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**Innovation, Creativity and Inclusion:
What is Social about the Dynamics of Economic
Performance in City-Regions?**

David A. Wolfe and Allison Bramwell

Program on Globalization and Regional Innovation Systems
Centre for International Studies
University of Toronto
1 Devonshire Place
Toronto, ON M5S 3K7
<http://www.utoronto.ca/progris>

1.0 Introduction

The pressure towards a globalizing, knowledge-based economy raises questions about the determinants of economic performance in industrial economies. The creation and diffusion of new knowledge drives innovation, and innovation in knowledge-intensive production and service activities drives economic performance and growth. Although innovation processes are strongly shaped by national institutions and global knowledge flows, recent analyses of innovation and creativity in the knowledge-based economy emphasize the continuing relevance of regions in general and urban regions in particular, as critical sites for determining economic performance (Morgan 2004; Gertler 2001). Many aspects of contemporary economic change make cities *more* – not less – important as principal sites for innovation, creativity and production of knowledge-intensive goods and services.

This work also suggests that the underlying social dynamics of urban regions are particularly significant in shaping economic outcomes. As Gertler notes: “it is also primarily in cities that we raise our families, and shape our social, cultural and political institutions. Cities are as much social spaces as they are economic ones” (2001, 120). The interactive and social nature of innovation makes city-regions the ideal space in which social learning processes can unfold. Knowledge transfer between highly skilled people happens more easily in cities, because the sheer density and concentration of economic players in large cities offer multiple opportunities for contact, interaction and knowledge circulation (Orlando and Verba 2005). From this perspective, the foundations of economic success in an increasingly competitive world are the social qualities and properties of urban places. Decisions that shape the social character of our cities will also have direct consequences for our economic well being.

A number of pressing questions remain unresolved. First, while there is an emerging consensus around the role that city-regions play in facilitating the circulation of knowledge that underlies innovation, a debate remains over precisely *how* knowledge circulates within cities. Some analysts view the most important dynamics arising from the inter-firm, labour market and knowledge externalities that occur within individual sectors or clusters (Porter 2000), while others emphasize the learning opportunities that arise from knowledge circulating across sectoral and cluster boundaries within the city-region (Audretsch 2002). In this view, ideas that are commonplace within one particular sector may have novelty value in another, and the possibility of inter-sectoral (or inter-cluster) knowledge exchange and spillovers arising from this economic

variety enhances the learning potential for local economic actors. This dichotomy has typically been framed in terms of the diversity vs. specialization – or Jacobs vs. Marshall-Arrow-Romer – (MAR) debate (Glaeser et al. 1992). Both perspectives view the social context of the firm as critical for its innovative and economic performance, but differ significantly with respect to the relevant scale of the social dimension. The issue of industrial concentration versus diversification also has dramatic implications for the ability of city regions to cope with the changing competitive dynamics flowing from the rapid globalization of industries, including many knowledge-based ones. Second, while there is substantial agreement on the advantages that accrue to the largest city-regions as centres of innovative activity, there is considerably less consensus on the prospects for mid-size and smaller urban regions in this regard (Orlando and Verba 2005; Duranton and Puga 2005). Small and medium-sized cities often operate from a narrower industrial base and have fewer linkages into global economic networks, leading us to hypothesize that there may be an important connection between the scale economies enjoyed by various urban regions and the benefits derived from specialization or diversity.

Finally, tectonic shifts to knowledge-intensive production and service activities are accompanied by an increasingly complex set of challenges to the social well-being of cities. Somewhat distressingly, there is growing evidence that urban size may be also be associated with significant diseconomies of scale and resulting negative externalities. Population size tends to be positively associated with higher income per capita, but only up to a certain point; beyond that statistical analysis by the OECD indicates that the size-income relationship turns negative due to significant diseconomies which they suggest are associated with greater transportation congestion, the cost of logistics and transportation, higher rents and environmental degradation. (2006, 51). Another body of work suggests that quality of place is also a significant factor underlying the social dynamics of city regions and, in turn, influences their economic performance (Florida, Mellander, and Stolarick 2007; Gertler, Florida, Gates, et al. 2002; Florida 2002). From this perspective, urban regions that are successful in developing tolerant and welcoming attitudes towards tolerance and social diversity are likely to succeed in attracting and retaining highly educated workers. The ability to sustain vibrant neighbourhoods, relative freedom from social deprivation, and access to employment and social services, such as shelter, education, nutrition and health care, are also essential components of quality of place. Yet a growing body of evidence in Canada and elsewhere concludes the reverse is occurring,

especially in large urban centres: while some benefit from highly-skilled well paid jobs, many others do not, and remain trapped in low wage, contingent jobs and cycles of poverty.

Thus the social dimension appears critical for understanding the economic performance of city regions. Yet many of these treatments have been strangely silent on what specifically constitutes the social dimensions of economic performance in urban regions. Institutions are often depicted as an essential element that underpins the social aspects of urban life because of their ability to shape common values of diversity, tolerance and equality that are important factors influencing the quality of place. This paper attempts to explore some of these issues in a more systematic fashion and link the conceptual issues outlined above to the rapidly growing body of empirical research on the economic performance of city regions. This is undertaken in the context of an analysis of the social dynamics of economic performance in city regions across Canada.

2.0 The Social Nature of the Innovation Process

One of the defining features of contemporary economies is the central role of knowledge and learning in the creation of economic value and the determination of competitive success (Lundvall and Johnson 1994). Innovation is a socially organized process that depends on interactive, social learning between individuals and firms (Morgan 1997; Maskell and Malmberg 1999; Gertler 2003; Asheim and Gertler 2005). ‘Learning’ refers here to the building of new competencies and the acquisition of new skills, not just acquiring information. The rapid pace of change associated with the ‘frontiers’ of economically relevant knowledge, means that its economic value tends to diminish the more widely it is disseminated. The easier and inexpensive access to information tends to reduce the economic value of more codified forms of knowledge and information. In tandem with this, forms of knowledge which cannot be codified and transmitted electronically (tacit knowledge) increase in value, along with the ability to acquire and assess both codified and tacit forms of knowledge, in other words, the ability to learn. The capacity to learn is essential for individuals and firms to maintain access to, and control over, the constantly expanding knowledge frontier (Lundvall and Borrás 1998). As Lundvall stresses, innovation - learning to create new products or processes - is fundamentally an interactive, process that flourishes in the presence of social networks. In this sense, “learning and innovation

are best understood as the outcome of *interaction* . . . interactive learning is a socially embedded process and . . . therefore a purely economic analysis is insufficient (2007, 10).

The critical issue is how to define and understand the nature of the socially embedded process and particularly its manifestation in a regional or urban setting. Most analysts view the social dimension of economic relations as embedded in institutions. The emphasis on institutions arises from the simple observation that virtually all social interaction occurs within an institutional context. In the economic sociology of Weber, Schumpeter and Polanyi, economic processes are embedded and enmeshed in a variety of institutions, including habits and customs, as well as government, religion, culture and the legal framework of a society (Smelser and Swedborg 2005). From the perspective of evolutionary economics, institutions occupy a similar status, but play specific roles in the functioning of an economy. They reduce uncertainty in everyday life by forming patterns of interaction and shaping the way individuals view and understand society. New knowledge is created through processes that are institutionally embedded. Institutions are therefore, central to the process of learning. Institutions also “provide information, reduce uncertainty, manage conflicts and cooperation, and create incentives and trust. These functions not only give stability and structure to the economy, they are also crucially important for innovation. All innovative activities are riddled with uncertainty and in the modern economy there are many institutions to assist in coping with the technical and financial uncertainties of innovation” (Johnson and Nielsen, 1998, pp. xiii-xv)

Organizational structures and the institutional practices within which they are embedded strongly influence the capacity for social learning. Institutions incorporate social roles based on established norms and expected patterns of behaviour, precluding the necessity for individuals to relearn their roles anew everyday. They operate as a mechanism for transmitting information about expected patterns of behaviour. In an economy where the basis of production is becoming more knowledge-intensive, the role of organizations and institutions in retaining knowledge and transmitting information to their members becomes ever more critical. A key challenge in understanding the social dynamics of economic performance at the urban level is to specify the relevant set of organizational structures and institutional practices that impact on the processes of innovation and creativity. The challenge is rendered more difficult by the fact that most of the relevant institutional practices are determined at the national, and the regional level (Gertler 2002). A recent comparative study of institutional differences across the innovation systems of

European countries finds that the distinctive features of national systems affect their capacities for innovation. Both the nature and interrelatedness of these institutional systems affect how new and enhanced knowledge is absorbed and put to commercial use within firms (Lorenz and Lundvall 2006). Similar sets of institutional relations operate at the regional level, strongly influencing the innovative capabilities of urban centres located within those regions. While a detailed discussion of how different levels or ‘scales’ of institutions relate to each other is beyond the scope of this analysis, the relevant set of institutional structures underpinning the dynamics of economic performance can be conceived as ‘nested scales’ embedded within each other (Bunel and Coe 2001). The task here focuses on the institutional and social dynamics underpinning the economic performance of city-regions.

3. 0 Reframing the Debate: Industrial Evolution and the Life Cycle of City-Regions

A number of theories have been advanced to account for the relative pace of growth and industrial transformation in different city regions. This section reviews the key debates and findings of these approaches, and relates them to the preceding discussion. Questions about the various factors that affect the economic performance of different cities have been framed largely in terms of the debate over the relative degree of specialization or diversity that characterizes their economic structure. However, recent research suggests that a number of other underlying factors may exert a determining influence over their relative economic performance. These factors include the size of the respective city and its point of insertion into an evolving global network of urban nodes, as well as the point of evolution of the industrial structure towards more knowledge-intensive activities that include what has been labeled the ‘cognitive cultural economy’ (Scott 2007). Underpinning this performance is a set of organizational structures at the urban scale, as well as those determined at different geographic scales. The following discussion surveys a range of factors that exert an important influence over relative degrees of economic performance and suggests some ways in which they are in turn, affected by the social dimension of organizational structures and institutional practices.

Two alternative approaches deal with the impact of knowledge spillovers on industrial innovation and each generate competing explanations for how technological advances contribute to growth and economic performance in city regions. The Marshall-Arrow-Romer externality

(MAR) argues that knowledge spillovers in specialized, geographically concentrated industries make the most significant contribution to growth. These localization economies are external to individual firms, but internal to an industrial sector, and rely on a common labour pool, skill base, specialized suppliers, educational institutions, and other industry-specific complementary assets. Transfer mechanisms for spillovers of tacit knowledge and ‘learning-by-doing’, include the intra-sectoral mobility of specialized labour and serial entrepreneurs, as well as the ‘learning-by-observing’ effects of densely concentrated industries (Glaeser et al. 1992). In contrast, Jacobs (1969) argues that the most important knowledge transfers originate outside the core sector and that the diversity of geographically proximate industries, rather than specialization per se, promotes innovation and growth. Knowledge flows between firms in different industries, where new ideas form by combining older ideas or by applying knowledge that is routine in one sector to problems in another sector, drive innovation and growth. Large urban economies, with their mix of different industries and occupations, increase the potential for knowledge flows between industries, and therefore, exhibit faster growth and higher levels of innovative dynamism.

Subsequent empirical research has generated substantial support for this argument, suggesting that diversity across complementary industries sharing a common knowledge base stimulates economic and employment growth. In an early study to empirically test the hypothesis, Glaeser et al. (1992) measured employment growth in a cross-section of manufacturing industries using data on 170 US cities between 1956 and 1987, and found that, at the city-industry level, “specialization hurts, competition helps, and city diversity helps employment growth” (p. 1150). In a subsequent study of US knowledge-based industries, Feldman and Audretsch (1999) found that diversity across complementary industries sharing a common science base stimulates innovation, and that the degree of competition for new ideas within a city is more conducive to innovation than local monopoly (Feldman and Audretsch 1999). Audretsch argues that the greater the competition for new ideas within a city, the more conducive the urban environment is to innovative activity: “Perhaps the most important conclusion from these . . . studies, however, is that more than simply an endowment of knowledge inputs is required to generate economic activity. *The underlying economic and institutional structure matters*, as do the micro-economic linkages across agents and firms (2002, 172-73) (emphasis added).

3.1 *The Role of Specialized Knowledge Bases*

Some authors suggest that it is important to differentiate between specializations in certain kinds of industries. Places that specialize in certain kinds of knowledge-intensive service activity generate stronger economies than places without any specialization Drennan (2002). The globally exported information sector is the fastest growing part of the US economy, and is concentrated in the largest US metropolitan areas.¹ Drennan's comparison of changes in specialization in goods and services producing industries across 46 large US metropolitan areas (with populations over 1 million) between 1969 and 1996 suggests that cities experience variations in their economic fortunes according to their industry specialization and that "some specializations are better than others", "some specializations can be worse than having no specialization", and "not all specializations are good for all time periods" (2002, p. 6).

This point is further reinforced by recent work on the Internet economy. The spatial clustering of the Internet related production of goods and services is not distributed according to population patterns, but according to the spatial concentrations of the information economy (Zook 2005). It follows that the large concentrations of some of the same industries documented by Drennan in advanced producer services, finance, media, entertainment, health, technology and related industries constitute the control center of the information economy, and are concentrated in large metropolitan areas. The growing impact of telecommunications and computer networks reinforce these concentrations of high-value added producer services in a few large metropolitan centres (Castells 2001, 222-31). These findings underscore the importance of industrial evolution, suggesting that innovation and economic performance do not depend solely on diversity, but also on the type of industrial activity and its related product life cycle. Both MAR and Jacobs' externalities play an important role in innovation but do so in different sectors; diversity appears to exert a greater influence in high tech industries, and MAR in capital goods industries (Henderson 2003). Economic growth is driven by the exportability of knowledge-

¹ Drennan (2002) distinguishes between the traditional manufacturing sector and the information sector. The latter includes financial producer services, producer services and advanced consumer services (16-17). He reports that information sector exports were \$133 billion in 1999, accounting for more than two thirds of the \$193 billion in high tech exports of computers, semiconductors, aircraft, telecom equipment and scientific instruments.

intensive goods and services that depend more on innovation in “world leading developments” rather than the production of durable consumer goods (Simmie 2002b).²

The increasing centrality of knowledge-based industrial activity for urban economic competitiveness suggests that the growth potential of cities depends largely on their ability to develop knowledge-intensive specializations. The speed and magnitude of recent shifts to knowledge-based industrial activity indicates, however, that “one of the defining features of [this] so-called new economy is its persistent postponement of anything like the stage of maturity” (Scott 2006, 2), which introduces a distinctly Schumpeterian dimension into the analysis of urban economic performance. New economy sectors are “endemically given to continuous learning and hyper-innovation in all phases of their growth” (ibid., 2). Sector-based notions of the modern economy are being rendered obsolete by the “merging roles of manufacturing and service activities”, where firms must be able to master both mass production or knowledge-based activities, (Simmie and Wood 2003, 150). Agglomeration economies also play different roles in innovation at different phases of the product life cycle. Firms often develop new products in diversified creative urban contexts and relocate to specialized cities in the mass production phase in order to exploit cost advantages (Duranton and Puga 2005). In this new ‘creative economy’, “dynamic cities are constantly reinventing themselves by moving from one field of specialization to another” and traditional industries may be “a stepping stone to the success of a new creative industry” because “a creative idea that works well in one industry often can be licensed or further developed in other industries” (Wu 2005, 7,13). The successful development of ‘creative’ clusters, many of which involve information-intensive activities, is a path dependent, endogenous process, which builds on the distinctive knowledge and industrial bases of individual cities. The rapidly changing nature of goods and services production in urban economies and the decline of durable manufactured goods are mirrored in the life cycle of cities (Brezis and Krugman 1997; Storper and Manville 2006).

The capacity of urban centres to effect transformations in industrial activity depends to a great extent on the sophistication of their institutional structures. Those that develop innovation capacities in knowledge-intensive goods and services industries are more likely to do well; those

² Industries most associated with high tech innovation are microelectronics, biotechnology, new materials science, telecommunications, civil aviation, robotics and machine tools, computers and software, and knowledge-based service sector activities (Huggins 2000 – cited in Simmie 2002a).

that do not are likely to struggle. Variation in cities' economic fortunes indicates that the prosperity derived from the ability to harness the knowledge flows that drive innovation is by no means assured for all places, and globally competitive innovation is concentrated in a minority of urban regions (Simmie 2002a; 2002b; Simmie and Wood 2003). Older centers that remain invested in existing technologies in which they are already efficient, are often overtaken by “upstart metropolitan areas” that can more easily take up undeveloped new technologies because of their lower rent and wages. While some “old, cold” industrial cities in the US have experienced recent economic growth and resurgence due to an ability to shift to knowledge-intensive activities, others have not, and “the Silicon Valleys of the Second Industrial Revolution had names like Akron, Detroit, Pittsburgh, and Rochester” (Safford 2004b, 16). Cities and peripheral regions that lack technological endowments and are locked into specializations in mature manufacturing are often handicapped (Storper and Manville 2006; Wu 2005). Peripheral regions in particular tend to be less innovative because of their lower R&D intensity, their reliance on incremental product and process innovations, and the fact that many firms are externally controlled (Tödting and Tripl 2005). As a result, the dynamic aspect of knowledge-based economic growth may afford a better explanation of urban growth and the resurgence of older industrial cities than simple agglomeration: “the important question may not be specialization vs. diversity but whether a city has specialized in the right thing at the right time” (Storper and Manville 2006, 1250).

3.2 Size Matters: The emergence of an international hierarchy of cities

In this context, it appears that city size matters for economic success and that large cities do better than medium-sized and small ones. Most urban growth theories agree that cities are unique in their own right. The significant variation among US cities alone in terms of geographical size, per capita income, and human capital, indicates that “metropolitan economies are neither microcosms of the national economy nor cookie cutter versions of each other at different scales” (Drennan 2002, 7). Variations in the ability of cities to create and diffuse new knowledge – depends on interaction effects between a range of factors, especially size and industrial activity. Larger cities tend to be more diversified and knowledge-intensive than medium-sized and small cities; where large cities tend to have multiple specializations, medium-

sized cities may have just one or two, or worse yet, none (Duranton and Puga 2000; Audretsch 2002; Crescenzi et al. 2007; Drennan 2002). Different sized cities also tend to have different types of specializations. Henderson (2003) finds that cities of similar specialization are of a similar size, and that large cities tend to specialize in knowledge-intensive services (finance, real estate, insurance) and new industries (electronic components, instruments), whereas medium-sized cities are more specialized in mature industries (textiles, food, automotive). Drennan finds that large cities were more likely to gain population in the 1990s, and argues not only that “*metropolitan* specialization favors *city* population growth” but also that the type of “specialization, size and human capital all appear to effect the level and growth of metropolitan income” (2002, 82, 116). Levels of innovative activity are also linked to city size – with R&D, patenting, and major product innovations concentrated in larger urban agglomerations (Audretsch 2002, 170).

Larger cities, with diverse knowledge-intensive production and service activities simultaneously act as economic hubs in both national and global economies (Simmie 2002a; 2002b; 2003; Simmie and Wood 2002). Knowledge flows more easily in big urban centers, which are advantaged in their abilities to draw on both local and global sources of knowledge (Audretsch 2002; Audretsch and Feldman 1996; Veltz 2004), and attract the best ‘talent’ (Florida 2002; Markusen and Shrock 2006), thereby insulating themselves from the effects of population and industrial change (Drennan 2002). Medium-sized cities appear to have to work harder to create and diffuse knowledge. Often specialized in a narrower range of industrial activity, they serve as hubs for their regional economies, but have less access to global knowledge flows and trade (Simmie 2003; Duranton and Puga 2000). Only the most dynamic medium-sized cities appear to specialize in knowledge-intensive industrial activities. These tend to make the best use of local institutional research supports (universities) and social networks (Safford 2004a). At the same time, medium-sized cities are more susceptible to the negative impacts of industrial and population change (Storper and Manville 2006).

The fact that the most successful cities are typically the most diversified, and the most diversified cities are typically the largest, signifies the emergence of an international hierarchy of city-regions, where the very largest ‘super cities’ have become “knowledge hubs of the international economy”, and smaller, but still large, regional capital cities with specializations in knowledge-intensive activities act as hubs in their national and regional economies (Simmie 2002a, 900).

Both international hub cities like Paris, London, Tokyo, New York and Los Angeles, and national or regional hub cities, like Toronto, Montreal, Boston, Lyon/Grenoble, Frankfurt, Stuttgart, and Milan can be innovative and economically competitive. Though different in size and scope, successful large cities share two characteristics: they contain high levels of elite business and political decision-makers, which endows them with a measure of autonomy to make private and public investment decisions locally, and they have the advantages of agglomeration economies that offer a “rich mixture of possible collaborators” (Simmie 2002a, 899). The ‘international gateway cities’ at the top of the urban hierarchy outperform because of their concentration of innovative firms and because they have access to large pools of professional and technical labour. Capital cities occupy a “singular place in their respective urban hierarchies” because they are “subject to a bombardment of new ideas and practices as knowledgeable people come and go from other parts of the global economy” (Simmie, 2002b, 213).

Simmie argues that knowledge-intensive innovation is concentrated in a minority of the largest urban regions for several reasons (2002a; 2002b). First, the ability to capture both local and global knowledge flows – “local capacity and international connections” – is necessary to reduce the inherent uncertainty of the innovation process. The most successful cities are “able to combine both rich local knowledge spillovers and international best practice in the design and specifications of innovation” (Simmie 2002a, 885, 886). Second, knowledge-intensive, innovative and ‘world first’ trade and exports, concentrated in the largest cities, are stronger determinants of urban economic competitiveness than is co-location in clusters. Third, the ability to capture the global knowledge flows that result from trade and knowledge spillovers from international clients and customers drives the development of an economy where national and international markets are more important than local ones. Using data from the Community Innovation Survey (CIS 3), he demonstrates that a firm’s ability to capture market share outside its own region is linked to novel innovations, indicating that innovative firms use more external sources of knowledge than less innovative ones, so “the ability to access external knowledge seems to play a significant role in the innovative capacity of the most innovative firms” (2003, 615). Finally, the minority of cities at the top of the emerging ‘international hierarchy of regions’ tend to transfer specialized knowledge among themselves. Transfers between places like Silicon Valley, Route 128, Berlin, Stockholm, Greater Southeast London, Baden-Wurttemberg, and Ile de France occur “because they are often repositories of leading edge

knowledge in the activities in which they are specialized. These regions are the leading nodes in the international distributed system of innovation” (Simmie 2003, 617).

Canada’s showing in the international hierarchy of globally competitive cities is less than stellar, with only one city – Toronto – in the 10-member ‘beta’ group of world cities (no Canadian city ranked in the top-most ‘alpha’ group), and the 12 member “well-rounded global cities” category (Beaverstock et al. 1999 cited in Brender et al. 2007). The city hierarchy *within* Canada, however, operates somewhat differently, and 10 major cities – Halifax, Montreal, Ottawa-Gatineau, Toronto, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, and Vancouver – generate a large proportion of national wealth. In 2005, these cities accounted for 51 per cent of gross domestic product (GDP) and 51 per cent of employment. Between 1995 and 2005, 65 per cent of the 3.1 million net new jobs created in Canada were located in them. Over the same period, their GDP grew by 3.6 per cent per year, as opposed to 2.9 per cent in the rest of Canada (Brender et al. 2007). Though these cities vary somewhat in size, each is a “hub city” that acts as the primary economic driver in its respective province or region. In the Canadian context, a report of the Conference Board of Canada argues that these “hub cities” face major challenges. While they are expected to drive economic growth, they lack the investment and political autonomy to fully develop this capacity (Brender and Lefebvre 2006).

The privileged position of the largest cities in the international hierarchy implies that small and medium-sized regions face more difficult challenges, which has significant implications for Canadian cities. Brezis and Krugman link industrial activity, economic fortunes, and city size, and argue that while large, diversified cities are insulated from the impacts of economic change, “smaller cities with narrow export bases . . . appear to go through a life cycle of growth and decay” (1997, 369). Some medium-sized cities do experience growth and prosperity due to their specialization in knowledge-intensive industries, but these are few and far between. Many small and medium-sized cities lack the industrial base, the knowledge base, and the quality of place to compete with the largest, most diverse cities, and are faced with the daunting task of rejuvenating their local economies with limited resources and factor endowments. We must also remember that city size is a relational variable, not just a dichotomous one. Small and medium-sized cities caught in the penumbra of larger ones find their challenges compounded by the economic attraction exerted by their larger neighbours, reducing the potential for them to emerge as regional hubs in their own right.

At the same time, some of the largest cities are facing their own challenges. The advantages of diversified agglomeration economies, rich knowledge infrastructures, and greater endowments of human capital, may be offset by negative externalities that threaten their economic and social fabric. Bigger does not necessarily mean better in all cases and “the growth capacity of metro-regions should not be over-estimated as metro-regions are not always synonymous with success” (OECD 2006, 15). Not all big cities are the same, and assuming that innovative capacity is directly correlated with size may be misleading. For example, while patents may be registered at corporate headquarters in large cities, they may have been generated at research sites located elsewhere. In addition, many large metro-regions tend to have large and persistent pockets of unemployment, suggesting that job creation is insufficient despite increases in output (OECD 2006). Mounting evidence suggests that concentrations of poverty in large OECD countries have become “urban phenomena”, especially in those facing industrial restructuring, such as Rotterdam, Lille, and Detroit, as well as in the suburbs of some of the richest such as Paris, London, and New York. Long-term disinvestment in public infrastructure also generates negative externalities, such as traffic congestion, pollution, poor air and water quality, and environmental degradation.

4.0 Size, Agglomeration and Concentrations of Talent and Creativity

The critical link between innovation, economic growth, and person-embodied knowledge spillovers makes the most prized locational resource highly educated and creative workers – what Cooke (2007) has called “regional talent pools of global significance” – that have the potential to attract and embed globally mobile investment, and generate innovative growth. There is an emerging view that the attributes of particular places which make them attractive to talented workers are of paramount importance in determining local economic prosperity (Florida 2002; 2005, Gertler et al. 2002). Such talent is attracted to and retained by cities, but not just *any* cities; those that offer rich employment opportunities, a high quality of life, a critical mass of cultural and entertainment activity, and social diversity are said to exert the strongest pull (Glaeser and Gottlieb 2006). An alternative line of reasoning argues that the relationship between large pools of talented, ‘creative’ workers and regional economic growth is less linear than has been suggested. The line of causality may be reversed and instead of skills driving economic growth, the preference of firms to locate in urban settings with large agglomeration

economies may be the primary driver of innovation (Scott 2006, 2007; Storper and Manville 2006). Though person-embodied ‘talent’ remains a critical input into innovation, it needs to be considered in the context of other critical factors such as city size, industry specialization, local institutional infrastructure, and knowledge flows.

A major contribution of – and empirical departure for – recent theories that link the skills of workers to the economic prosperity of cities, such as Florida’s ‘creative class’, is the measurement of knowledge-intensive, or ‘creative’ industries by individual occupation rather than the activities of firms (Florida 2002, 2005; Florida et al. 2007; Knudsen et al. 2007; Markusen and Schrock 2006). The creative class idea captures a range of human capital driven outputs from “people whose job it is to create new ideas, new technology, and new creative content” (Wu 2005, 2). It is not just the presence of scientists and engineers, but also of other idea-generating, knowledge occupations that drive innovation in the creative economy. However, not all occupations have the same affect, and certain occupations drive innovation and regional development more than others; education and health care have a relatively small impact whereas occupations like computer science, engineering, management, and business and financial operations have a measurably larger association. Recent empirical research has also found positive correlations between agglomerations of artists, other non-science occupations, and entrepreneurs, and economic dynamism, and there are relatively high correlations between artistic and entertainment occupations and regional labour productivity (Wojan et al. 2007; Markusen and Schrock 2006; Florida et al. 2007). Likewise, scientists and engineers have the greatest impact on growth when their presence is combined with a large and diverse pool of skilled workers, and “cities with large concentrations of degree holders in non-science, non-culture occupations experience more robust science and engineering growth than others.” The growth effects of these factors are also reinforced by the presence of a broad-based measure of urban amenities (Beckstead et al. 2008, 7). These findings suggest that there a similar labour market effects to Jacobs’ arguments about industrial diversity, and that the positive contribution of human capital to growth rests on a diverse labour pool.

Not only is labour a critical input for innovation, but the more concentrated the talent, the more innovative the output. Cities reduce the cost of knowledge transfer, and act as centres of idea creation and diffusion where talent ‘clusters’. Recent research finds a strong correlation between the density of creative workers and metropolitan patenting activity, which suggests that density is

a key component of knowledge spillovers and innovation (Knudsen et al. 2007). The same study also found a correlation between city size, industrial specialization, and knowledge-intensive occupational density. Consistent with emerging findings that the largest cities attract the strongest knowledge flows discussed above, the effect of creative density on innovation is, in absolute terms, largest for the largest cities (over 1 million), and the relationship appears to be significant only at that level, suggesting that innovative advantages accruing to big cities arise from “lopsided concentrations of technologically intensive manufacturing sectors and an uneven distribution of well-educated people”. In other words, large cities have more than their fair share of talent (Ó hUallachain 1999, 614 cited in Knudsen et al. 2007). A corollary finding is that human capital levels are becoming more divergent and “places that have more of it thrive, while those with less stagnate or decline” (Florida et al. 2007, 3). Glaeser and Gottlieb (2006) suggest that the resurgence of cities like London, New York, Boston and Chicago is partly attributable to the increase in the importance of knowledge to economic activity, so that “the biggest, densest cities appear to have a comparative advantage in facilitating the flow of knowledge”, and partly due to rising consumer preference for sophisticated urban amenities such as entertainment (p. 1275).

4.1 From the ‘creative class’ to the ‘creative economy’: cities as ‘Schumpeterian hubs’

These studies have firmly established the positive correlation between talent and human capital and innovation and economic growth. Emerging critiques, however, suggest that high concentrations of human capital are positively correlated with many beneficial externalities, and that beyond the presence of creative, knowledge-based workers, it is difficult to see what cities have in common. Skills-led explanations of economic growth downplay other critical inputs such as city size, industry specialization, institutional infrastructure and knowledge flows. These critiques argue that the locus of economic growth in cities is not primarily the preferences of skilled workers, but of firms (Scott 2006, 2007; Storper and Manville 2006). Pointing to the fact that economic resurgence has occurred not just in Sunbelt cities, but also in “old, cold, dense city-regions”, Storper and Manville argue that recent population growth in cities, both older, northern and ‘new’, southern ones, is linked to shifts in regional economic geography and industrial activity. Instead of amenities such as shopping and entertainment, which are

ubiquitous and readily available in all cities of a certain size, workers are drawn to centers where employment opportunities are the greatest:

Jacobs, Florida, and Glaeser are all on to something in claiming that skills and amenities go together, but they may have got their causality reversed. It is the fact that these skilled workers are congregated in certain places that leads to the presence of amenities and, in some cases, makes the places tolerant and bohemian as well (Storper and Manville 2006, p. 1254).

The argument that workers are attracted by employment opportunities more than consumer, lifestyle, and social amenities, does not necessarily negate theories emphasizing skills-led growth, but does suggest that explanations of regional economic growth need to be more nuanced. While many industrial activities still occur in identifiable industry sectors staffed by identifiable, industry-specific occupations, many emerging activities are less easily categorized this way. Changing patterns of urban development are similarly ambiguous. Scott (2006, 2007) describes these shifts in terms of an emerging ‘cognitive cultural economy’ where leading edge economic growth and innovation is driven by “technology-intensive manufacturing, diverse services, ‘fashion-oriented neo-artisanal production’, and cultural products industries”; digital technologies have facilitated the “deroutinization of labor processes and the destandardization of outputs” (Scott 2007, 1466, 1471). In this more complex characterization of modern urban dynamics, creative class and supply of labor arguments cannot alone account for local economic growth. Cities are “subject to path-dependent growth trajectories in which the supply and demand for labor move in patterns of mutually cumulative causation” (Scott 2007, 1474). An urban node is developed through the mutual attraction of capital and labor in an interdependent spiral, but labor is a subordinate, though critical, driver. Local economic growth is anchored by the preferences of firms, and the “generative power of local economic development resides preeminently in the path dependent logic of production, agglomeration, and regional specialization” (Scott 2007, 1477).

This interaction effect is directly related to city size, and the ‘cognitive cultural economy’ is most evident in large metropolitan areas, or “flagship hubs” like New York, London, Paris, Amsterdam, and Tokyo, where production activities are densely concentrated in firms with global market reach. New technologies permit simultaneous decentralization and concentration, which allows producers in large, productive urban centers to benefit from local knowledge flows by remaining anchored in a specific location, and from global knowledge flows and markets

(Castells 2001). Virtuous cycles of growth result as the number of producers increases and local growth accelerates, leading to the deepening of localized increasing returns and the intensification of agglomeration. Signs of this developmental dynamic are evident in large metropolitan areas both in rapidly growing ‘cognitive cultural sectors’, and in the formation of “intra-urban industrial districts devoted to specialized facets of cognitive-cultural production” such as high tech and software in the San Francisco Bay area, movies in Hollywood, business and financial services in New York and London, and fashion in Paris and Milan (Scott 2007, p. 1470). This emphasis on growth driven by agglomeration economies, and the virtuous interaction between skilled labor and firm preferences, characterizes cities as “the breeding environment for new consumption- or production-oriented technological experiments”, where value chains and networks of actors” can reshape “rapidly and efficiently” because cities are especially efficient at coordinating and accelerating the search processes that are the basis of innovation and growth. In this sense, cities are like giant ‘Schumpeterian hubs’, or “switchboards which permit the constant creation and reshaping of the chains linking producers, consumers, and different kinds of indirect players of the economy” (Veltz 2004.).

The migration of skilled labour, both interregional and international, has been one of the most important flows that have reshaped the character and geography of Canadian cities in recent decades. For the largest metropolitan areas, especially Toronto, Vancouver, Montréal, Calgary and Ottawa, international immigration has brought incredible dynamism and vitality by providing a key source of new human capital or talent (Conference Board of Canada 2007; Ley and Germain 2000).³ The impact of immigration on particular places, however, has been highly varied according to city size and relative location. For Canada’s mid-size and smaller communities, particularly those that are more remote from larger urban regions, the prospects for sharing in the benefits from interregional and international migration are considerably more limited. Many such urban regions are struggling to contend with the loss of home-grown talent to other regions of Canada, as well as the inability to attract and retain well-educated migrants from other regions and countries (Polèse and Shearmur 2002; Slack et al. 2003). For such

³ Evidence from technology hot spots documents how recent immigrants play a prominent role as both skilled workers and prospective entrepreneurs. Saxenian’s recent work shows that the flows of skilled human capital from countries such as India and Taiwan to Silicon Valley have helped overcome acute local labour shortages (2002). While some of these immigrants eventually return to their home countries to establish new businesses, they continue to maintain strong linkages to the Valley through branch operations, labour mobility and other connections – prompting Saxenian to reject the commonplace language of ‘brain drain/gain’ in favour of ‘brain circulation.’

communities, the challenges of pursuing a talent-based strategy to enhance local innovation, creativity and economic dynamism are considerably greater.

At the same time, however, despite the positive aspects of immigration to Canadian cities, there are also significant problems in integrating new immigrants. One indicator of the scope of the challenge is that recent immigrants are consistently amongst the most economically disadvantaged groups in Canadian (urban) society. A recent study of urban poverty in Canada (Lee 2000) found that recent immigrant communities exhibit some of the highest poverty rates for Canadians residing in urban areas (52.1% for recent immigrants, compared to 24.5% percent for all city residents. However, new Canadians are not the only ones experiencing poverty, exclusion, and social polarization. Urban labour markets increasingly feature a service sector divided between well-paid, influential, and rewarding careers in research, finance, and consulting in knowledge-intensive public sector and industrial activities, and poorly-paid, contingent, insecure, and unsatisfying jobs in retail sales, cleaning, data entry, and personal support care (Scott 2007; Bradford 2007). Income polarization evident at the national level in many OECD countries is most acute in large cities where different classes cluster in different neighbourhoods (OECD 2006). Gertler (2001) and others (United Way of Greater Toronto 2004, 2007) have documented the same growing income polarization and its increasing entrenchment in chronic spaces of exclusion within Canada's large metropolitan areas with the accompanying potential to undermine the very social characteristics on which a region's economic prosperity had been based.⁴

For people stuck on the wrong side of the new economy's 'talent divide', globalization may only have dislocated them socially and relocated them spatially: from full time manufacturing employment to temporary service jobs... the social environment works in the opposite direction, multiplying the constraints on individuals and families already in difficulty. The diversity celebrated by ...creative city advocates cannot drive innovation if those who are different or poor find themselves cut off from opportunity (Bradford, 2007, p. 2-3).

Attractive as the prospects are for talent-based approaches to economic development, the uneven distribution of creative occupations and highly skilled labour, coupled with growing degrees of

⁴ A recent United Way report indicates that family poverty continues to rise in the City of Toronto. In 2005, more than 1 out of every 4 Toronto families was low-income, up from 1 in 6 in 1990. By 2005, there was a significant gap between the 28.8% rate of low-income in the City of Toronto and the 19.7% national rate, the 19.5% provincial rate, and the 16.3% rate in the rest of the Toronto CMA (United Way of Greater Toronto. 2007).

social polarization in the largest and most successful urban agglomerations signal potential pitfalls for urban growth strategies. Some have argued recently that the pursuit of such strategies across a broad cross-section of society is essential for tapping into the full knowledge resources of the labour force. The greater the degree of social inclusion, the larger the potential pool of participants available to contribute to the creative processes essential for innovation. This theme is underscored in Florida's recent admonition: "If we are to truly prosper, we can no longer tap and reward the creative talents of a minority; everyone's creative capabilities must be fully engaged" (2005, 35). The key question is how to pursue socially-inclusive, talent-based economic development strategies at the urban level, while recognizing that some of the key institutional underpinnings that affect their success lie outside the scope of urban governance. A key challenge for education and labour market policy – both regionally and nationally – is to create the macro-institutional conditions that will allow urban governments to facilitate access to the education, skills, and labour market opportunities that disadvantaged groups require to overcome the existing barriers. Clearly, a major challenge facing metropolitan regions in Canada and elsewhere is to generate institutions to deal effectively with emerging obstacles to social integration and inclusion.

5.0 Political Agency and Strategic Management: Reconciling Industrial Transformation and Inclusive Communities through Civic Engagement

Economic prosperity in city-regions driven by the knowledge-intensive innovation embodied in knowledge transfers and dynamic relations between talented workers and the expanding cognitive creative dimension of the economy is a desirable goal. The foregoing discussion suggests, however, that the fruits of knowledge-intensive economic activity are distributed unequally between cities of different sizes, industrial specialization, and labour markets, as well as between people within those cities. In the "double-edged reality to the lived experience of the new localism", cities today are "engines of national prosperity *and* locales concentrating risks of social exclusion" (Bradford 2007, 3). Efforts to improve the economic performance of city-regions, therefore, need to address considerations of both industrial transformation and social inclusion at the same time. Increasing analytical attention is focused on cities' capacities to formulate responses to their own particular set of challenges. Very few cities enjoy the same endowments as Paris, New York, or London, but each has its own set of challenges, and there is

no one approach that works in all places. Yet regional economic development policies based on theories of regional innovation systems have often been applied in an inappropriate and “undifferentiated manner for all kinds of regions”, ignoring variations in local political economy, macro-institutional contexts, and relations at different spatial levels and scales (Tödtling and Trippel 2005, 1204; Harding 2007). In this sense, there is growing theoretical interest in the abilities of cities to alter their own economic fortunes, and that “communities can affect the tenor and trajectory of regional economies through a concerted, organized, *organizing* approach” (Safford 2004b, 39).

While local factor endowments strongly shape the trajectory of economic change within regions, arguments about political agency assume that cities have a measure of control over the direction of economic and social change (Simmie and Wood 2003; Savitch and Kantor 2002; Clarke and Gaile 1998). The response taken to the growing trend towards knowledge-intensive production on a global scale has been an increased emphasis on ‘strategic management policy’ at the regional and urban level. At the heart of this approach is “the development and enhancement of factors of production that cannot be transferred across geographic space at low cost” (Audretsch 2002, 174). While the introduction of this policy approach initially focused on the regional level, an increasing number of urban centres are adopting it as well. The successful adoption of a strategic management policy at the urban level requires not just a new category of policy, but a new style of policy development, deploying what Gertler and Wolfe label “local social knowledge management” exercises (2004).

Variation in cities’ innovative capacities are linked as much to “collaboration between agents and their ability to mobilize assets” and “the successful institutional arrangements [that] often grow out of local agencies and endowments”, as to the ability to create and diffuse new knowledge (Simmie and Wood 2002, 149). Rather than concentrating on the zero-sum competition for inward investment or ‘talent’, the most successful places will focus on searching for and generating new economic knowledge that drives innovation and export success. Not all places can become high tech powerhouses – much economic success still depends on size, diversity, and access to global knowledge flows found in the largest cities – but not all economic growth is in high tech, and the development of viable alternative niches is also needed (OECD 2006). Smaller cities are likely to remain dependent on their own regional resources more than

larger capitals, so knowledge generated in local research institutions may be more critical to them (Safford 2002b).

Ultimately, “policy prescriptions need to be tailored to the circumstances and strengths of individual urban regions” (Simmie 2002a, 214).⁵ Complex as the process of developing this strategic vision may be, it needs to be driven at the city-region level, where “institutional and political mechanisms that nurture creativity and channel innovation” can be built (Wu 2005, 7). Much depends on the ability of cities to develop the “organizational and institutional infrastructure within which collective action [can] be taken” Safford 2004a, 4) A key question for policymakers at the regional and local level is how to provide the right conditions for generating the growth of more knowledge-intensive forms of economic activity within the context of dynamic innovation systems or learning regions. The critical issue concerns the most effective means to alter the conditions that influence the trajectory of growth for a regional or local economy. Policy makers need to address the issue of how to develop, support and sustain regional and local systems of innovation that will be more effective in global competition than larger, more structured national systems. Communities and regions, like companies, need to adopt strategic management approaches to remain competitive. As a result, successful regions must be able to engage in regional foresight exercises that identify and cultivate their assets, undertake collaborative processes to plan and implement change, and encourage a regional mindset that fosters growth. These circumstances place new demands on the role of strategic planning exercises at the regional level.

The current period of economic and social change demands a broad conception of social learning that focuses on the capacity of institutions at all scales to sustain growth and facilitate the adjustment process to those activities associated with the emerging knowledge-intensive economy in both traditional manufacturing industries, as well as higher value service industries. The key organizational issue is how to pool and structure knowledge and intelligence in social ways, rather than to access them only on an individual basis. This form of shared or networked learning assumes that neither the public sector nor individual private enterprises are the source of

⁵ In his comparison of the economic growth trajectories in the two ‘rustbelt’ cities of Youngstown, Ohio and Allentown, Pennsylvania, Safford attributes the relative failure of the first and relative success of the second to the quality of social networks in each place, and argues that “differences in the underlying structure of inter-organizational relationships in the two cities shaped the strategic choices and possibilities for mobilization among key organizational actors” and that “these differences were the source of the regions’ economic divergence” (Safford 2002a, 3).

all knowledge. Instead, the process of innovation and institutional adaptation is an interactive one in which the means for establishing supportive social relations and of communicating insights and knowledge in all its various forms are crucial to the outcomes. The goal, then, is to establish effective systems for social knowledge management at the local and regional scale (Gertler and Wolfe 2004).

Local social knowledge management exercises assume that “different imaginaries are possible...and can be harnessed in the service of political action directed to social change” (Scott 2007, 1466). The ability of knowledge-intensive economic activities to create wealth does not necessarily entail similar growth in employment opportunities. Wealth and employment, and poverty and under- or unemployment are both spatially concentrated in cities. The negative externalities of poverty, social polarization and poor social cohesion are becoming more glaringly evident in cities. From both an economic efficiency and a social justice perspective, calls for strategic community-wide efforts to address these problems are becoming increasingly insistent. Institutions of urban governance need to facilitate collaboration between a variety of local and non-local governmental and non-governmental political actors in order to develop “socially inclusive creative city” strategies (Bradford 2005, 2007).

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