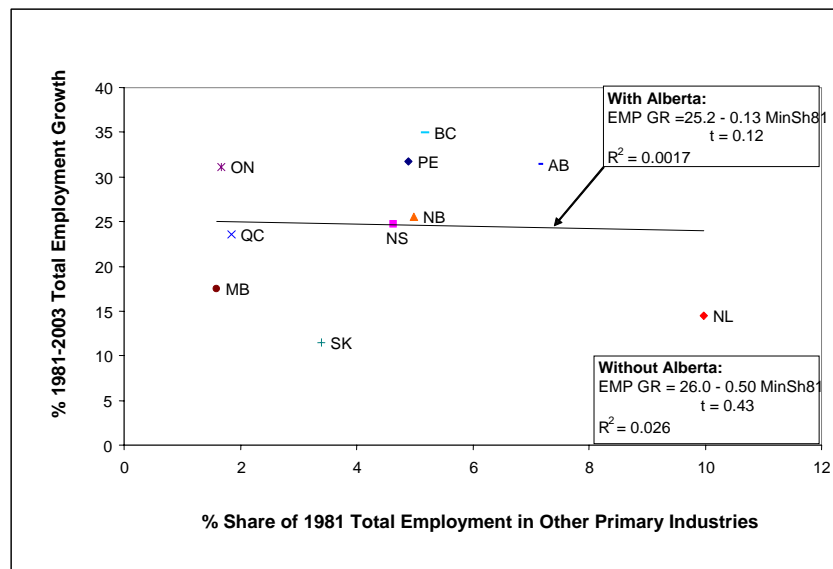
² For example, see Sala-i-Martin and Subramanian (2003), Neumayer (2004), and Papyrakis and Gerlagh (2004).

³ For example, in explaining 1986 to 2003 state employment growth, the 1986 mining share regression coefficient equaled -0.06 ($t = 0.08$). The 1986-2003 results for Canada are also consistent with the 1981-2003 findings described below.



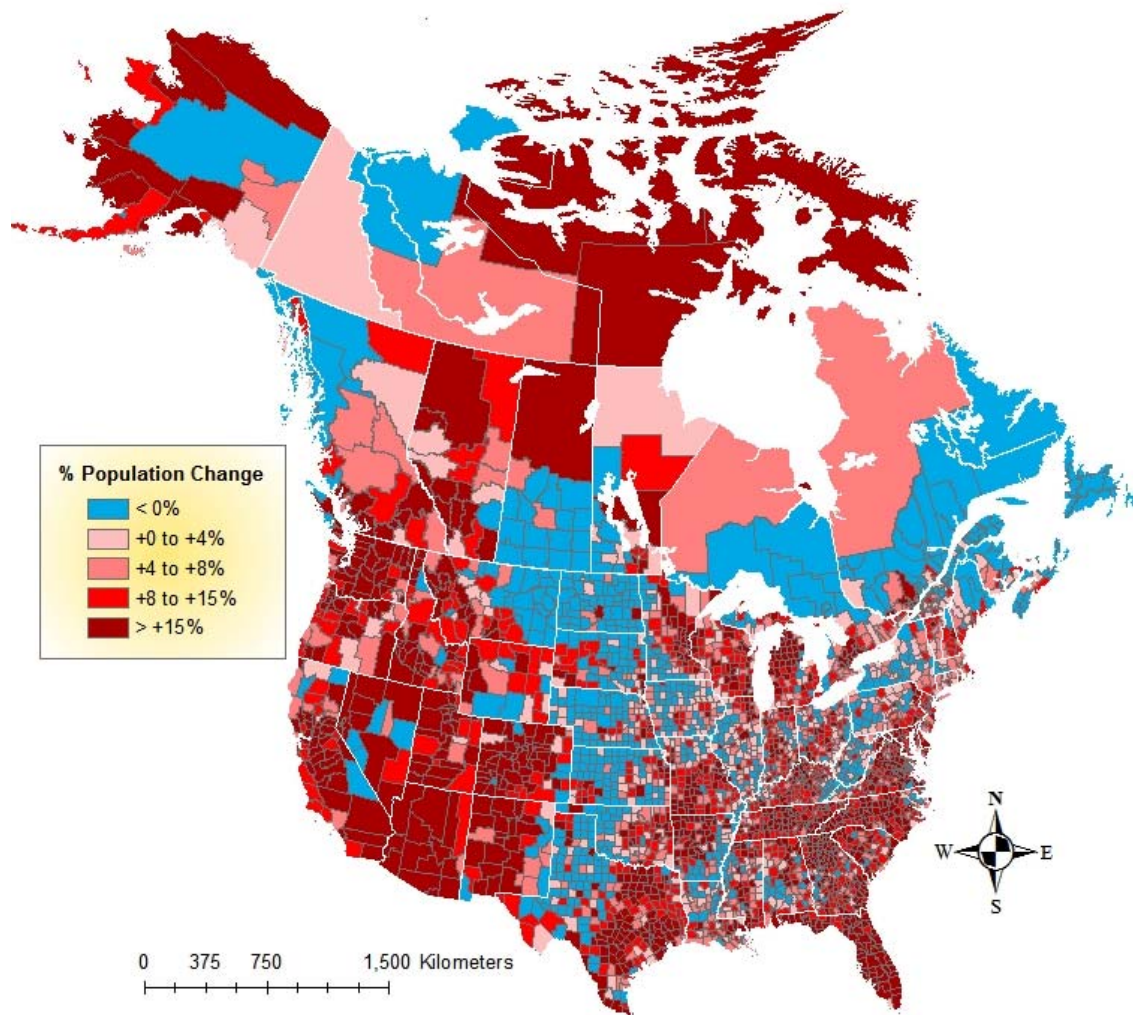
Source: Bureau of Economic Analysis, www.bea.doc.gov/bea/regional/spi/default.cfm.

FIGURE 2. 1981-2003 Total Employment Growth and Share of Total Employment in Mining 1981



Source: Before 1987; Labour Force Historical Review CDROM 2002 Table Cd1t05an. After and including 1987; Labour Force Historical Review CDROM 2003 Table Cd1t07an

FIGURE 3. 1981-2003 Total Employment Growth and Share of 1981 Total Employment in Other Primary Industries



Source: Canada Rural Economy Research Lab, 1991 & 2001 Census – Statistics Canada; 1990 & 2000 Census – U.S. Census Bureau.

Notes: The map shows 1990-2000 percent population change for U.S. counties using the U.S. Census of Population. The 1991-2001 percent population change for Canadian census divisions use Statistics Canada data and are based on 1996 consistent boundaries.

FIGURE 4. Population Change in North America During the 1990s

reflect faster growth, and blue denotes population loss. At least in the western part of North America, we do not see Canadian or U.S. patterns, we see North American patterns. One doesn't need Jim LeSage's spatial econometric toolkit to identify clusters that extend across borders.⁴ For example, we see broad population declines extending across the Great Plains to the Prairies. Down the Rocky Mountains, we see rapid population growth — from Alberta through Arizona. Regional scientists would obviously seek the common features that can explain these broad patterns. Well, one pattern is that most of the Rocky Mountain region is **not** known for energy production — i.e., energy should not be a candidate explanation the region's growth. But the Rocky Mountain region is known for its wonderful amenities and a general pro-business environment. If I were to start looking for explanations for Alberta's success, I would start there.

Four figures are not going to disentangle the jobs versus people debate. Yet they do suggest that the Canadian public and policymakers could be much better informed about the causes of economic growth if they used a regional approach rather than relying on simplistic notions. Better knowledge would allow them to implement policies that support growth instead of current policies that actually may slow growth and stem needed regional readjustments.

LESSON 2: REGIONAL RESEARCH SHOULD INFORM OTHER DISCIPLINES

Many regional economists get upset when we see well-known economists write a paper in a top journal in which the authors seemingly feel they discovered regional science. Far too often, the study repackages well-known patterns and trends from regional science and sells it as original. Perhaps instead of getting mad, we should get even.

Let's take the American poverty clusters as an example. Depending on the definition, USDA has defined high-poverty counties as those that have persistently had poverty exceeding 20 percent dating over the 1960 through the 2000 Census (though the actual beginning point does not make much difference).⁵ Figure 5 shows the high poverty counties in the lower 48 states over the 1979-1999 period. Clearly, these are not randomly distributed but represent a spatial phenomenon. It is apparent that high-poverty counties are clustered in various groups, such as in the historic Cotton Belt, Appalachia, along the Rio Grande, or on reservations in the northern Plains.

These poverty clusters are particularly interesting because they occur in one of the wealthiest countries in the world. Just like wealthy Manhattan or Beverly Hills, all of these poverty clusters are exposed to the same fiscal and monetary policies, same federal legal system and regulations, similar institutions, and they are all exposed to the same

⁴Jim LeSage's spatial econometric toolkit utilizing MatLab can be accessed at: www.spatial-econometrics.com/.

⁵For details of persistent-poverty county definitions and their attributes, see Miller and Weber (2004) and United States Department of Agriculture (2004).

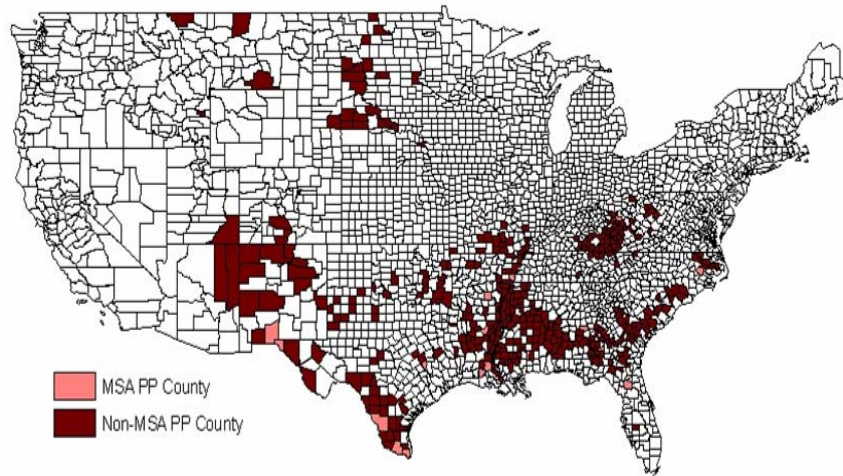


FIGURE 5. 1999 Persistent Poverty Counties: 1979-1999 Definition

American cultural mainstream. Simple racial explanations are also incomplete because each of these clusters possess considerably different racial compositions. Yet, there is something about the local institutions and governance of these clusters that have produced persistent failings.

While I have outlined a complex research question, it is certainly easier to identify the particular institutional shortcomings that arise when a researcher does not need to focus on overall national economic and regulatory policies, legal systems, or culture, let alone their interrelationships.

Turning to development economics, many developing countries have experienced abject poverty (Easterly 2001). Though their poverty is much more severe than that of the U.S., they too face severe institutional breakdowns that blunt social and economic incentives that could lift their population out of poverty. However, isolating the type of institutional breakdowns across countries is extremely challenging because they possess a myriad of economic policies, legal systems, and cultures, along with the resulting interrelationships.

Thus, it is sometimes impossible to isolate true causes of developing-country poverty versus simple correlations. It is often looking for the proverbial needle in a haystack.

In this case, it makes sense to isolate the types of institutional breakdowns from American poverty clusters and use these explanations to form a candidate list for more detailed examination at the international level. While the list of candidate institutions from American clusters may not entirely reflect systemic breakdowns for developing

countries, at least they tell us about the little parts of the haystack in which we should begin our search. Besides helping inform our understanding of poverty on an international scale, such comparisons would also give development specialists a better understanding of how institutions evolve in developing and advanced economies.

LESSON 3: SOMETIMES THINGS ARE NOT WHAT WE THINK

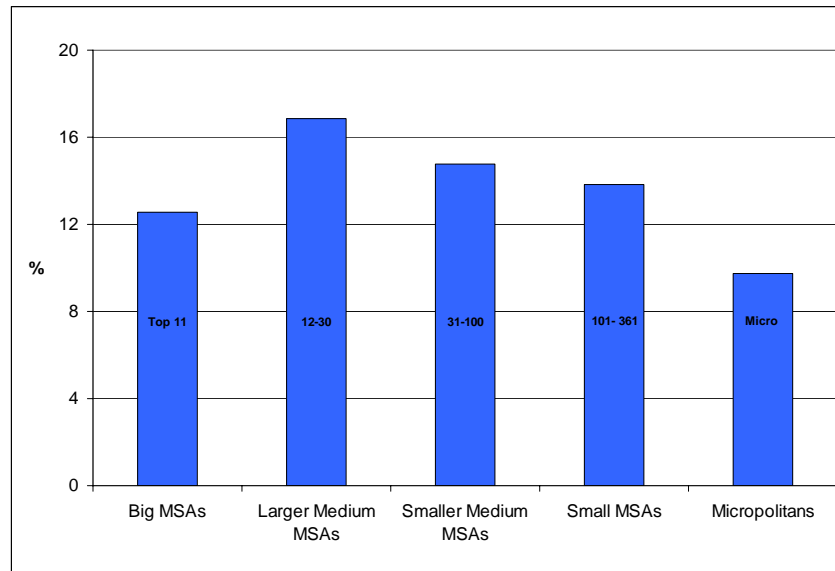
A long running phenomenon in North America and elsewhere is a tension between rural and urban — i.e., the “rural/urban divide” (Gillis 2004; Hunter 2005; Klinkenborg 2005). Clearly, a popular perception is that rural dwellers are unsophisticated and have little hope of ever succeeding in the global economy. For example, discussions surrounding the 2004 U.S. Presidential election often centered around rubes who reside in “red” states and sophisticated wine-drinking urbanites in “blue” states.

While economists and regional scientists have not overtly taken sides in this debate, a large contingent of growth economists indirectly supports the popular conception by arguing that agglomeration economies give the largest urban centers a significant economic edge over their rural neighbors. Agglomeration economies follow from many factors, including thick labor pools, more specialized input-output linkages, lower transport costs both upstream and downstream, while recent attention has also focussed on knowledge spillovers (Glaeser et al. 1992; Rosenthal and Strange 2001; Henderson 2003). Moreover, agglomeration can also produce consumer amenities such as more varied shopping and cultural and recreational venues as well as interesting diverse populations (Quigley 1998; Florida 2002; Adamson, Clark, and Partridge 2004). Indeed, many contend that agglomeration economies are the primary drivers of growth (Krugman 1991). In some sense, this is understandable as it is relatively easy to derive theoretical models in which employment density is the driving factor behind economic activity.

There is truth to this urban-centric view as reflected by the oft-stated point that “why would a business in Manhattan pay those rents and wages unless they were getting productivity benefits from the close human interaction?”⁶ Yet it is one thing to say that dense urban areas have significant static advantages over rural areas and another thing to say that the advantage favoring the largest urban centers is rising over time and that the death of small cities and rural communities are upon us. Empirically, such agglomeration economy/knowledge spillover-type models would predict that the very largest urban areas would grow at a much faster rate than the rest of country. Yet we regional scientists would offer a whole host of alternative hypotheses about population movement. For instance, we would point to offsetting effects from congestion, along with the growing importance of amenities as incomes rise.

So, to examine whether conventional wisdom or regional scientists (on average) are correct, let’s examine the data. Figure 6 first shows 1990s population growth for the 11 largest metropolitan areas in 1990, arbitrarily cutting off the “big city” group at San

⁶See Glaeser and Marés (2001) for an excellent discussion of this point.



Source: Bureau of Economic Analysis:

www.bea.doc.gov/bea/regional/reis/reis_download.csv?table_id=184443

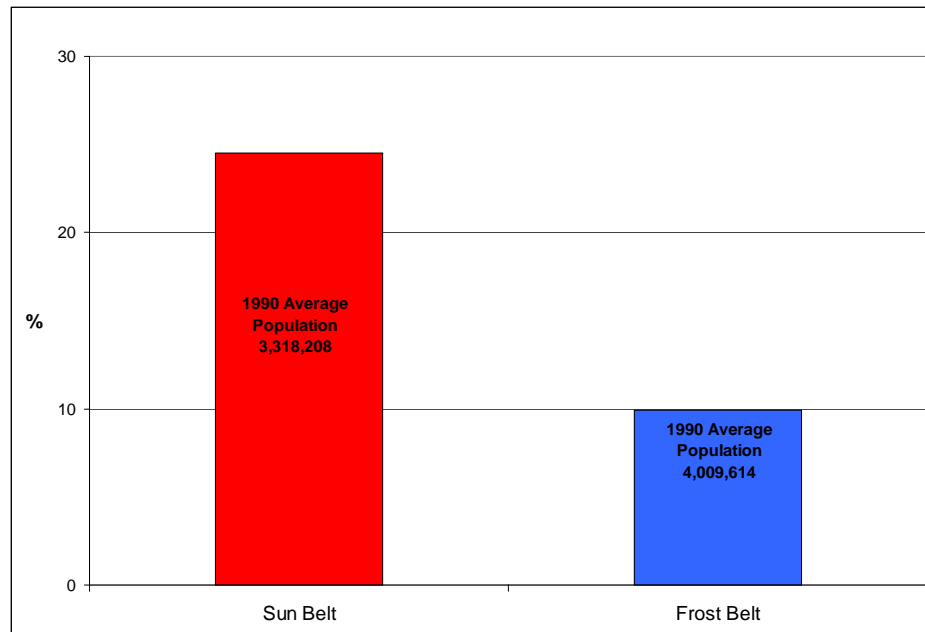
Retrieved on February 21, 2005. Ranking based on 1990 population.

Top 11 MSAs: New York-Northern New Jersey-Long Island, NY-NJ-PA; Los Angeles-Long Beach-Santa Ana, CA; Chicago-Naperville-Joliet, IL-IN-WI; Philadelphia-Camden-Wilmington, PA-NJ-DE-MD; Detroit-Warren-Livonia, MI; Washington-Arlington-Alexandria, DC-VA-MD-WV; Boston-Cambridge-Quincy, MA-NH; Miami-Fort Lauderdale-Miami Beach, FL; Dallas-Fort Worth-Arlington, TX; Houston-Baytown-Sugar Land, TX; San Francisco-Oakland-Fremont, CA

FIGURE 6. Percent Population Growth 1990-2002 MSAs and Micropolitans

San Francisco. Then it shows population growth for the 12-30 largest metropolitan areas, the next 70 largest metropolitan areas, the remaining small metro areas, and finally micropolitan areas. Clearly the big-city group actually fared worse than their smaller metro counterparts, only edging out micropolitan areas. The results suggest that we need a better explanation than agglomeration economies if we want to understand the drivers of recent American urban growth.

Figure 7 tries to present an alternative “regional science” view by splitting the largest 30 metropolitan areas into the 15 in the “frost-belt” and the 15 in the “sun-belt.” Though the 15 frost-belt metropolitan areas were about one-fourth larger in 1990, their population grew at well under one-half the rate of the sun-belt metro areas. The point is that despite the appeal of arguing that the largest cities have advantages in agglomeration economies, economies, culture, and ambience, the actual movement of people is toward smaller



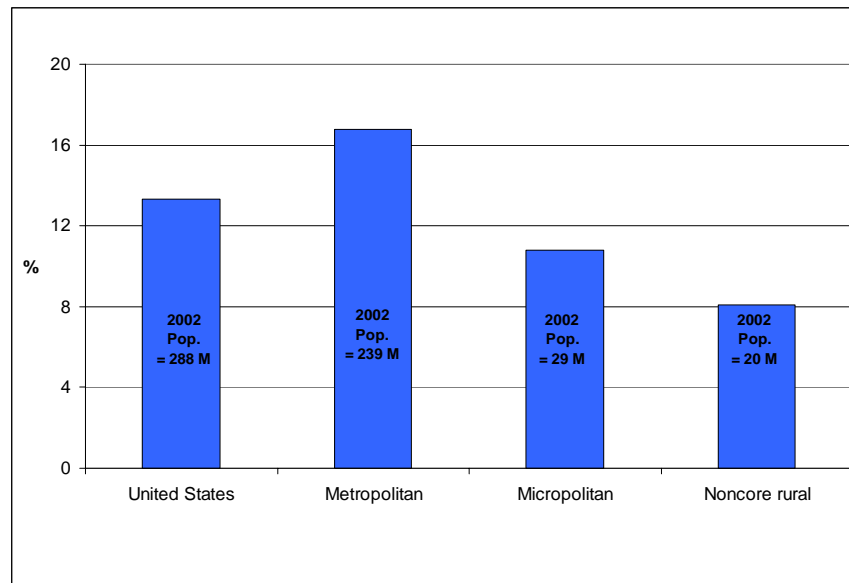
Source: Bureau of Economic Analysis:

www.bea.doc.gov/bea/regional/reis/reis_download.csv?table_id=184443 Retrieved on February 21, 2005.

Top 30 ranking based on 1990 population. Sun-Belt MSAs: Los Angeles-Long Beach-Santa Ana, CA; Washington-Arlington-Alexandria, DC-VA-MD-WV; Miami-Fort Lauderdale-Miami Beach, FL; Dallas-Fort Worth-Arlington, TX; Houston-Baytown-Sugar Land, TX; San Francisco-Oakland-Fremont, CA; Atlanta-Sandy Springs-Marietta, GA; Riverside-San Bernardino-Ontario, CA; San Diego-Carlsbad-San Marcos, CA; Phoenix-Mesa-Scottsdale, AZ; Tampa-St. Petersburg-Clearwater, FL; Denver-Aurora, CO; San Jose-Sunnyvale-Santa Clara, CA; Sacramento-Arden-Arcade-Roseville, CA; Virginia Beach-Norfolk-Newport News, VA-NC

Frost-Belt MSAs: New York-Northern New Jersey-Long Island, NY-NJ-PA; Chicago-Naperville-Joliet, IL-IN-WI; Philadelphia-Camden-Wilmington, PA-NJ-DE-MD; Detroit-Warren-Livonia, MI; Boston-Cambridge-Quincy, MA-NH; St. Louis, MO-IL; Seattle-Tacoma-Bellevue, WA; Minneapolis-St. Paul-Bloomington, MN-WI; Pittsburgh, PA, Baltimore-Towson, MD; Cleveland-Elyria-Mentor, OH; Cincinnati-Middletown, OH-KY-IN; Kansas City, MO-KS; Portland-Vancouver-Beaverton, OR-WA; Providence-New Bedford-Fall River, RI-MA

FIGURE 7. Comparison between Sun-Belt and Frost-Belt Top 30 MSAs
1990-2002 Population



Source: U.S. data: Bureau of Economic Analysis:
www.bea.doc.gov/bea/regional/reis/reis_download.csv?table_id=184443
 Retrieved on February 21, 2005. Metro, Micro and Rural data: USDA ERS
www.ers.usda.gov/Briefing/Population/popchange/ Retrieved on February 23, 2005.

FIGURE 8. Percent Population Growth 1990-2002

metropolitan areas located in nice climates.⁷ Finally, what about the hinterlands? Surely “noncore” rural areas that have less than 10,000 people outside of the commuting sheds of more urbanized areas cannot ever hope to survive in the global, knowledge-based economy without agglomeration economies.

To consider this dreary prediction, Figure 8 reports 1990s population growth in the U.S. in metropolitan and micropolitan areas and in “noncore” rural areas. Nevertheless, despite what the media and growth theorists suggest about the advantages of cities and the death of rural areas, even the most remote rural areas grew at about two-thirds of the national rate. To be sure, regional economists have known that population growth is generally unrelated to initial population size since Gibrat’s (1931) study. Again, the

⁷ My views on the role of agglomeration economies and climate have been shaped by Hansen (2001) and Rappaport’s (2004a, 2004b) recent work on climate (with acknowledgment to the contributions of Mueser and Graves, 1995). For a different view between the lack of a relationship between initial population growth and subsequent city/metropolitan area growth, see Eeckhout (2004).

lesson to the media and other opinion leaders are that “things are not always what they seem.”

In conclusion, I first want to extend an invitation to policymakers, growth theorists, and media mavens to attend the 2006 Southern Regional Science Association meetings. I believe exposure to regional scientists would help them better understand actual trends rather than continuing to base their work on their personal hopes or beliefs. I believe that if they do attend — which I have to admit that I am pessimistic — they will find out that regional scientists are the ones that have it right, or are at least aware of the actual facts.

Thank you for your kind attention.

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