

**Creative Class and Economic
Development: The Case of Atlantic
Canada's Urban Centres**

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Executive Summary

Given the realities brought forth by the new economy and continental and global integration, economic development is more than ever linked to a region's capacity for innovation and creativity. In *The Rise of the Creative Class*¹, American researcher Richard Florida argues that creativity and diversity are the basis of regional economic growth and that they constitute a competitive advantage in the current economic context. Florida's creative class theory has influenced several political and policy leaders throughout North America, Europe and Oceania, yet his work has not been acclaimed by all. Is the creative class theory relevant for smaller and mid-size urban centres? More important, is it relevant to Atlantic Canada's urban centres?

This study reviews Florida's approach, and assesses how the theory applies to the case of four of Atlantic Canada's leading urban centres: St. John's, Charlottetown, Halifax and Moncton². We have deliberately chosen one urban centre per province and each is considered to be an economic leader of its province. More specifically, the study has three broad objectives. The first is to put demographic and economic trends in Atlantic Canada's urban centres in relation to the regional and national context. The second is to take stock of and profile the creative workers in Atlantic Canada's major urban centres and assess the opportunities and limitations of Florida's creative class theory. The third objective is to make policy recommendations relating to the economic development of Atlantic Canada, and its urban centres in particular.

The creative class theory

Florida's creative class theory can be summarized as such: a city-region that promotes creativity and diversity and offers a good quality of life will attract talented individuals – members of the creative class – and innovative firms. As a consequence, the presence of a creative class and its talents become “a key intermediate variable in attracting high-tech industries and generating higher regional incomes³.” Creative workers are extremely mobile and versatile, and have both the flexibility and the desire to settle in regions that correspond to their aspirations and lifestyle. In sum, the creative class theory is about laying the groundwork, or creating the conditions, for economic growth.

Florida's regional economic development theory contradicts classic theories in the sense that he considers that individuals do not follow jobs, but firms (especially high-tech firms) establish themselves in regions around which creative individuals gravitate. His definition of creative class is

¹ R. Florida, *The Rise of the Creative Class, And How It's Transforming Work, Leisure, Community and Everyday Life* (New York: Basic Books, 2002).

² This includes the adjacent municipalities situated around the urban core.

³ R. Florida, “The Economic Geography of Talent”, *Annals of the Association of American Geographers* 92, 4 (2002): 743.

wide-ranging, including a breadth of professionals such as artists, architects, engineers, lawyers, scientists, professors, researchers, etc. In brief, the creative class includes workers who innovate and who are at the basis of fresh ideas, new technologies and creative content. Unlike other classes of workers (such as blue-collar workers and service-sector employees), creative workers' assets lie in their ability to think and to work independently. The fact that they generally have a highly sought-after skill set provides them the flexibility to choose where they want to live and work. According to Florida, the creative class is emerging as a true force in the North American and European economies.

Four variables were developed by Florida and his colleagues to measure the performance of Canadian city-regions and determine their position in the creative class ranking. They are: the Talent Index, which is the percentage of the population (20 years and over) with a bachelor's degree; the Bohemian Index, which measures employment in artistic and creative occupations; the Mosaic Index, which is the percentage of the population that is foreign-born; and the Tech Pole Index, which reflects a city-region's degree of specialization in technology-intensive activity. Florida then uses correlations in an effort to measure the strength of linear relationship between pairs of variables. In other words, his methodology does not establish causality between variables.

Measuring the creative economy in Atlantic Canada

Using 2001 Census data, we apply Florida's indices to the Atlantic region and correlate the variables to determine to what extent they are related, focusing on Atlantic Canada's four selected urban centres (St. John's, Charlottetown, Halifax, and Moncton). Previous research on Canadian cities has solely focused on Census Metropolitan Areas (CMAs). In an effort to incorporate Charlottetown and Moncton into our sampling, we have widened the scope of our analysis to include selected Census Agglomerations (CAs). Having a larger pool of cities that includes CAs as well as CMAs provides a stronger base for comparison between larger metropolitan areas and small to mid-size urban areas. In total, our sampling includes all 27 CMAs plus 18 CAs.

The creative class ranking illustrates how Atlantic Canada's four major urban centres fared in relation to a wider group of 45 Canadian CMAs and CAs. The summary table below lists the top 10 city-regions for each index, and highlights the rank of St. John's, Halifax, Charlottetown, and Moncton. Overall, the region's urban centres did well with respect to the talent and bohemian indices. Stated differently, they had relatively high proportions of university-educated individuals and professional artists. Halifax in particular had a strong showing in both, as did St. John's and Charlottetown albeit to a slightly lesser extent. Charlottetown, along with Guelph, posted somewhat surprising results by outperforming several large urban centres in both categories. Even though Moncton lagged behind its Atlantic Canada counterparts and the national average by a relatively large margin on these two indices, the city did well in comparison to other CAs of similar size. The summary also points to the fact that the region scored poorly in the mosaic and tech pole indices, and therefore reflects the lack of ethnic diversity and the lack of concentration of high-technology

activity. Regardless of this, this ranking exercise has shown that Atlantic Canada's major urban centres have a solid base of talented and creative individuals on which economic development strategies can be built. Complementary initiatives aimed at attracting and retaining skilled international workers will only strengthen the region's foundations further.

Creative class indices ranking summary

Rank by Population	Rank by Creative Class Index			
	Talent	Bohemian	Mosaic	Tech Pole
1 Toronto	1 Ottawa-Hull	1 Vancouver	1 Toronto	1 Toronto
2 Montréal	2 Toronto	2 Victoria	2 Vancouver	2 Montréal
3 Vancouver	3 Guelph	3 Toronto	3 Hamilton	3 Ottawa-Hull
4 Ottawa-Hull	4 Calgary	4 Montréal	4 Windsor	4 Vancouver
5 Calgary	5 Halifax	5 Calgary	5 Kitchener	5 Calgary
6 Edmonton	6 Vancouver	6 Ottawa-Hull	6 Abbotsford	6 Edmonton
7 Québec	7 Victoria	7 Halifax	7 Calgary	7 Québec
8 Winnipeg	8 Kingston	8 Winnipeg	8 Guelph	8 Winnipeg
9 Hamilton	9 Saskatoon	9 Charlottetown	9 Victoria	9 Kitchener
10 London	10 Montréal	10 St. John's	10 London	10 Halifax
13 Halifax	12 Charlottetown	33 Moncton	36 Halifax	17 St. John's
19 St. John's	13 St. John's		39 Charlottetown	25 Moncton
29 Moncton	23 Moncton		41 St. John's	30 Charlottetown
45 Charlottetown			42 Moncton	

Using the index results, we calculated the correlations between variables in order to establish the strength of the relationship between pairs of variables. We must emphasize that correlations are a statistical technique that do not show causality between two variables, but rather relationships. The statistical relationships between variables in Atlantic Canada are as follows:

- A strong relationship between bohemian and talent indices (cities that attract creative and artistic people also attract talented workers).
- A strong relationship between talent and mosaic indices (cities that attract foreign-born individuals also attract talented workers).
- A strong relationship between talent and technology indices (cities with large concentrations of technology-intensive employment have talented individuals).
- A less strong, but still positive relationship between bohemian and technology indices (cities with large concentrations of technology-intensive employment also have a high concentration of creativity).

- A strong relationship between mosaic and technology indices (cities with large concentrations of technology-intensive employment also have a high concentration of diversity).

Using a combination of Florida's creative occupations list and Statistic Canada's knowledge economy occupations category, we can take stock of Atlantic Canada's creative class and determine their weight relative to the overall labour force. Nationally, 24.3% of the labour force was employed in a creative class occupation. Within Atlantic Canada, St. John's, Charlottetown and Halifax all surpassed the Canadian average. St. John's had the highest proportion of creative workers with 28.1%, or 25,400 workers in the category. In Halifax, the creative class represented 27.2% of the overall labour force (53,390 workers). Charlottetown ranked third in the region with 25.6%, or 32,140 working in a creative class occupation in 2001. Moncton came in last and under the national average with 22.8% of its labour force in the creative class grouping. Atlantic Canada's major urban centres appear to have a solid foundation in terms of a skilled, knowledge-intensive and creative labour force. Each city clearly led its respective province in this regard. Nonetheless, the creative class remains an imperfect and arbitrary taxonomy as creative and non-creative individuals can be found in all occupations. For example, some fishermen, machinists or farmers who may be highly creative and innovative in their work will not be captured by Florida's classification.

Policy opportunities for Atlantic Canada

Our analysis reveals that important economic and demographic disparities continue to separate the Atlantic region and the rest of Canada. Atlantic Canada's most disturbing realities include an ageing workforce, youth exodus, overall limited employment and productivity growth, and very modest international immigration. This being said, Atlantic Canada's major urban centres are outperforming the region as a whole on most economic and demographic indicators, in addition to having an above average concentration of creative professionals. In light of this context, it is fitting to explore new strategies for economic development initiatives in Atlantic Canada, and in particular its urban areas. Truth be told, several economic development stakeholders whom we met with remain unconvinced of Florida's way of thinking. From a practical perspective, businesses looking to settle in Atlantic Canada are first and foremost looking for skilled workers, competitive tax rates, and basic infrastructure needs. Some interviewees suggest, however, that the Atlantic region's urban centres should do more to market the benefits of mid-size peripheral cities in order to attract young, skilled workers to the area. But to build resilient economies, Atlantic Canada's urban centres will primarily need to create meaningful, high-wage employment opportunities.

Though the creative class theory sounds great on paper, it is not a panacea. Our major criticisms of the theory have to do with scale and methodology. Florida's approach was clearly designed with large metropolitan areas in mind, and some of his creative class indices definitely have a big-city bias (most notably the Technology Index). Despite this, some elements of his message are

nonetheless quite relevant for Atlantic Canada's major urban centres. Though the small and mid-size city reality of Atlantic Canada does not entirely line up with Florida's big city paradigm, we have demonstrated that Atlantic Canada's urban centres possess at least two valuable attributes associated with the creative class theory: a high percentage of the population with a university degree, and a high concentration of creative talent (bohemians). To be sure, these individuals constitute a solid foundation on which urban strategists and policy advisors can capitalize.

Atlantic Canada appears ideally positioned to pursue some elements of Florida's policy prescriptions. The region's lifestyle, unhurried quality of life, beaches, parks and accessible housing costs should appeal to creative individuals. In brief, one would think that the region has what it takes to become a Florida economic development laboratory. Yet these strengths are offset by the fact that comparatively speaking, Atlantic Canada's high-tech, research, and innovation activities, which are central to Florida's argument, represent only a small share of national output.

There are many things government could do to pursue Florida's policy prescriptions. However, there are also many things that governments are currently doing that square with Florida's view of the world. There are initiatives that both the federal government and provincial governments have put in place that are consistent with Florida's views. Efforts to promote the region to new Canadians, the decision by the government of New Brunswick to introduce tax incentives to encourage international university students to stay in the province after graduation, and special R&D efforts by all four provincial governments speak to the Florida agenda.

It is unlikely that Florida or anyone could possibly transform the Atlantic Canada economy over the short term. It will take time and a sustained commitment on the part of all key economic actors from government to universities and the private sector. The economic challenges confronting the region are far reaching. They are also well known: a lack of new Canadians, a relatively weak urban population, a private sector that does not invest enough in R&D, innovation, and the list goes on. The solutions? Florida points to several possibilities. They include promoting urban development. This could include special emphasis on the Halifax-Moncton corridor and St. John's. He stresses the important role universities can play in promoting economic development, particularly through their research activities.

The two senior orders of government will also need to be creative in shaping public policies to further enhance the region's attractive quality of place in order to keep and attract people. The arts and culture industries, museums and recreational facilities are all important components of a regional infrastructure setting out to attract the best and the brightest creative minds. This has not been an important part of the region's economic development strategy in the past, but it should be in the future. Infrastructure, transportation and natural resources will continue to be important as geography and location still matter to economic development in Atlantic Canada. Sensible economic development policy must, after all, build upon strengths and advantages. Even so, the region needs to take seriously Florida's view that, in future, human capital will be a critical success factor. Because workers can move from place to place, regions need to improve their liveability to

keep and draw in new talent. The new mindset is to nurture and retain highly skilled individuals. Governments should look to people climate as well as business climate. They should pursue a human capital strategy that targets methods for attracting and retaining talent, namely through education, training and immigration.

Atlantic urban areas are leaders in terms of employment and economic growth, and are already playing a central role in the growth of provincial and regional economies. The Atlantic region needs to ask what role ought the federal government to play in urban development. It goes almost without saying that what urban areas in Atlantic require for economic development will not be the same in Toronto. St. John's, Charlottetown, Halifax, Moncton, and other cities in the region will need support for infrastructure development, for marketing development and for striking new partnerships. Our cities do not have the planning capacity of a Toronto or an Ottawa. Our provincial governments, small by Ontario and Quebec standards, can hardly provide the planning support the larger provinces can to their urban areas. This is just one more reason why the four Atlantic Provinces need to establish close forms of cooperation to promote urban development. But that will not be enough. The federal government can play an important role with its own regional development programs and its ability to influence provincial governments. The federal government has in the past successfully showed the way to regional cooperation in the tourism and trade sectors. It should do so again in urban development.

The possible public policy agenda for the region contains many potential items ranging from urban development, means to promote research and development in the private sector, infrastructure development, trade promotion, tax reform, rural challenges and development, the role of universities, ways to promote innovation-based economic development, greater regional cooperation, and the list goes on. Indeed, the list is much too long and a greater sense of priority and cooperation needs to take shape. This will not happen in a vacuum or simply because it should happen. It will only happen if committed Atlantic Canadians from all corners of the region and from a variety of economic sectors come together to make it happen.

While Florida presents compelling views about economic growth, his arguments remain very hypothetical and his methodology quite questionable. Much like some of the economic theories that have come before it, the creative class theory is not a be-all and end-all approach for Atlantic Canada. One cannot base recommendations for action on the strengths of linear relationships, but one can extract several useful insights from Florida's work. The new economy is different, it tends to favour human capital over natural resources, urban areas over rural areas, and it is highly competitive and private sector driven. Communities, private firms and universities from four small provinces trying to go at it alone will not work. Atlantic Canada needs a forum where all key economic actors can come together to compare notes, network and chart an economic development course. This is the single most important item on the policy agenda and the federal government can play a leading role.

Introduction

Despite being provincial jurisdictions, cities have been the object of much attention in the federal political sphere, to the extent that “building competitive cities” has become somewhat of an economic leitmotiv for political leaders and policymakers alike. Canadian urban centres have been an off-and-on priority of the federal government for the past several decades¹. The most recent renewal of the federal government’s commitment to the urban agenda was demonstrated through the creation of the Caucus Task Force on Urban Issues in 2001. The Task Force’s final report, which was released in November 2002, clearly outlined the government’s objectives: strengthen Canada’s urban centres so that they can maintain their level of competitiveness, attract investments, and contribute to the development of their respective region². The report focused on issues where the federal government can intervene, such as the shortage of affordable housing, inadequate transportation systems, and decaying infrastructure, and led to widespread talk of a “new deal” for Canadian cities. However, the federal urban agenda fails to specifically address economic development issues. Although there is discussion about the importance of investing in infrastructure in order to sustain the growth of urban areas, little is said about the need to invest in cities wanting to instigate the growth process. For this reason, among others, critics have made the case that the Task Force recommendations are far more significant for Canada’s larger metropolitan areas³. What about smaller urban centres such as the ones in Atlantic Canada? Small and medium-sized urban regions have not warranted as much attention as their larger counterparts.

With 80% of its population living in urban centres and almost one third living in one of the three largest metropolitan areas (Toronto, Montréal and Vancouver), Canada is very much an urbanized nation. From a regional perspective, however, the demographic landscape is quite different. According to the 2001 Census, only 54% of Atlantic Canada’s population resided in urban areas. The Atlantic region’s urban centres, it should be noted, have neither the demographic weight, the economic influence, nor the political clout of the country’s major centres. In fact, the combined population of the four Atlantic Provinces (approximately 2.3 million residents) is less than that of the metropolitan areas of Toronto or Montreal, and only slightly more than the population of Vancouver. This being said, the proportion of Atlantic Canadians living in urban areas has continued to rise ever-so-slightly during the 1991-2001 period – following a global trend towards urbanization⁴. This further confirms the need to address urban areas from a public policy perspective.

¹ The federal government created the Ministry of State for Urban Affairs in 1971 in an effort to develop policy for Canada’s urban centres, but it was abolished in 1979.

² Prime Minister’s Caucus Task Force on Urban Issues, *Canada’s Urban Strategy: A Blueprint for Action* (Ottawa: Prime Minister’s Task Force on Urban Issues, November 2002).

³ J. M. Wolfe, “A National Urban Policy for Canada? Prospects and Challenges”, *Canadian Journal of Urban Research* 12, 1 (2003): 11.

⁴ In 1991, 51% of Atlantic Canada’s population lived in urban areas, compared to 54% in 2001.

With people and jobs converging upon them, urban centres are often described as engines of economic growth. The advent of globalization and the shift to a knowledge-based economy have had a resounding impact on the spatial distribution of economic activity, and the role of cities has been reinforced as a result of these new circumstances. In Atlantic Canada, urban agglomerations will be called upon to play an even greater role in order for the region to adapt to the requirements of the new economy and compete with the rest of the country. According to a recent analysis, "if Atlantic Canada wants to succeed, it must turn its attention to some new parameters of growth such as strengthening the capacity of the region's larger urban areas to provide a base for the high quality jobs associated with the knowledge economy...⁵".

The topic of urban-rural dynamics is both complex and sensitive. Should one type of region flourish at the expense of the other? The recent attention given to the strengthening of urban regions begs the question whether rural areas will still matter in the 21st century. This report will certainly not attempt to diminish the importance of vibrant rural communities, yet it will emphasize the benefits of having strong and viable urban centres in Atlantic Canada. Ultimately, rural and urban regions should be viewed as interconnected and interdependent in such a way that the growth of urban regions does not constrain the opportunities of rural communities. In a recent article, J. Simmons and L. S. Bourne envisioned a Canadian urban system where "the winners... will be those urban places, and their immediate hinterlands (or zones of influences), that are larger, are plugged into the continental and global economy, are the destinations of immigration flows, have younger and more diverse populations, proximity to certain environmental amenities, and have reasonable access to high-order public goods and services⁶." Simmons and Bourne's line of thinking is very prevalent in both academic and policy circles, and it holds significance not only for Canada, but for most regions in the industrialized world. Urban centres which once used to focus and thrive on regional and/or national economic relationships are now part of complex global networks. Macro-level forces are reshaping the organization of economic space and human settlement patterns, and Atlantic Canada is no exception.

Given the realities brought forth by the new economy and continental and global integration, economic development is more than ever linked to a region's capacity for innovation and creativity. In his ground-breaking book *The Rise of the Creative Class*⁷, American researcher Richard Florida argues that creativity and diversity are the basis of economic growth and that they constitute a competitive advantage in the current economic context. Florida's creative class theory has influenced several political and policy leaders throughout North America, Europe and Oceania, yet his work has not been acclaimed by all. There are probably as many skeptics about his views as there are supporters. The creative class theory is essentially an urban development theory with Florida's initial laboratory consisting of large U.S. metropolitan areas. It is also a knowledge

⁵ Atlantic Provinces Economic Council (APEC), *An Agenda for Growth and Prosperity in Atlantic Canada* (Halifax: APEC, 2004), 17.

⁶ J. Simmons and L.S. Bourne, "New fault lines? Recent trends in the Canadian urban system and their implications for planning and public policy", *Canadian Journal of Urban Research* 12, 1 (2003): 23.

⁷ R. Florida, *The Rise of the Creative Class, And How It's Transforming Work, Leisure, Community and Everyday Life* (New York: Basic Books, 2002).

economy theory that argues that quality of place matters. Quality of place is most notably improved by the arts and culture as well as lifestyle and recreational amenities.

In light of the current socio-economic context, new strategies will be needed to steer the future economic development of Atlantic Canada and its urban areas. Is the creative class theory relevant for smaller and mid-size urban centres? If so, a number of policy questions arise. More important, is it relevant to Atlantic Canada's urban centres? Should economic policy and programs be centred on attracting human capital rather than private enterprise? Do quality of life and the presence of a creative workforce foster economic development? How can Atlantic Canada's urban centres become more competitive on the national and international stage? This report seeks to answer such questions.

The proposed study will review the Florida approach, and assess how the theory applies to the case of four of Atlantic Canada's leading urban centres: St. John's, Charlottetown, Halifax and Moncton⁸. We have deliberately chosen one urban centre per province and each is considered to be an economic leader of its province. Our intention was not to exclude other regional urban centres. Policy recommendations emerging from this report will be relevant for all urban regions within Atlantic Canada. More specifically, the study has three broad objectives. The first is to put demographic and economic trends in Atlantic Canada's urban centres in relation to the regional and national context. The second is to take stock of and profile the creative workers in Atlantic Canada's major urban centres and assess the opportunities and limitations of Florida's creative class theory. The third objective is to make policy recommendations relating to the economic development of Atlantic Canada, and its urban centres in particular.

The analysis of quantitative statistical data, mostly from Statistics Canada, is complemented by qualitative information gathered through interviews with 26 local and regional development officers, municipal stakeholders as well as representatives from the arts and culture community who contribute to quality of place. Five sections make up this report. The first reviews the concepts upon which this study is built. In addition to the fundamentals of the creative class theory, we attempt to shed light on the role of culture and quality of place in economic development. Section 2 presents an overview of Atlantic Canada's economy, with a particular focus on its major urban centres, from the perspective of population dynamics and labour force and employment structure. This section puts the Atlantic region's development in relation to national averages, and the development of Atlantic Canada's urban centres in relation to provincial and regional averages. The third section measures the creative economy in Atlantic Canada's major urban centres based on the indexes developed by Richard Florida and presents correlations between such variables as diversity, creative and educated workers, concentration of high-tech activity, and average incomes. The fourth section gives voice to local and regional development officers, municipal stakeholders, and representatives of the arts and culture community, highlighting as it does the results of our interviews. Among other issues, interviewees were asked to comment on the creative class

⁸ This includes the adjacent municipalities situated around the urban core.

approach and on making Atlantic Canada's urban centres competitive. Finally, the last section is devoted to policy recommendations for the region.

I

Creativity as an engine of growth in urban centres

A new theory of economic growth: Richard Florida's creative class theory

The language of economic development is constantly evolving. New concepts crop up periodically, and "creative economy" is one of the latest. Indeed, a new wave of researchers is suggesting the passage from an industrial and more conventional economy to a creative economy. J. Howkins writes that "creativity is not new and neither is economics, but what is new is the nature and extent of the relationship between them, and how they combine to create extraordinary value and wealth⁹." Creativity is often considered an abstract concept, but it can be simply defined as "the ability to create something new¹⁰", whether it is the production of ideas, products, services, processes, or other. Creativity encompasses all forms of activities which rely on innovation and research and development (R&D) in diverse fields such as the natural sciences, engineering, computer science, communications, finance, arts and culture, and health. Today, creativity is hailed as a precursor to the innovation process and a catalyst for economic growth. In short, Florida's theory is the following: economically successful cities are those which are able to attract creative and talented individuals. In the future, a city-region's economic and social success will rely on its intellectual and creative capacities.

Richard Florida has contributed greatly to this new wave. His theory on the role of creativity and diversity in economic growth outlined in *The Rise of the Creative Class* provides food for thought about the future of urban centres in the new economy. Using concepts such as the creative economy and the creative class, Florida argues that creativity and diversity are at the root of regional economic growth and that these two elements constitute a competitive advantage in the context of the new economy. His theory can be summarized as such: a city-region that promotes creativity and diversity and offers a good quality of life will attract talented individuals – members of the creative class – and innovative firms. As a consequence, the presence of a creative class and its talents become "a key intermediate variable in attracting high-tech industries and generating higher regional incomes¹¹." Extremely mobile, versatile and creative workers have both the flexibility and the desire to settle in regions that correspond to their aspirations and lifestyle.

Florida's regional economic development theory contradicts classic theories in the sense that he considers that individuals do not follow jobs, but firms (especially high-tech firms) establish themselves in regions around which creative individuals gravitate. His definition of creative class is

⁹ J. Howkins, *The Creative Economy: How People Make Money From Ideas* (London: Allen Lane/Penguin Press, 2001), viii.

Howkins indicates that the creative economy has grown at a swift rate: "Its annual growth in the OECD countries through the 1990s was twice that of the service industries overall and four times that of manufacturing overall." (xvi).

¹⁰ *Ibid.*, ix.

¹¹ R. Florida, "The Economic Geography of Talent", *Annals of the Association of American Geographers* 92, 4 (2002): 743.

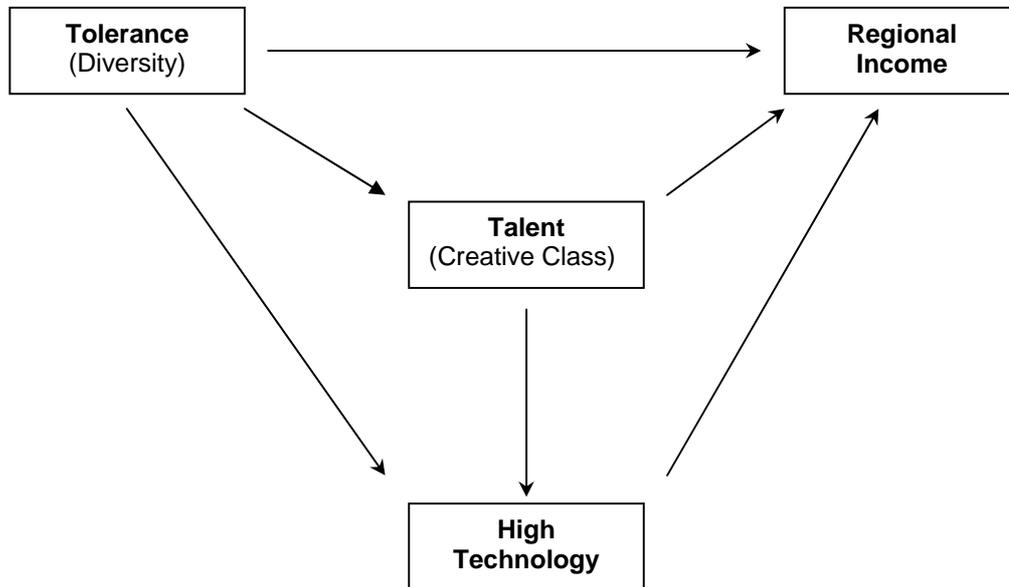
wide-ranging, including a breadth of professionals such as artists, architects, engineers, lawyers, scientists, professors, researchers, etc. In brief, the creative class includes workers who innovate and who are at the basis of fresh ideas, new technologies and creative content. Unlike other classes of workers (such as blue-collar workers and service-sector employees), creative workers' assets lie in their ability to think and to work independently. They are also regarded as a very mobile group. The fact that they generally have a highly sought-after skill set provides them the flexibility to choose where they want to live and work. According to Florida, the creative class is emerging as a true force in the North American and European economies. Based on 2001 Census data, this group of workers represents approximately one quarter of the total Canadian workforce, compared to one third in the United States.

Following Florida's assumption, innovation and economic growth in a city-region are directly proportional to its openness to creativity and diversity. His theory is founded on what he refers to as the "3 Ts" of economic development. These are talent (the percentage of the population with a university degree), tolerance (the percentage of the population born outside the country) and technology (the percentage of jobs in the high-tech sector). Florida regards these three elements as essential in attracting creative individuals, prompting innovation, and bolstering regional growth. The dynamics of these relations are expressed in Figure 1, which illustrates the effect of the 3 Ts on regional income. In essence, Florida suggests that the success of economic development efforts in any given region depends to a very large extent on the *rappor*t between these three elements. The 3 Ts help to explain how a region's growth occurs and to identify the factors which influence growth. Florida and his Canadian colleagues developed the following variables to measure the performance of Canadian regions¹²:

- Talent index: a measure of human capital based on the percentage of the population with a bachelor's degree or higher.
- Bohemian index: a measure of the employed labour force that works in artistic and creative occupations.
- Mosaic index: a measure of foreign-born population.
- Tech pole index: a measure of high technology activity.

¹² Florida's variables were initially designed for the study of U.S. regions. Comparable measures were established for Canada for the first time in M. Gertler *et al.*, *Competing on Creativity: Placing Ontario's Cities in North American Context* (Toronto: Ontario Ministry of Enterprise, Opportunity and Innovation and the Institute for Competitiveness and Prosperity, 2002), 3-4. Sources and methods for calculating these measures will be explained in greater detail in Section 3.

Figure 1
Structure of the relationship between technology, tolerance and talent



Source: R. Florida, "The Economic Geography of Talent", *Annals of the Association of American Geographers* 92, 4 (2002): 745.

Economists have long recognized the important role played by technology and human capital in the economic growth of regions. Technology and human capital are seen as basic factors of production, much like raw materials. According to this view, all regions are stocked with technology and creativity, but at varying rates. Innovation and economic growth generally tend to occur in those areas where there is a greater concentration of high tech activity and creative talent. On the other hand, contrary to the more traditional factors of production, technology and talent are highly mobile resources which are able to privilege one area in favour of another. The originality of Florida's theory lies in the introduction of a new variable into the regional economic growth equation, this one being tolerance. Defined as the openness to diversity (immigrants, artists, gays and lesbians, etc.), tolerance helps to mobilize both talent and technology. Using correlations, Florida's research reveals that city-regions with a high level of tolerance are more likely to attract and capture high tech activities and a pool of creative workers¹³.

Florida suggests that we are entering a new economic era where creativity and diversity constitute the engines of economic development. His research emphasizes the fact that members of the creative class are attracted to diversified city-regions in terms of the make-up of their population

¹³ It should be reiterated that correlations do not express causality. R. Florida, "The Great Creative Class Debate: Revenge of the Squelchers", *The Next American City*, 5 (2004); Internet: www.americancity.org/article.php?id_article=39.

(ethnic origin, sexual orientation, etc.) and well-stocked in terms of cultural and leisure amenities. Members of the creative class generally choose a location that fits their lifestyle and their interests. In fact, "quality of place" has become a determining factor in their location choice, whether this means they are seeking a vibrant artistic and cultural scene, outdoor amenities such as bike and hiking trails, an array of eclectic bars and restaurants with live entertainment, or other¹⁴. High tech firms, in turn, are attracted to city-regions around which a pool of highly qualified and talented workers gravitates.

Florida does not support the view that the concentration of artists in a given geographic area will prompt regional economic growth; rather he advocates that their presence in great numbers is an indicator of the existence of an underlying culture conducive to creativity. Economic growth will become a product of the creative class and city-regions which are able to attract and exploit talent will be more successful. A recent study also reveals that there is a strong relationship between the level of entrepreneurship and a creative environment. Florida and his collaborators demonstrate a strong correlation between the start-up of firms and the levels of creative talent. Moreover, they show that the concentration of human capital encourages entrepreneurial spirit¹⁵.

The view that creativity spawns innovation and prompts technological change is being embraced by economists and policymakers alike. For example, the creative economy is the object of a major initiative in New England. Driven by representatives from the public, private, artistic and university sectors, this regional strategy places the creative economy at the heart of economic development efforts in New England¹⁶. In fact, Florida's research has swayed many municipal leaders in North America as well as in Europe, and has influenced several local and regional economic development strategies. Toronto, Montréal, Kingston, Winnipeg and Halifax are among the Canadian municipalities having already climbed aboard the creative class bandwagon. The creative city concept is appealing to academics and policymakers who feel that creativity leads to innovative environments which subsequently lead to economic prosperity. It has even inspired the establishment of a national organization called The Creative City Network. This network is a place where municipal stakeholders from all over Canada come together in an effort to bring the cultural dimension to the forefront of economic and social development efforts.

In November 2002, Florida, along with three colleagues, prepared "Competing on Creativity: Placing Ontario's Cities in North American Context" for the Ontario Ministry of Enterprise, Opportunity and Innovation and the Institute for Competitiveness and Prosperity. The report's title is somewhat misleading in that the research team's analysis sheds light on all of the Canada's major city-regions and not only Ontario's. This report, based on 1996 Census data, demonstrated

¹⁴ R. Florida, *Competing in the Age of Talent: Quality of Place and the New Economy* (Pittsburg: R. K. Mellon Foundation, Heinz Endowments, and Sustainable Pittsburg, 2000), 44.

¹⁵ S. Y. Lee, R. Florida and Z. J. Acs, "Creativity and Entrepreneurship: A Regional Analysis of New Firm Formation", *Regional Studies* 38, 8 (2004): 879-891.

¹⁶ The New England Council, *The Creative Economy Initiative: The Role of the Arts and Culture in New England's Competitiveness* (Boston: The New England Council, 2000).

that Canadian metropolitan areas which were hotbeds for the arts and immigration were also hotbeds for technology-based industry. The explanation is the following: these city-regions “appear to attract, and galvanize, the people who are crucial to economic success: creative workers, the engineers and scientists who develop new products and industrial processes, and the creative businesspeople, financiers and other workers who play lead roles in the game of starting new businesses and improving the old¹⁷.”

Others tend to be more cynical vis-à-vis such an approach, especially when dealing with socio-economically disadvantaged regions – a category to which the Atlantic region arguably belongs. Deeming the approach more utopian than practical, one author writes: “does it really make sense for an employment-depressed region to focus, at the expense of job creation, on amenity strategies that appeal to knowledge workers? [...] An economic development strategy that focuses on upgrading amenities alone harkens back to the business-park strategies of the 1970s and 1980s, which brought into the old adage ‘if we build it, they will come’¹⁸.” This leads to the classic chicken-and-egg question ensuing from Richard Florida’s writings: does urban economic growth attract creative and skilled workers, or do creative and skilled workers attract urban economic growth?

To be sure, strengthening the creative capacity and eliminating the barriers to diversity cannot be expected to cure all urban ills, neither in Atlantic Canada nor anywhere else. Besides, the creative class theory developed by Florida and disseminated by his disciples is hardly embraced by all. Several economic development and urban development theorists and practitioners have voiced serious reservations as to its worth. Doubters describe Florida’s views as elitist daydreaming, or self-proclaimed prophecies. In the United Kingdom, explains one observer, various decision-makers have espoused economic development strategies built on creative industries and the creative class with little or no regard for the particularities of each region, or the distinctive composition of the existing labour force: “All regions are pursuing the same culture/knowledge-based economic development strategy despite the evidence that their human capital stock cannot support it and they will have difficulty in the short and medium term in attracting or retaining the kind of workers on which these economies depend¹⁹.” This raises the point that economic development strategies, policies or programs cannot be designed in a vacuum. A strategy based on or inspired by the creative class approach should not be dissociated from the existing economic, social or cultural fabric of cities. Doing otherwise would be illusive.

Closer to home, a Canadian Heritage-sponsored report echoes the above view. Its authors find it paradoxical that a culturally-charged environment be considered a powerful means of attracting creative workers while most of the artists to whom we owe this vibrancy live below the poverty line. It is just as inconsistent to advocate diversity in our urban centres while not providing adequate

¹⁷ R. Florida and M. Gertler, “Cities: Talent’s Critical Mass”, *The Globe & Mail*, January 3, 2003.

¹⁸ B. Donald, “Competitiveness and Quality of Life in City Regions: Compatible Concepts?” (Montréal: Paper presented at the Canadian Association of Geographers’ Annual Meeting, 2001), 10.

¹⁹ K. Oakley, “Not So Cool Britannia: The Role of the Creative Industries in Economic Development”, *International Journal of Cultural Studies* 7, 1 (2004): 73.

resources (human and financial) for the integration of international immigrants²⁰. The same logic could apply to praising the virtues of postsecondary education and training of a highly skilled workforce while failing to address the grave student debt load problems. On another level, an economic growth strategy built around the creative workforce raises some concerns as to the widening of the wage gap between high income, highly specialized and skilled workers and low income, less skilled workers. Such inequities could jeopardize the sound and sustainable development of urban centres.

Florida's views seldom leave individuals indifferent. His writings have prompted debates around the relevance of creativity, diversity and quality of life for the economic development of our urban centres. If creativity is now a regular part of urban planners' and local politicians' vocabulary, it is in large part due to Florida's ability to market and promote his theory. Some critics argue that Florida's theory only detracts our attention from the "real" issues and challenges facing North American cities, such as urban sprawl, aging infrastructure, intermunicipal competition, downloading of responsibilities, housing, and fiscal constraints.

Though the concept of a creative city or region is relatively new, it is at the core of a growing number of economic strategies, even within the Atlantic region. In the span of a few months in late 2005, both Halifax and Moncton released their respective economic strategy. Both make reference to Florida's theory and the need to embrace at least some elements of it. Clearly, the shift from an industrial economic base to one that is knowledge-based warrants a different approach. Throughout his research process, Florida was guided by two fundamental questions: the first is "how do regions grow?", and the second is "what drives that growth?". In the subsequent sections of this report, we will attempt to see if and how his conclusions – which are the basis of *The Rise of the Creative Class* – resonate in Atlantic Canada.

Culture, quality of place and economic development

Florida's creative class theory is first and foremost a regional economic development theory, not a cultural development theory. Since it favourably references the importance of a vibrant cultural milieu, several cultural sector advocates and stakeholders have embraced Florida's views. Yet creativity, culture and quality of place are often mentioned in the same breath by Florida as well as cultural sector advocates. In large part because of the popular success of his academic research, terms such as "creative cities" and "creative economy" have found their way into economic development and urban planning jargon.

In parallel to Florida's research, a growing body of reports and articles has emerged on the contribution of culture and quality of place to economic development of urban centres. According to

²⁰ B. Donald and D. Morrow, *Competing for Talent: Implications for Social and Cultural Policy in Canadian City-Regions* (Ottawa: Department of Canadian Heritage, 2003), 8-11.

a National Governors' Association report in the United States, the cultural sector is emerging as a driver of economic life in cities and urban areas because of its major direct and indirect contributions to regional economies. The authors claim that a vibrant cultural life has several positive spin-offs. Besides generating income, jobs and tax revenue, cultural vitality increases a city-region's visibility²¹. An attractive, culture-friendly community can attract residents, investors, and tourists. Although the presence of cultural institutions does not guarantee a community's economic growth, recent observations seem to suggest that investments in culture increase the chances of success of an economic development strategy²².

In 2002, the Canada West Foundation, a Calgary-based public-policy research organization serving the western provinces, released a discussion paper on links between culture and economic competitiveness. The report encourages an urban economic development approach that integrates arts and culture: "Arts and culture may be a tool for western Canada's cities to improve quality of life, and to enhance creativity and innovation in their economies. Arts and culture may also be a tool for western Canada's cities to brand themselves, to attract skilled workers, and to increase global competitiveness²³." Using statistical analyses to back up their findings, a group of University of Minnesota researchers show the positive influence of the arts on regional economic growth in a case study of Minneapolis and St. Paul, Minnesota. Empirical evidence shows that the concentration of artists contributes to growth in productivity and regional income, private sector investments and innovation²⁴.

In 2004, the Canadian Policy Research Network, whose mission is to create knowledge and public debate on social and economic issues important to the well-being of Canadians, launched four publications under the creative cities theme. These reports expand on the links between creativity and knowledge economy activities. Prominent University of Toronto professor Meric S. Gertler affirms that creative cities "play an ever more important role in enhancing the dynamism, resilience, and overall competitiveness of our national economy. They do this by enhancing the innovativeness of individual workers, firms, and other organizations that comprise our urban regions. With the widely acknowledged shift to a knowledge-based or learning economy, creative cities have become the key locus for the creation of economic value by supporting innovation, resilience and quality enhancement²⁵." The Canadian Policy Research Network's series certainly helped to accentuate the extraordinary potential offered by the exploitation of creativity. At the

²¹ National Governors' Association, *The Role of the Arts in Economic Development* (Washington: NGA Center for Best Practices, 2001), 1.

²² E. Strom, *Strengthening Communities Through Culture* (Washington: Center for Arts and Culture, 2001), 24-25.

²³ J. Azmier, *Culture and Economic Competitiveness: An Emerging Role for Arts in Canada* (Calgary: Canada West Foundation, 2002), 9.

²⁴ A. Markusen and D. King, *The Artistic Dividend: The Arts' Hidden Contributions to Regional Development* (Minneapolis: Humphrey Institute of Public Affairs, University of Minnesota, 2003). An updated report further corroborates the conclusions of this initial study. See A. Markusen, G. Schrock and M. Cameron, *The Artistic Dividend Revisited* (Minneapolis: Humphrey Institute of Public Affairs, University of Minnesota, 2004).

²⁵ M. Gertler, *Creative Cities: What Are They For, How Do They Work, and How Do We Build Them?* (Ottawa: Canadian Policy Research Network, 2004), 1.

same time, it also underlined the lack of awareness and understanding among the general public and upper levels of government as to the true potential in tapping the creativity of Canadian communities.

Cultural products have positive effects on society as a whole. According to the economic concept of positive externality, cultural activities generate spin-offs that both maximize national welfare and produce economic advantages for the country as a whole. Jeff Dayton-Johnson, former professor of Economics at Dalhousie University, further states that the spin-offs from a healthy culture sector have social and economic repercussions on all of society²⁶. The attention paid to arts and culture by political decision-makers and society in general has greatly increased during the last decade. For the most part, they acknowledge how culture contributes to quality of life and the economy. Today the cultural sector and the creative industries participate fully in the new economy and can no longer be considered marginal. They make best use of creativity, innovation, knowledge, and new technologies. Moreover, creative industries "form part of the necessary infrastructure of a modern region, helping to attract and retain investors, skilled workers, and students [and] can help draw attention to the region, increasing the region's mindshare in the national and international consciousness²⁷."

Now that we have gone over some of the basic theoretical and conceptual underpinnings of the creative economy and the creative class, we turn our attention to comparative contextual data which puts Atlantic Canada's selected urban centres' demographic and economic situation in relation to the region as whole and to the national average. The subsequent section will illustrate how St. John's, Charlottetown, Halifax and Moncton have grown and performed over the years, and to what extent they have been at the heart of economic and demographic growth within their respective province and the overall region.

²⁶ J. Dayton-Johnson, *What's Different About Cultural Products?: An Economic Framework* (Ottawa: Department of Canadian Heritage, 2000), 17.

²⁷ D. Coish, *Census Metropolitan Areas as Culture Clusters* (Ottawa: Statistics Canada, 2004), 10.

II

Overview of Atlantic Canada's economy: the regional context

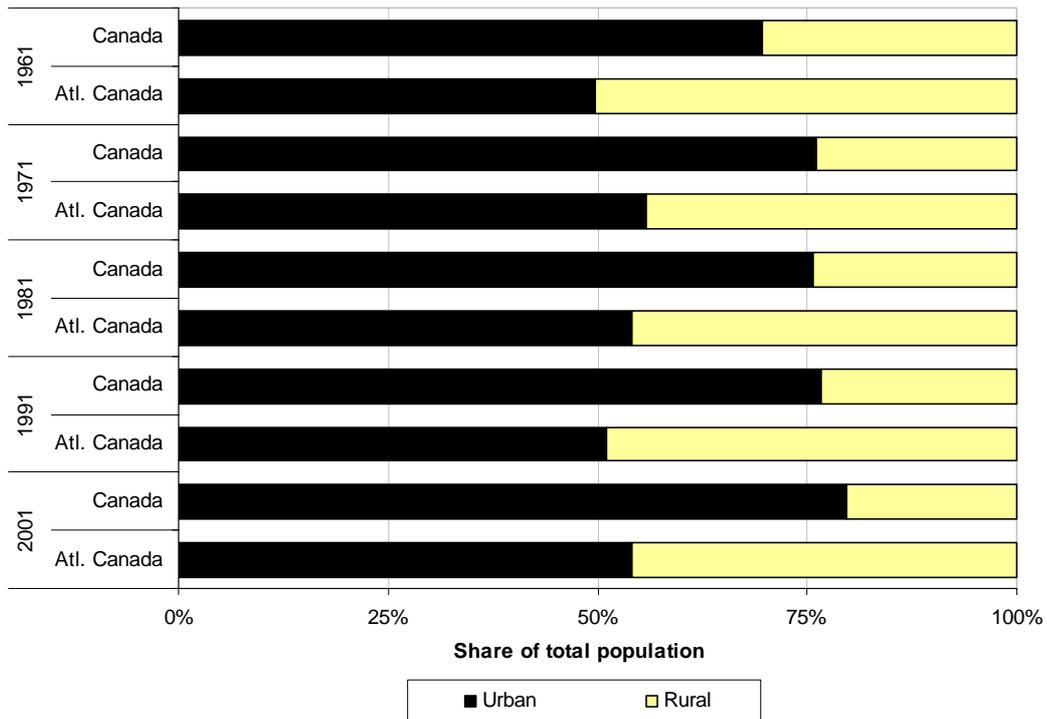
Population dynamics

According to 2001 Census data, Atlantic Canada's population totalled 2.3 million residents, or 7.6% of the country's population. The proportion of rural residents in the Atlantic region was significantly higher than the national average. In 2001, 46% of Atlantic Canadians lived in rural areas compared to 20% for the whole of Canada. On average, 54% of Atlantic Canadians lived in urban areas with all other provinces recording an urban population greater than 60%. However, the trends observed in the last few Census exercises indicate that the residents of Atlantic Canada are increasingly converging towards urban areas²⁸.

By international standards, the Atlantic region clearly lacks any urban centre of substantial size. The largest metropolitan area is Halifax, ranked 13th in the country in terms of population size in 2001 (359,183). St. John's was second in the region and 19th in Canada with a population of 172,918. The third highest was Saint John, N.B. at 122,678. The bottom line is that Atlantic Canadian urban centres have neither the demographic weight, nor the population density, nor the economic influence on the national or international scale. Moreover, important economic disparities separate the Atlantic Canada region from the rest of Canada. Historically, the population of the Atlantic Provinces has always been overwhelmingly more rural than that of other regions of Canada. In 1961, 50% of the region's total population lived in rural areas compared to 30% at the national level. As Canada has become increasingly urbanized throughout the decades, little has changed in the case of the Atlantic Provinces: in 2001, its share of rural population had declined to 46% while Canada's fell to 20%. Figure 2 shows the urban and rural population shifts within the Atlantic region in comparison to the national average.

²⁸ One should keep in mind that we are using Statistics Canada's definition of urban and rural areas, where urban areas are geographic units having a minimum population concentration of 1,000 persons and a population density of at least 400 persons per square kilometre. Meanwhile, rural areas include all territory lying outside urban areas.

Figure 2
 Urban and rural populations as a share of total population, Atlantic Canada
 and Canada, 1961-2001



Source: Statistics Canada, 1961, 1971, 1981, 1991, 2001 Census.

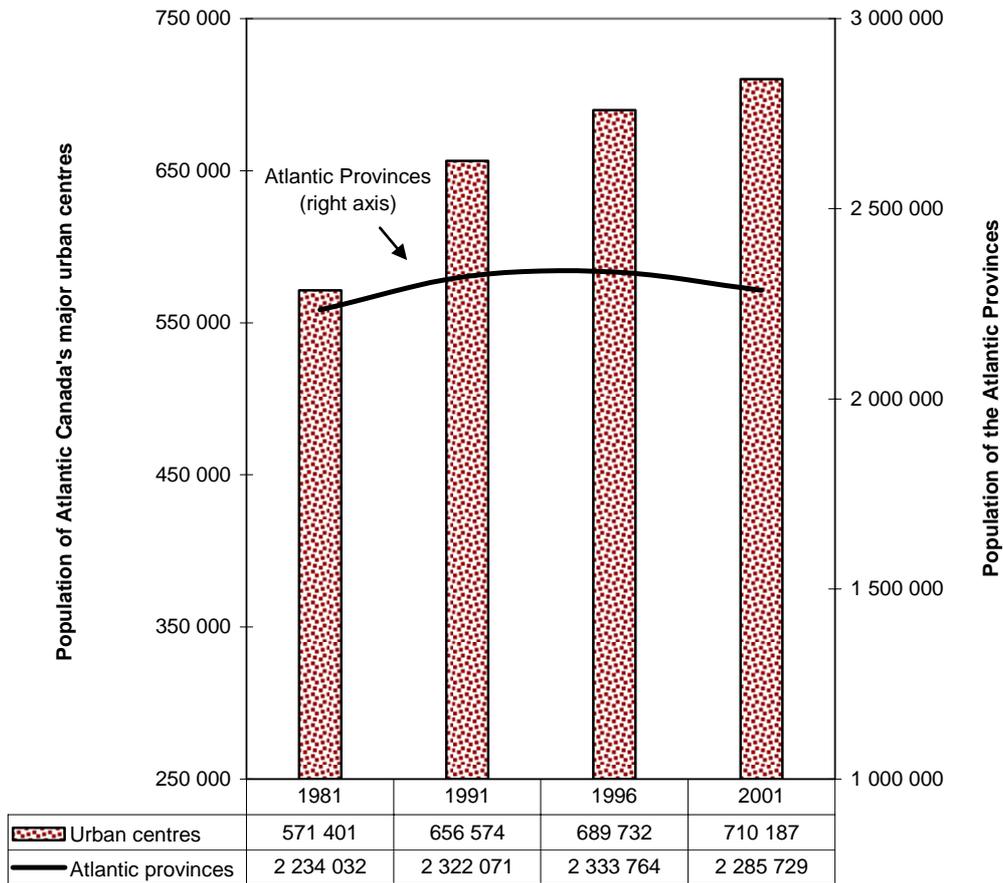
Canada's most urbanized areas are designated Census Metropolitan Areas (CMAs). They are formed by one or more adjacent municipalities centred on a large urban area of at least 100,000 population. Canada's 27 CMAs are home to approximately two thirds of the country's population (64%). Only three CMAs are located in Atlantic Canada: Halifax, St. John's, and Saint John²⁹. For the purpose of this study, we have chosen to limit our analysis to one major centre in each of the Atlantic Provinces. We will therefore focus on what are commonly considered Atlantic Canada's four leading urban centres. These are St. John's, Charlottetown, Halifax and Moncton. Charlottetown and Moncton are Census Agglomerations (CAs) which are conceptually similar to CMAs except for the fact that these geographic areas have a smaller urban core (from 10,000 to 99,999). For the purpose of this study, any reference to "Atlantic Canada's major urban centres" designates the four above-mentioned cities.

²⁹ Following revisions to the criteria for defining census metropolitan areas, Moncton will be added as a CMA for the 2006 Census.

Between 1991 and 2001, the overall population of Atlantic Canada declined by 1.6%, compared to an average national increase of 9.9%. The regional decline stems from the significant out-migration of workers formerly living in Newfoundland and Labrador, the only Atlantic province to register a decline in its population during the period (-9.8%). The other provinces' increase was nevertheless significantly lower than the national average: 4.3% in Prince Edward Island, 0.9% in Nova Scotia, and 0.8% in New Brunswick. During the same period, the Atlantic region's four selected urban areas registered population increases. Albeit a somewhat meagre increase in the case of St. John's (0.6%), Halifax's 12.1% population growth was well above the Canadian average of 9.9%. At 9.6%, Moncton's population growth was just below the national average, followed by Charlottetown at 6.5%. Collectively, these four urban regions accounted for 31% of Atlantic Canada's total population in 2001. Figure 3 illustrates the progressive population increase in the four urban regions under review since 1981 in relation to the rather constant population in the Atlantic Provinces. In point of fact, a recent report stated that urban regions in Atlantic Canada appear to be inclined to grow at a more rapid rate than other communities: "Generally speaking, either being a metropolitan area or being adjacent to one was a condition of population growth³⁰." In descending order by population size, our four municipalities ranked in the following order according to 2001 Census data: Halifax (359,183), St. John's (172,918), Moncton (117,727), and Charlottetown (58,358).

³⁰ P.-M. Desjardins, *A Socio-Economic Profile of Atlantic Canada: Characteristics of Rural and Urban Regions, with Implications for Public Policy* (Moncton: Canadian Institute for Research on Regional Development, 2005), 33.

Figure 3
Population trends in Atlantic Canada and in its major urban centres, 1981-2001



Source: Statistics Canada, 1981, 1991, 1996, 2001 Census.

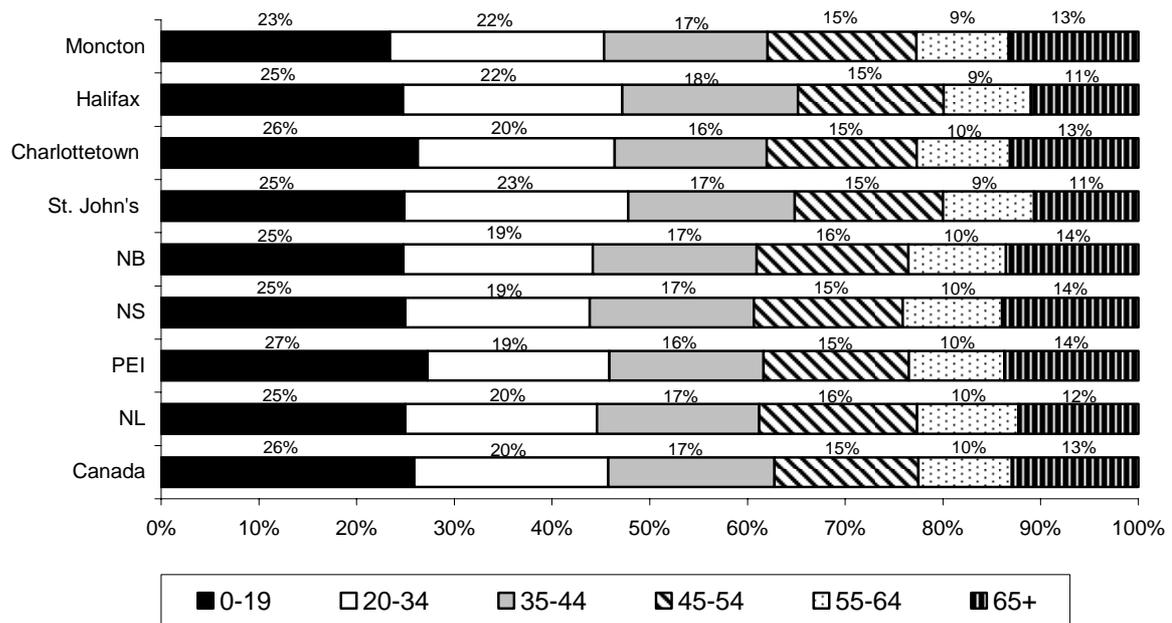
With the exception of Moncton, the urban areas which are the focus of our attention represent an important share of their respective province's overall population. Over the last two decades, Halifax has increased its share of Nova Scotia's total population. In 2001, the city was home to about 40% of all Nova Scotians. Meanwhile, approximately 43% of Prince Edward Island's population lived in Charlottetown, 34% of Newfoundland and Labrador's population resided in St. John's and only 16% of New Brunswick's population made Moncton their place of residence. New Brunswick is indeed the exception in the context of Atlantic Canada in the sense that it is the only province to have three urban regions of significant size. Together, Moncton, Saint John and Fredericton account for approximately 44% of New Brunswick's population. Although Saint John was the most populated city in the province in 2001 with 122,678 residents, its population has decreased by 2.5% since 1991 compared to a 9.6% increase for Moncton during the same period. The greater

Moncton area is commonly considered the fastest growing New Brunswick urban area, both from an economic and a demographic perspective³¹.

a) Population by age groups

In general, the population of Atlantic Canada is older than the national average, with all four provinces having a superior proportion of their population in the 65 years and older age group in 2001. Meanwhile, the region had a smaller proportion of its population in the 0-19 and 20-34 age categories than the Canadian average (see Figure 4). The analysis of the region's major urban centres reveals a slightly different demographic makeup than that of Atlantic Canada as a whole. Collectively, they had a higher proportion of their population in the 20-34 age group, and a lower proportion of individuals in the 55-64 and 65+ categories. This supports the findings of a recent report on urban and rural dynamics in Atlantic Canada which states that "metropolitan regions are generally slightly 'younger' than rural regions³²."

Figure 4
Distribution of population by age groups in Canada, Atlantic Canada and selected urban areas, 2001



Source: Statistics Canada, 2001 Census.

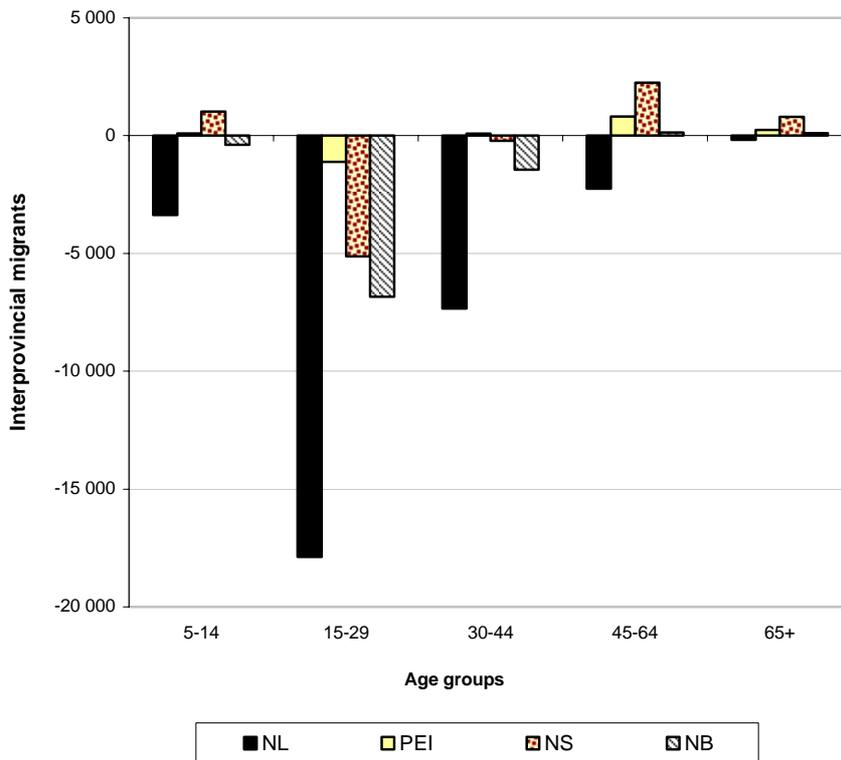
³¹ This is in large part due to the growth of the adjoining municipality of Dieppe which is included in the Moncton Census agglomeration.

³² P.-M. Desjardins, *A Socio-Economic Profile of Atlantic Canada*, 36.

b) Interprovincial migration

The Atlantic region has consistently lost population due to interprovincial migration for the last several decades and, in turn, has received very few in-migrants from elsewhere in Canada. This phenomenon is not strictly an Atlantic one, as all Canadian provinces with the exception of Alberta and British Columbia have consistently recorded net migration losses. Atlantic Canada's net interprovincial migration was negative between 1996 and 2001, standing at -40,575. During the period, Newfoundland and Labrador lost approximately 47,100 individuals and gained about 16,000 for a net loss of 31,000. Prince Edward Island registered the only gain in Atlantic Canada, with a net migration of 135 people (inflow was about 7,905 and outflow was 7,770). In Nova Scotia, in-migrant population totalled close to 53,000 and out-migrants accounted for 54,300, for a net loss of about 1,300 individuals. Lastly, in New Brunswick, about 32,600 people moved into the province while about 41,000 left, which represents an overall population loss of close to 8,400. The provincial breakdown by age group is shown in Figure 5. It reveals a startling loss of young adults in the 15-29 age category, particularly in Newfoundland and Labrador.

Figure 5
Net interprovincial migration in Atlantic Canada, by age group, 1996-2001



Source: Statistics Canada, 2001 Census.

c) Immigration

Atlantic Canada as a whole has had very little success in attracting international immigrants to the region. According to 2001 Census data, less than 1.5% of all immigrants living in Canada chose one of the four Atlantic provinces as their place of residence. Of the approximate 76,000 foreign-born persons who were counted in the region in 2001, 54% resided in Nova Scotia, 30% in New Brunswick, 11% in Newfoundland and Labrador, and 5% in Prince Edward Island.

Table 1
Foreign-born population in Atlantic Canada and its major urban centres
by period of immigration, 2001

	Immigrant population 2001	Period of immigration					
		Bef. 1961	1961-1970	1971-1980	1981-1990	1991-1995	1996-2001
Newfoundland and Lab.	8 030	1 635	1 510	1 700	1 165	880	1 130
St. John's	4 885	800	965	935	790	570	825
Prince Edward Island	4 140	1 155	645	960	585	305	485
Charlottetown	2 200	595	405	520	200	105	380
Nova Scotia	41 315	9 555	7 060	8 140	6 275	4 545	5 745
Halifax	24 390	4 480	3 905	4 470	4 025	3 070	4 435
New Brunswick	22 465	5 385	3 845	5 565	3 275	1 825	2 570
Moncton	3 360	885	495	975	390	220	400

Source: Statistics Canada, 2001 Census.

St. John's, Charlottetown and Halifax attracted the bulk of immigrants in their respective provinces (61%, 53% and 59% respectively). Moncton, on the other hand, was home to only 15% of New Brunswick's total immigrant population. Table 1 details the foreign-born population by period of immigration. It reveals the arrival of very few new immigrants since the 1990s. On average, three out of four foreign-born residents in the Atlantic region arrived before 1990. In Canada as a whole, approximately two-thirds of foreign-born residents arrived prior to 1990.

Labour force and employment structure

The changing age structure of the population will have implications for the growth of Atlantic Canada's economy in the decades ahead. As fertility rates drop throughout Canada, there will be fewer and fewer individuals entering the workforce. Recently, Statistics Canada projected that senior citizens aged 65 years and over will outnumber children under the age of 15 years in approximately ten years³³. Considering that the future pace of economic growth depends on the rate at which the workforce grows and on the growth of output per worker, this will be one of the

³³ Statistics Canada, *The Daily*, December 15, 2005.

region's foremost challenges. According to 2001 Census data, just over half of Atlantic Canada's labour force (52%) are baby boomers, meaning that they were born between 1946 and 1965, and were aged 36 to 55 in 2001. Their share of the labour force was slightly lower in Atlantic Canada's major urban centres (49%). The demographic shift will result in a large increase in the 65 years and older group and a decline of the 20 to 64 age group. The older baby boomers are fast approaching or have attained the official retirement age. As more baby boomers retire from the labour force, one of the challenges for governments and private-sector businesses will be to maintain a viable labour market. Unsurprisingly, a great deal of emphasis is being placed on the attraction and retention of young, skilled workers that will be called upon to fill the impending labour shortage triggered by retiring baby-boomers.

The ageing of Atlantic Canada's labour force is a cause for concern. In the four Atlantic Provinces between 1996 and 2001, the percentage of older workers in the labour force increased at the same time as younger worker percentages decreased (see Table 2). Atlantic Canada recorded a significant decline in the proportion of workers in the 15-24 age category. Most Canadian provinces are struggling with the realities of changing demographic trends (i.e., lower birth rates and aging population) as the proportion of workers in the 25-34 age group decreased across the country. The trend was similar in the Atlantic region's major urban centres, although Moncton's deficit (-3%) was considerably below the national average (-10%). At the other end of the spectrum, the four Atlantic Provinces had a higher increase of the proportion of their labour force in the 55-64 age group – which is nearing the age of retirement – than the national average. The increase was even greater in the region's major urban centres.

Table 2
Labour force by age group, Canada, Atlantic Canada and Atlantic Canada's major urban centres, percentage of change, 1996-2001

	Age group						
	Total	15-24	25-34	35-44	45-54	55-64	65+
Canada	7%	9%	-10%	6%	21%	23%	19%
Newfoundland & Lab.	-2%	-11%	-19%	-4%	19%	31%	29%
Prince Edward Island	4%	-1%	-15%	4%	21%	26%	16%
Nova Scotia	3%	-1%	-16%	3%	20%	26%	10%
New Brunswick	2%	-3%	-15%	2%	19%	25%	24%
Atlantic Canada	2%	-4%	-16%	1%	19%	27%	17%
St. John's	3%	2%	-12%	1%	19%	36%	29%
Charlottetown	5%	4%	-12%	1%	19%	39%	19%
Halifax	7%	12%	-12%	9%	22%	34%	8%
Moncton	9%	8%	-3%	6%	19%	38%	36%

Source: Statistics Canada, 2001 Census.

Workers are by and large better educated today than they were a few decades ago. Between 1990 and 2005, the number of employees who had less than a high school diploma decreased significantly in Canada and Atlantic Canada while the percentage of those with post-secondary

education rose in a similarly dramatic fashion. The number of workers in Atlantic Canada having a university degree – a bachelor's degree or higher – rose from 122,200 in 1990 to 197,800 in 2005. Albeit impressive, this 62% increase during the 1990-2005 period was still much lower than the Canadian increase of 72%. In 2005, 15% of the employed workforce in Atlantic Canada had less than a high school diploma, 20% had graduated from high school, 46% had some sort of post-secondary education, and 19% had a university degree (see Table 3).

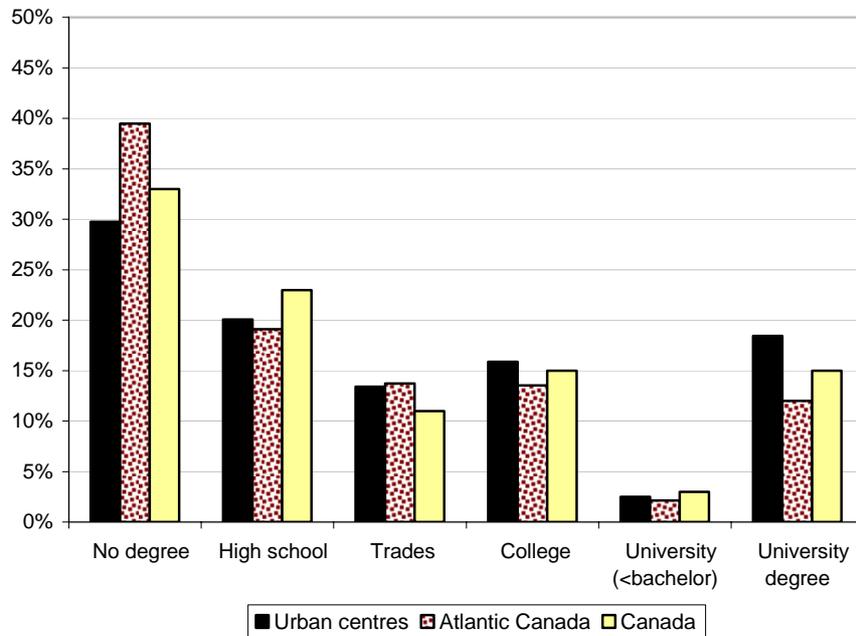
Table 3
Employment by educational attainment (15 years and over) as a share of total employment, Canada and Atlantic Canada, 1995-2005

	1990		1995		2000		2005	
	Atl. Canada	Canada						
Less than grade 9	9%	7%	6%	5%	4%	4%	3%	3%
Some high school	21%	19%	17%	15%	15%	13%	12%	11%
High school graduate	20%	23%	18%	21%	19%	21%	20%	21%
Some post-secondary	8%	10%	8%	10%	9%	10%	8%	9%
Post-sec. cert. or dip.	30%	26%	34%	31%	37%	32%	38%	35%
Bachelor's degree	9%	10%	11%	12%	11%	13%	13%	15%
Above bachelor's degree	4%	5%	5%	6%	6%	6%	6%	7%

Source: Statistics Canada, Labour Force Survey.

The population aged 15 years and over is in general better educated in Atlantic Canada's selected urban centres than it is in the region as a whole, and Figure 6 shows to which extent this is true. Even though their number dropped by 15% between 1991 and 2001, the Atlantic Provinces' proportion of individuals with less than a high school diploma was superior to the national average. Such was not the case, however, for the region's major urban centres, where the proportion of individuals with less than a high school diploma was lower than that in both Canada and Atlantic Canada. With respect to university education, once again the Atlantic region as a whole remained below the Canadian average while the urban centres had a higher proportion of their population with a university degree. The number of university graduates increased substantially between 1991 and 2001 (40% in Atlantic Canada, 45% in its major urban centres and 52% nationally). In 2001, 18% of the region's urban population held a university degree, compared to 12% at the regional level as a whole and 15% at the national level. The proportion of the population with a high school diploma, some post-secondary education, a trades certificate or diploma or a college education remained stable at all three levels.

Figure 6
Percentage of population 15 years and over by highest level of schooling, Canada, Atlantic Canada and its major urban centres, 2001



Source: Statistics Canada, 2001 Census.

Employment in Atlantic Canada has grown at a steady pace of 7% between 2000 and 2005, but below the national average of 10%. Provincially, employment grew 8% in Newfoundland and Labrador, Prince Edward Island and Nova Scotia, and 6% in New Brunswick. Urban centres are often thought of as “lands of opportunity” because employment and wealth presumably congregate there. With the exception of Charlottetown, the pace of employment growth was superior in the selected urban centres of Atlantic Canada than in the provinces during the 1990-2005 period (see Table 4). With respect to unemployment, there continue to be great discrepancies between the Atlantic region and the rest of Canada. Figure 7 shows the evolution of the unemployment rate from 1990 to 2005 in Canada, Atlantic Canada, and the region’s major urban centres. Over the 15-year period, Atlantic Canada’s unemployment rate has constantly remained between four and five percentage points higher than the national average. In 2005, the overall regional rate was 11.1% compared to 6.7% at the national level. A closer look at the provincial breakdown reveals further disparities within the Atlantic region as the unemployment rate was at 15.2% in Newfoundland and Labrador, 10.9% in Prince Edward Island, 8.4% in Nova Scotia and 9.7% in New Brunswick. Individually and collectively, Atlantic Canada’s leading urban centres have had much lower unemployment rates than the provincial rates. The urban unemployment rates in 2005 – which are

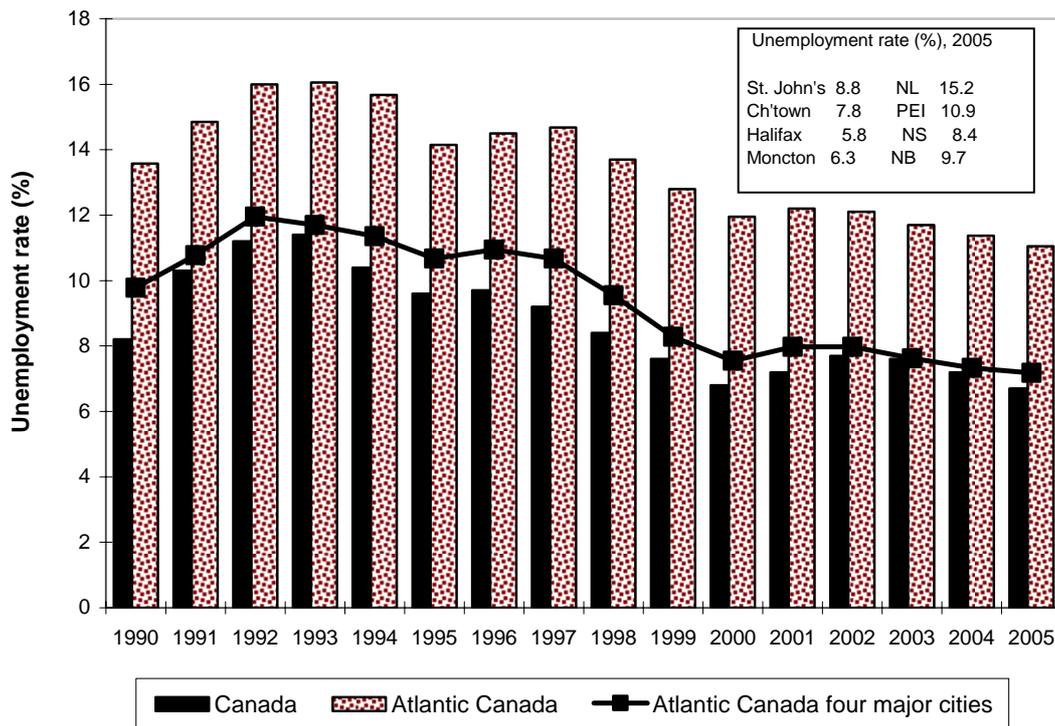
much closer to national average of 6.7% – were the following: 8.8% in St. John's, 7.8% in Charlottetown, 5.8% in Halifax and 6.3% in Moncton.

Table 4
Employment growth, Atlantic Canada and its major urban centres, 1990-2005

	St. John's	NL	Ch'town	PEI	Halifax	NS	Moncton	NB
1990	79,000	206,900	25,400	54,900	165,400	385,200	51,000	300,100
1995	79,600	194,900	26,300	57,100	163,900	374,500	54,700	307,300
2000	83,500	198,100	29,400	62,800	188,300	411,100	60,000	331,400
2005	90,900	214,300	30,700	68,100	204,300	443,600	67,000	350,400
% change 1990-2005	15%	4%	21%	24%	24%	15%	31%	17%
% change 2000-2005	9%	8%	4%	8%	8%	8%	12%	6%

Source: Statistics Canada, Labour Force Survey.

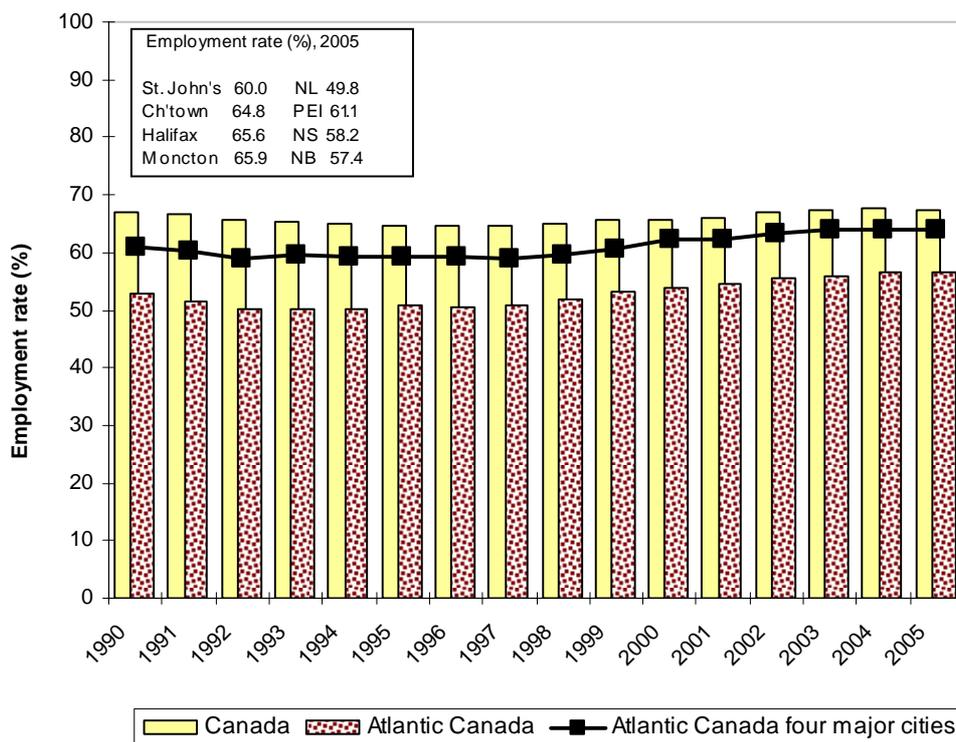
Figure 7
Unemployment rates in Canada, Atlantic Canada and its major urban centres, 1990-2005



Source: Statistics Canada, Labour Force Survey.

Employment rate refers to the number of persons employed in the reference week, expressed as the percentage of the total population 15 years and over (whereas the participation rate measures the share of the working-age population engaged in the labour market, whether they are employed or unemployed). Based on the same logic as discussed above, employment rates have been on average higher at the national level than in Atlantic Canada. The Atlantic Provinces have, however, reduced the gap in recent years (see Figure 8). In 2005, Newfoundland and Labrador had the lowest employment rate in the country at 49.8%. It is the only province to consistently register an employment rate below 50% since the 1990s. The same year, the employment rate was 61.1% in Prince Edward Island, 58.2% in Nova Scotia and 57.4% in New Brunswick. The Canadian average was 62.7%. Collectively, employment rates in Atlantic Canada's leading urban centres were much superior to provincial rates, but still slightly below the national average. Individually, however, all cities with the exception of St. John's were above the Canadian average. Data from 2005 shows that employment rates were 60.0% in St. John's, 64.8% in Charlottetown, 65.6% in Halifax and 65.9% in Moncton. The employment rate in St. John's has consistently been at least 10 percentage points higher than the provincial rate since 1990.

Figure 8
Employment rates in Canada, Atlantic Canada and its major urban centres, 1990-2005

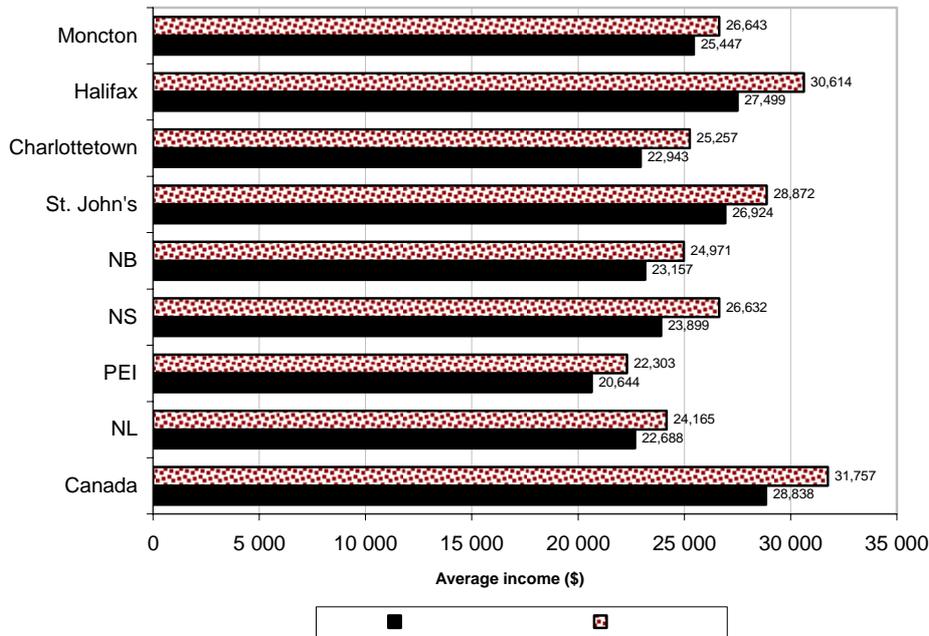


Source: Statistics Canada, Labour Force Survey.

Average employment income is also inferior in Atlantic Canada. These disparities are a direct result of the region's strong rural composition. Per capita employment incomes generally increase with city size, as reported Statistics Canada following the 2001 Census: "The Atlantic Provinces and Saskatchewan have below average per capita incomes to a significant extent because their populations are concentrated in smaller urban and rural areas³⁴." Though this is not true of all provinces, the authors assert that rural-urban structure is determinant in the case of Atlantic Canada. The average employment incomes for 1995 and 2000 are revealed in Figure 9. The data confirm that the income gap is greater between the national average and the Atlantic Provinces than between the national average and the selected urban centres. Average income in Canada was \$31,575 in 2000, compared to \$24,165 in Newfoundland and Labrador, \$22,303 in Prince Edward Island, \$26,632 in Nova Scotia and \$24,971 in New Brunswick. Nova Scotia was the only Atlantic province where the growth of average income exceeded the national average during the 1995-2000 period (an 11% increase in Nova Scotia compared to a 10% increase in Canada). Elsewhere in the Atlantic region, growth rates were inferior to the national average: 8% in Prince Edward Island and New Brunswick and 7% in Newfoundland and Labrador. Average incomes in Atlantic Canada's urban centres surpassed their respective province's average income in 2000. The income disparities were by approximately \$4,700 in St. John's, \$3,000 in Charlottetown, \$4,000 in Halifax and \$1,700 in Moncton.

³⁴ Statistics Canada, "Provincial Income Disparities Through an Urban-Rural Lens: Evidence from the 2001 Census", *Insights on the Canadian Economy* 12 (2004), 12. See: www.statcan.ca/english/research/11-624-MIE/11-624-MIE2005012.pdf

Figure 9
Average employment income (in constant 2000 dollars), in Canada, Atlantic Canada and its major urban centres, 1995-2000



Source: Statistics Canada, 2001 Census.

Atlantic Canada has a larger proportion of its labour force in primary industries (agriculture, forestry, fishing and hunting), which explains its rural dominance in comparison to the rest of Canada. According to the 2001 Census, 6% of the region's labour force fell into this category, compared to 4% at the national level. Prince Edward Island's share was even higher at 13%. The Atlantic region also had a superior proportion of its labour force in public administration (8% in Atlantic Canada versus 6% in Canada). Inversely, the region had a smaller proportion in manufacturing (11% in Atlantic Canada versus 14% in Canada) as well as in professional, scientific and technical services (4% versus 6%). Table 5 details the distribution of the labour force among industries in 2001. With the exception of Moncton, the only city which is not a provincial capital, public administration is an important industry in the selected urban centres. The industrial make-up of the Atlantic Provinces is otherwise very comparable to the Canadian picture.

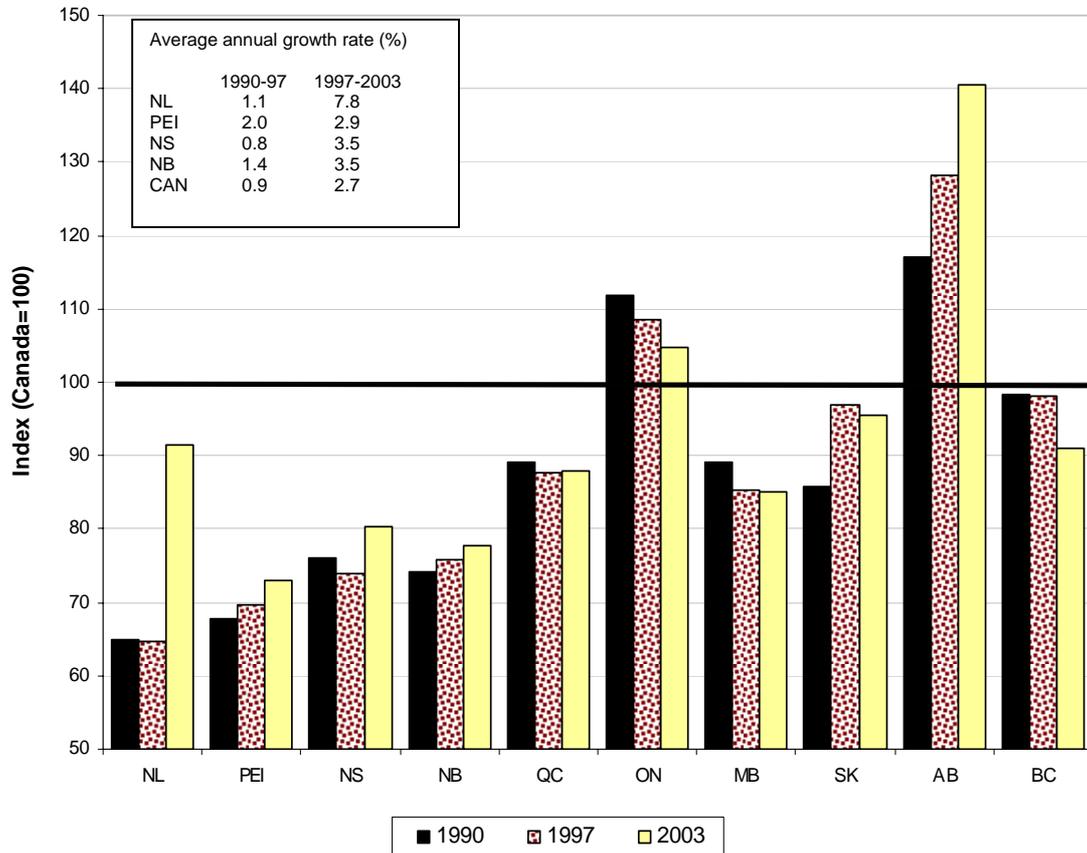
Table 5
Labour force by industry (NAICS 1997) in Canada, Atlantic Canada and its major urban centres as a share of total labour force, 2001

	St. John's	NL	Ch'town	PEI	Halifax	NS	Moncton	NB	Canada
Labour force - All industries	87 660	232 265	31 875	72 930	193 705	442 425	64 500	365 040	15 576 565
11 Agriculture, forestry, fishing and hunting	1%	7%	5%	13%	1%	5%	1%	6%	4%
21 Mining and oil and gas extraction	2%	2%	0%	0%	1%	1%	0%	1%	1%
22 Utilities	1%	1%	0%	0%	1%	1%	0%	1%	1%
23 Construction	5%	6%	7%	7%	5%	6%	5%	6%	6%
31-33 Manufacturing	5%	10%	6%	11%	5%	10%	9%	13%	14%
41 Wholesale trade	4%	3%	3%	3%	4%	4%	6%	3%	4%
44-45 Retail trade	12%	13%	12%	11%	12%	12%	12%	11%	11%
48-49 Transportation and warehousing	5%	5%	3%	3%	5%	5%	8%	5%	5%
51 Information and cultural industries	4%	2%	3%	2%	4%	2%	3%	2%	3%
52 Finance and insurance	3%	2%	2%	2%	5%	3%	5%	3%	4%
53 Real estate and rental and leasing	1%	1%	1%	1%	2%	2%	1%	1%	2%
54 Professional, scientific and tech. services	6%	3%	5%	3%	6%	4%	4%	4%	6%
55 Management of companies and enterprises	0%	0%	0%	0%	0%	0%	0%	0%	0%
56 Administrative and support, waste management and remediation services	4%	3%	4%	3%	6%	5%	7%	5%	4%
61 Educational services	8%	7%	8%	6%	7%	7%	6%	7%	7%
62 Health care and social assistance	14%	12%	12%	10%	11%	11%	11%	11%	10%
71 Arts, entertainment and recreation	2%	1%	2%	2%	2%	2%	2%	2%	2%
72 Accommodation and food services	7%	6%	8%	8%	7%	7%	7%	7%	7%
81 Other services (except public administration)	5%	6%	6%	5%	5%	5%	5%	5%	5%
91 Public administration	12%	9%	12%	10%	11%	9%	6%	8%	6%

Source: Statistics Canada, 2001 Census.

Atlantic Canada's economy is better off today than it was in the 1960s. This being said, the region continues to trail the nation in terms of productivity, which is measured by real GDP per capita. To put it briefly, GDP per capita measures the success of an economy by calculating output per person, or the amount of goods and services produced per person. Figure 10 shows the Atlantic Provinces far from the national average in 1990, 1997 and 2003 (Canada=100). Yet, it also illustrates them catching up relative to the national average during the 1997-2003 period despite low growth in real GDP per capita during 1990 to 1997. Newfoundland and Labrador recorded a spectacular annual growth rate during 1997-2003 (7.8%), the highest growth rate in Canada. All provinces with the exception of Alberta and Ontario registered a nominal GDP per capita below the national average of \$38,495 in 2003. In Atlantic Canada, the figures read as follows: \$35,243 in Newfoundland and Labrador, \$28,106 in Prince Edward Island, \$30,883 in Nova Scotia, and \$29,900 in New Brunswick. The fact that the Atlantic Provinces are closing the gap on the national average is a positive sign (in the case of Newfoundland and Labrador especially), but it should not eclipse the reality that the region still has to make up considerable ground to catch the rest of Canada.

Figure 10
Real GDP per capita by province (Canada=100), 1990-2003



Source: Statistics Canada, "Catching up and falling behind: The performance of Provincial GDP per capita from 1990 to 2003" (Ottawa: EA Research Paper Series, Catalogue n° 11-F0027MIE-No. 24, 2004), 24.

The Atlantic Provinces continue to face important challenges, these being particularly related to demographic and economic issues. The region's most disturbing realities include ageing population, youth exodus, overall limited employment and productivity growth, and very modest international immigration. In addition, the diversification of the industrial fabric remains a constant concern in many parts of Atlantic Canada. What we have demonstrated, however, is that Atlantic Canada's major urban centres are outperforming the region as a whole on most economic indicators. Immigration is one area where the entire region has performed poorly. In light of this context, it seems appropriate to explore new strategies for economic development initiatives in Atlantic Canada, and in particular its urban centres.

III

Masuring the creative economy in Atlantic Canada's major urban centres

For years, economists have developed sophisticated equations and models to explain and evaluate regional economic growth, or the lack thereof. The staple theory, the growth-pole theory, and the cluster theory are but a few examples. The Atlantic region has been a laboratory for the application of various economic development theories in the postwar era³⁵. Richard Florida's more recent contribution to economic development theory is the creative class approach. Its Canadian adaptation rests upon four indices³⁶:

- The Talent Index, which is the percentage of the population (20 years and over) with a bachelor's degree or higher
- The Bohemian Index, which measures employment in artistic and creative occupations
- The Mosaic Index, which is the percentage of the population that is foreign-born
- The Tech-Pole Index, which reflects a city-region's degree of specialization in technology-intensive activity.

Florida then used correlations in an effort to measure the strength of linear relationships between pairs of variables.

In this section, we apply Florida's indices to the Atlantic region and correlate certain variables to determine to what extent they are related. Using 2001 Census data, we once again focus on Atlantic Canada's four selected urban centres (St. John's, Charlottetown, Halifax, and Moncton). While other urban areas of influence such as Sydney (Cape Breton Regional Municipality), Saint John (N.B.) and Fredericton were excluded, we feel that the analysis of the four above-mentioned centres will provide sufficient information to draw conclusions on the creative class approach within the context of Atlantic Canada. Unless otherwise indicated, our sources and methods replicate those used by Florida and his colleagues in his Canadian case studies³⁷. Their previous research on Canadian cities solely focused on Census Metropolitan Areas (CMAs). In an effort to incorporate Charlottetown and Moncton into our sampling, we have widened the scope of our

³⁵ For a complete overview of these efforts, see D. J. Savoie, *Visiting Grandchildren: Economic Development in the Maritimes* (Toronto: University of Toronto Press, 2006), chapter 3.

³⁶ Additional variables were developed for the United States.

³⁷ Among these are: M. Gertler *et al.*, *Competing on Creativity: Placing Ontario's Cities in North American Context*; M. Gertler and T. Vinodrai, "Competing on Creativity: Focus on Halifax" (Halifax: Greater Halifax Partnership, 2004); and M. Gertler and T. Vinodrai, "Competing on Creativity: An Analysis of Kingston, Ontario" (Kingston: Kingston Economic Development Corporation, 2003).

analysis to include selected Census Agglomerations (CAs). Having a larger pool of cities that includes CAs as well as CMAs provides a stronger base for comparison between larger metropolitan areas and small to mid-size urban areas. In total, our sampling for this section of the report includes all 27 CMAs plus 18 CAs. The national average is also offered for comparison purposes. Table 6 provides the list of selected cities and ranks them in descending order by 2001 population size. Halifax and St. John's both rank in the upper half of our sampling in terms of population size while Charlottetown is the smallest urban region with approximately 58,000 residents in 2001.

Table 6
Population size and growth, CMAs and selected CAs, Canada, 1991-2001

	1991	2001	% change
1 Toronto (CMA)	3,898,933	4,682,897	20.1%
2 Montréal (CMA)	3,208,970	3,426,350	6.8%
3 Vancouver (CMA)	1,602,590	1,986,965	24.0%
4 Ottawa-Hull (CMA)	941,814	1,063,664	12.9%
5 Calgary (CMA)	754,033	951,395	26.2%
6 Edmonton (CMA)	841,132	937,845	11.5%
7 Québec (CMA)	645,550	682,757	5.8%
8 Winnipeg (CMA)	660,450	671,274	1.6%
9 Hamilton (CMA)	599,760	662,401	10.4%
10 London (CMA)	381,522	432,451	13.3%
11 Kitchener (CMA)	356,421	414,284	16.2%
12 St. Catharines-Niagara (CMA)	364,552	377,009	3.4%
13 Halifax (CMA)	320,501	359,183	12.1%
14 Victoria (CMA)	287,897	311,902	8.3%
15 Windsor (CMA)	262,075	307,877	17.5%
16 Oshawa (CMA)	240,104	296,298	23.4%
17 Saskatoon (CMA)	210,949	225,927	7.1%
18 Regina (CMA)	191,692	192,800	0.6%
19 St. John's (CMA)	171,848	172,918	0.6%
20 Greater Sudbury (CMA)	157,613	155,601	-1.3%
21 Chicoutimi-Jonqui�re (CMA)	160,928	154,938	-3.7%
22 Sherbrooke (CMA)	140,718	153,811	9.3%
23 Barrie (CA)	97,150	148,480	52.8%
24 Kelowna (CA)	111,846	147,739	32.1%
25 Abbotsford* (CMA)	113,562	147,370	29.8%
26 Kingston* (CMA)	136,303	146,838	7.7%
27 Trois-Rivi�res (CMA)	136,303	137,507	0.9%
28 Thunder Bay (CMA)	124,925	121,986	-2.4%
29 Moncton (CA)	107,436	117,727	9.6%
30 Guelph (CA)	97,667	117,344	20.1%
31 Peterborough (CA)	98,060	102,423	4.4%
32 Belleville (CA)	92,860	87,395	-5.9%
33 Kamloops (CA)	74,353	86,491	16.3%
34 Brantford* (CA)	97,106	86,417	-11.0%
35 Nanaimo (CA)	73,547	85,664	16.5%
36 Prince George (CA)	69,653	85,035	22.1%
37 Saint-Jean-sur-Richelieu (CA)	73,452	79,600	8.4%
38 Sarnia (CA)	85,008	78,908	-7.2%
39 Drummondville (CA)	61,237	68,451	11.8%
40 Red Deer (CA)	58,145	67,707	16.4%
41 Lethbridge (CA)	60,974	67,374	10.5%
42 North Bay (CA)	65,222	63,681	-2.4%
43 Medicine Hat (CA)	52,681	61,735	17.2%
44 Granby (CA)	56,835	60,264	6.0%
45 Charlottetown (CA)	54,798	58,358	6.5%
CANADA	27,296,859	30,007,094	9.9%

*Abbotsford and Kingston were CAs until 2001 when they became CMAs, while Brantford was a CMA in 1991 and downgraded to a CA in 2001.

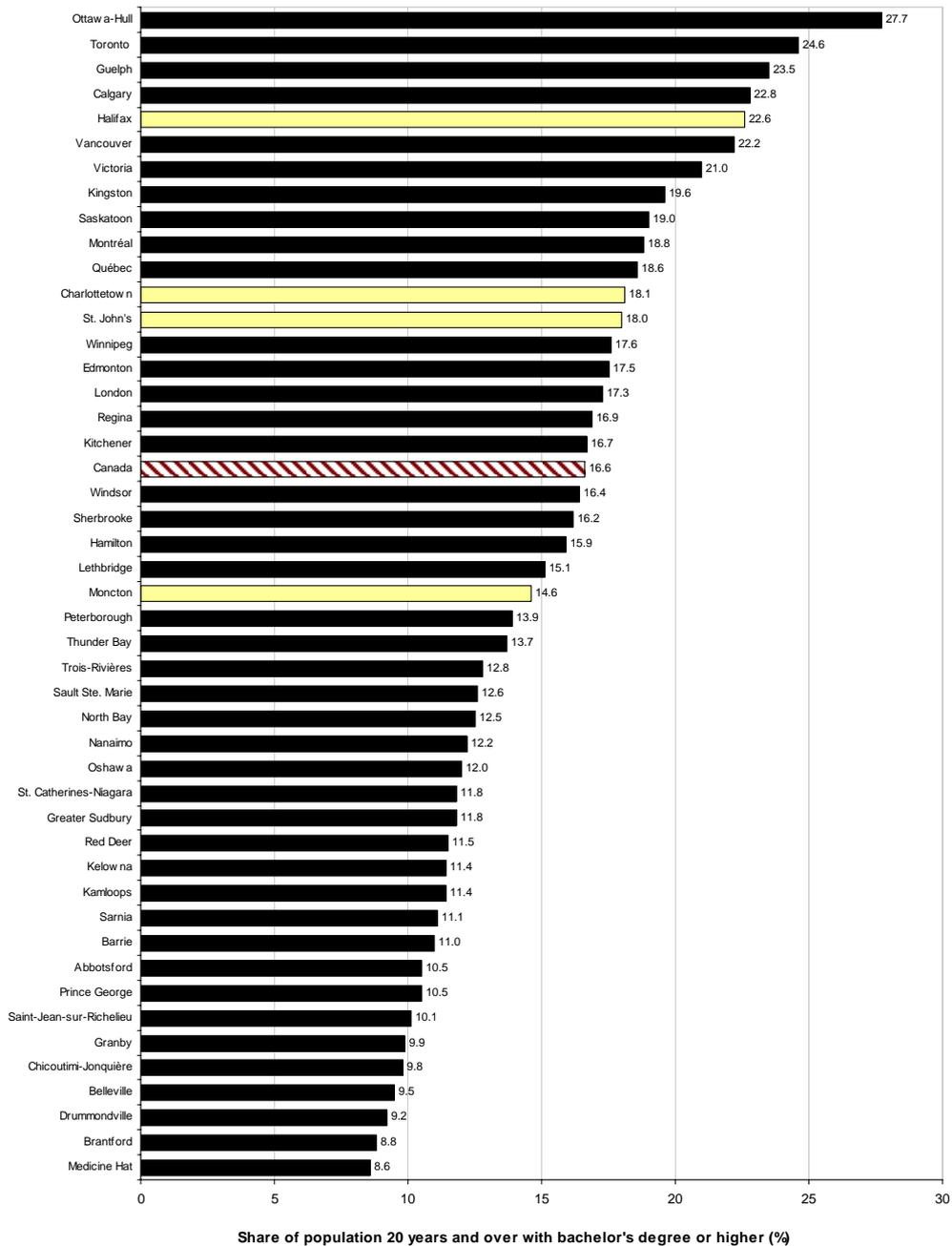
Source: Statistics Canada, 2001 Census.

The Florida Indices

▪ Talent Index

Human capital is a fundamental requirement of the new economy, for talented and skilled individuals are to the 21st century what raw materials were to the 19th and 20th centuries. Human capital is expected to drive growth in knowledge-based economies. Here, human capital is captured by the talent index, which is the distribution of talent as a share of the total population aged 20 years and older with a bachelor's degree or above. Figure 11 shows that Halifax had a high percentage of university graduates in Canada, ranking 5th overall at 22.6%. Charlottetown and St. John's also ranked above the national average, with 18.1% and 18.0% of their respective 20 years and over age group having at least a bachelor's degree. Moncton, at 14.6%, placed just below the national average of 16.6%. In fact, all of Atlantic Canada's provincial capitals boast a strong number of university graduates. Fredericton, which is not part of our study, ranked 2nd only to Ottawa-Hull with 24.7% of its 20 years and over population having a university degree. As provincial capitals, St. John's, Charlottetown, Halifax and Fredericton all have strong proportions of their workforce in the provincial and federal public service – that is to say many jobs requiring a bachelor's degree – and are home to at least one large university.

Figure 11
Talent index, or the percentage of population aged 20 years and over with a bachelor's degree or higher, selected CMA and CA, Canada, 2001



Source: Statistics Canada, 2001 Census.

There is little doubt that talent gravitates around universities and colleges. They are places of intellectual burgeoning and innovative thinking where knowledge is not only produced, but disseminated. This being said, the talent ranking overlooks an important component of the labour force, which are college graduates. In fact, Atlantic Canada's major urban centres had almost as many college graduates as university graduates in 2001, and some of these are highly skilled workers. The Atlantic region has a slightly higher proportion of college graduates than the national average, and the number of college graduates has increased more rapidly than that of university graduates (43% versus 40% over the 1991-2001 period). Nationally, the proportion of the population 20 years and over with a college diploma in 2001 was 15.9%. Moncton had the highest proportion with a college degree (18.3%, versus 14.6% with a university degree) and ranked 12th out of the 45 city-regions. Charlottetown had about the same percentage of college and university graduates (18.1% and 18.2% respectively). Halifax (17.3%) and St. John's (14.9%) both had fewer college graduates.

▪ Bohemian Index

Richard Florida considers the concentration of bohemians, expressed as the number of individuals employed in artistic professions per 1,000 population, to be indicative of a highly creative environment, which in turn is conducive to innovation. These artistic occupations include writers, producers, directors, choreographers, composers, musicians, dancers, actors, visual artists, photographers, graphic designers, craftspeople, and textile artists. Figure 12 reveals that almost 7 Canadians per 1,000 declared being an artistic professional in 2001. Interestingly, it also shows that three out of the four Atlantic urban centres figure prominently at the top of the bohemian index ranking. Halifax led the Atlantic region with 7.6 artists per 1,000 residents. Charlottetown, despite being the least populated urban centre in our sampling, was not far behind at 6.9. The Island capital is the only small city to appear near the top of the ranking. St. John's tied the national average at 6.8, whereas Moncton ranked well below it with a bohemian index of 4.6. In real terms, the number of artistic professionals can be broken down as follows: 1,180 in St. John's, 405 in Charlottetown, 2,735 in Halifax, and 540 in Moncton.

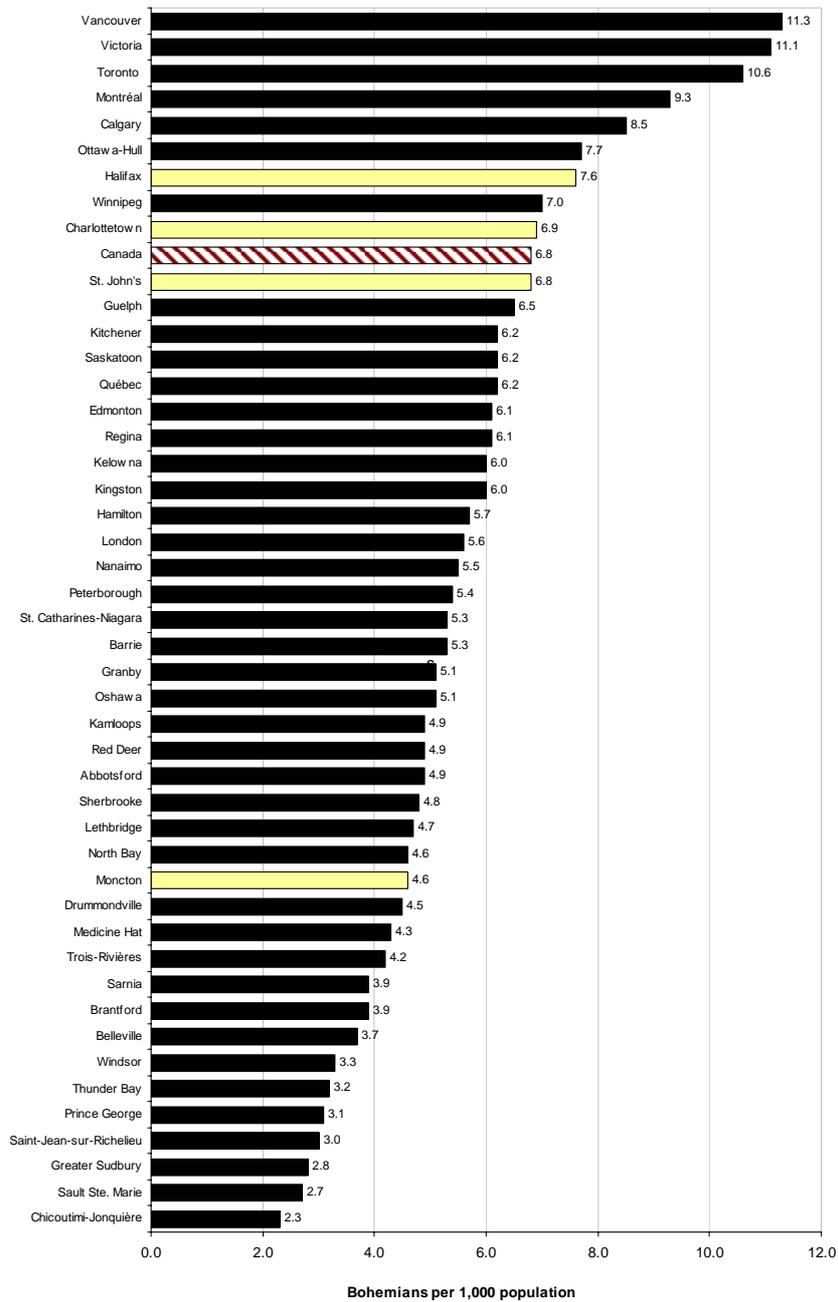
These numbers are all the more impressive considering that making a living from the arts in the Atlantic Provinces is not without its challenges. In 2001, the average annual earnings of professional artists in the region were sharply inferior to average earnings of the overall labour force. Moreover, professional artists in Atlantic Canada had the lowest average annual earnings in all of Canada. The 2001 Census disclosed that despite higher levels of education, professional artists in Atlantic Canada earned on average 36% less than the overall regional labour force (\$15,890 annually for artists compared to \$24,518 for the overall labour force), and 32% less than the national average for professional artists (which was \$23,489)³⁸.

³⁸ Hill Strategies Research Inc., "Artists in Canada's Provinces, Territories and Metropolitan Areas: A Statistical Analysis Based on the 2001 Census", *Statistical Insights on the Arts* 3, 2 (2004): 6-7.

In sharp contrast to the rest of Canada, municipalities in Atlantic Canada dedicate very little of their total expenditures to culture. Though per capita municipal spending on culture increased over the previous year in all four provinces in 2003-2004, it remained well below the national average of \$63 per capita³⁹. These results may be partly explained by the lower rate of urbanization in Atlantic Canada as well the small size and limited financial capacity of municipalities in the region. Whatever the case may be, these circumstances raise questions regarding the resolve and the capacity of Atlantic Canada urban centres to increase their cultural expenditures. The successive unveiling of provincial and municipal cultural policies in the region during the last few years represents a decisive step toward legitimizing culture as an integral part of economic development. Despite these limitations, Atlantic Canada's major urban centres (Halifax, Charlottetown and St. John's in particular) rank favourably in terms of creative capacity.

³⁹ Per capita municipal spending was \$23 in Newfoundland and Labrador, \$20 in Prince Edward Island, \$37 in Nova Scotia, and \$32 in New Brunswick. See Statistics Canada, "Government expenditures on culture", *The Daily*, October 31, 2005, 6.

Figure 12
Bohemian index, or the number of artistic professionals per 1,000 residents, selected CMAAs and CAs, Canada, 2001



Source: Statistics Canada, 2001 Census.

■ Mosaic Index

Richard Florida has made diversity – and more specifically the tolerance of diversity – a central element of his creative class theory. Diversity is measured by the mosaic index, or the percentage of foreign-born population. Atlantic Canada has a rather poor international immigration track record over the last decades. The region has had limited success in attracting and/or retaining international immigrants, but in response to the looming demographic crisis, various local and regional immigration strategies are currently in the works in Atlantic Canada. Predictably, Figure 12 confirms very poor immigration results in Atlantic Canada's major urban centres. Individually and collectively in 2001, the Atlantic urban centres posted a much weaker percentage of foreign-born population than the national average of 18.4%. Foreign-born population represented 6.9% of the overall population in Halifax, 3.8% in Charlottetown, and 2.9% in both St. John's and Moncton. Cities ranking at the top are either large metropolitan areas, or are adjacent to them. Conversely, urban centres located in peripheral regions such as Atlantic Canada, the Prairie Provinces, or remote areas of other provinces perform rather poorly. The Southern B.C. and Ontario regions attract by far the largest share of international immigration.

To give a general idea of the situation in Atlantic Canada, let us point to the fact that the four provinces attracted a total of 2,330 new immigrants in 2003, representing about 1% of all international immigrants arriving to Canada⁴⁰. This is far below its 8% share of the Canadian population. Since 1981, the number of immigrants arriving in Canada increased by 57% whereas the Atlantic region is attracting fewer international immigrants today than it did 25 years ago. This situation is even more critical given low growth rates in natural population increase. When it comes to Florida's mosaic index, Atlantic Canada's urban centres perform poorly.

■ Tech Pole Index

The Tech Pole index is used to compare "a region's share of national employment in high-technology industries to the region's overall share of national employment; this is then adjusted for city-size by multiplying by a region's share of national high-technology employment. It reflects both the region's degree of specialization in technology-intensive activity, as well as its sheer scale of employment in these sectors⁴¹." The index uses employment data for what are deemed high-technology industries⁴². Results appear in Figure 14 and highlight that Canada's large metropolitan areas (Toronto, Montréal, Ottawa-Hull, Vancouver, and Calgary) are powerhouses in terms of

⁴⁰ Statistics Canada, CANSIM, Table 051-0011.

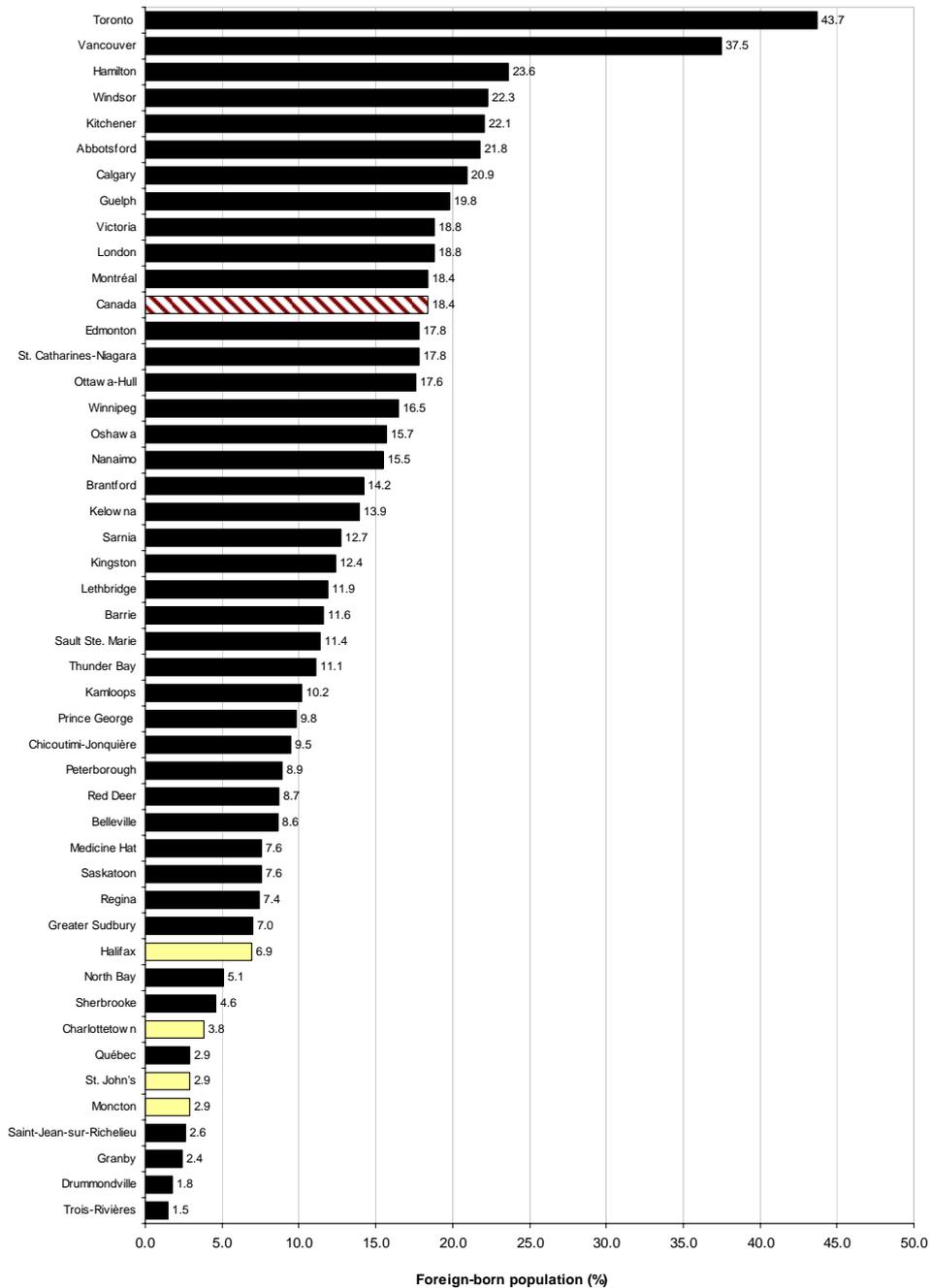
⁴¹ Quoted from M. Gertler and T. Vinodrai, "Competing on Creativity: Focus on Halifax". The data we reference in this section is from the 2001 Census, and not Statistics Canada's 1999 Longitudinal Employment Analysis Program database as was the case in all of other Canadian case studies produced by Gertler *et al.* In the end, the results presented here are similar.

⁴² Again, these are the industries identified by Gertler *et al.* in, among others, *Competing on Creativity: Placing Ontario's Cities in North American Context*. They include: aircraft, aircraft parts; electronic equipment; pharmaceuticals; medicine; scientific and professional equipment; telecommunications carriers; other telecommunications industries; computer and related services; architectural, engineering and other scientific and technical services; medical and other health laboratories; motion picture, audio and video production and distribution.

technology-intensive activity, and that the gap separating them with small to mid-size urban centres is considerable. The National Capital Region has benefited from federal government investment in the high tech sector. It should be noted that the methodology used to calculate this index has a size component that discriminates against small and mid-size urban centres, and “as a result, a relatively small city-region whose economy is highly specialized in technology-intensive sectors will lag behind a larger region with a similar level of high-tech specialization⁴³.” With this in mind, it is foreseeable that Halifax and St. John’s, because of their larger population, rank above Moncton and Charlottetown but well below Canada’s larger cities.

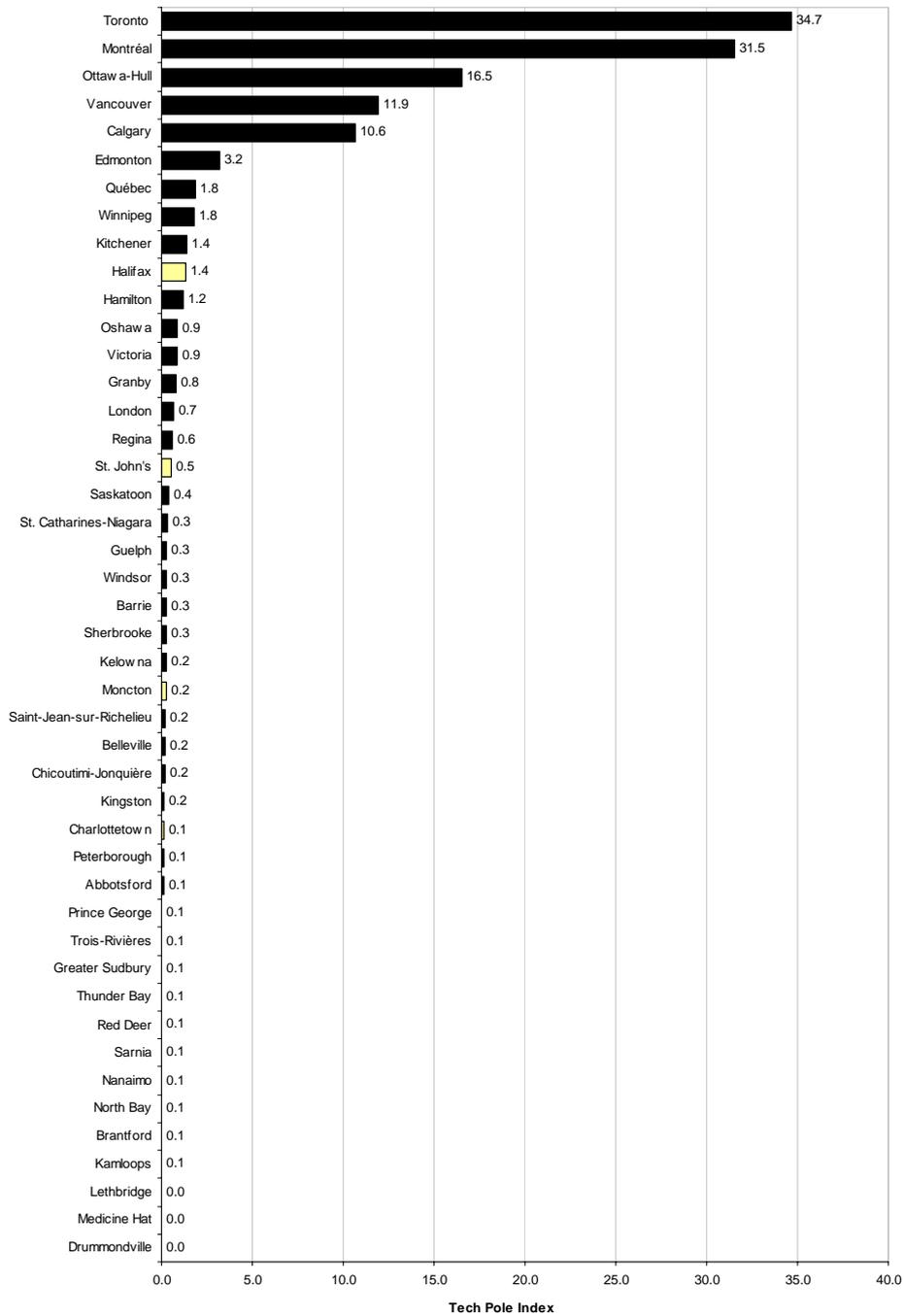
⁴³ Gertler and Vinodrai provide this explanation in “Competing on Creativity: An Analysis of Kingston, Ontario”.

Figure 13
Mosaic index, or the percentage of foreign-born population, selected CMAs and CAs, Canada, 2001



Source: Statistics Canada, 2001 Census.

Figure 14
Tech pole index, selected CMAs and CAs, Canada, 2001



Source: Statistics Canada, 2001 Census.

■ Summary

The creative class ranking has illustrated how Atlantic Canada's four major urban centres fared in relation to a wider group of 45 Canadian CMAs and CAs. Table 7 lists the top 10 city-regions for each index (out of 45), and highlights the rank of St. John's, Charlottetown, Halifax, and Moncton. Overall, the region's urban centres did well with respect to the talent and bohemian indices. Halifax in particular had a strong showing in both, as did St. John's and Charlottetown albeit to a slightly lesser extent. Charlottetown, along with Guelph, posted somewhat surprising results by outperforming several large urban centres in both categories. Even though Moncton lagged behind its Atlantic Canada counterparts and the national average by a relatively large margin, the city did well in comparison to other CAs of similar size. Table 7 also points to the fact that the region scored poorly in the mosaic and tech pole indices. Had it not been for these two indices, overall ranking would have been higher. Regardless of this, this ranking exercise has shown that Atlantic Canada's major urban centres have a solid base of talented and creative individuals on which economic development strategies can be built. Complementary initiatives aimed at attracting and retaining skilled international workers will only strengthen the region's foundations further.

Table 7
Creative class indices ranking summary

Rank by Population	Rank by Creative Class Index			
	Talent	Bohemian	Mosaic	Tech Pole
1 Toronto	1 Ottawa-Hull	1 Vancouver	1 Toronto	1 Toronto
2 Montréal	2 Toronto	2 Victoria	2 Vancouver	2 Montréal
3 Vancouver	3 Guelph	3 Toronto	3 Hamilton	3 Ottawa-Hull
4 Ottawa-Hull	4 Calgary	4 Montréal	4 Windsor	4 Vancouver
5 Calgary	5 Halifax	5 Calgary	5 Kitchener	5 Calgary
6 Edmonton	6 Vancouver	6 Ottawa-Hull	6 Abbotsford	6 Edmonton
7 Québec	7 Victoria	7 Halifax	7 Calgary	7 Québec
8 Winnipeg	8 Kingston	8 Winnipeg	8 Guelph	8 Winnipeg
9 Hamilton	9 Saskatoon	9 Charlottetown	9 Victoria	9 Kitchener
10 London	10 Montréal	10 St. John's	10 London	10 Halifax
13 Halifax	12 Charlottetown	33 Moncton	36 Halifax	17 St. John's
19 St. John's	13 St. John's		39 Charlottetown	25 Moncton
29 Moncton	23 Moncton		41 St. John's	30 Charlottetown
45 Charlottetown			42 Moncton	

Using the index results, we calculated the correlations between variables in order to establish the strength of the relationship between pairs of variables. We must emphasize that correlations are a statistical technique that do not show causality between two variables, but rather relationships. The statistical relationships between variables in Atlantic Canada are as follows:

- A strong relationship between bohemian and talent indices (cities that attract creative and artistic people also attract talented workers).
- A strong relationship between talent and mosaic indices (cities that attract foreign-born individuals also attract talented workers).
- A strong relationship between talent and technology indices (cities with large concentrations of technology-intensive employment have talented individuals).
- A less strong, but still positive relationship between bohemian and technology indices (cities with large concentrations of technology-intensive employment also have a high concentration of creativity).
- A strong relationship between mosaic and technology indices (cities with large concentrations of technology-intensive employment also have a high concentration of diversity).

The correlation coefficients for our sampling of 45 CMAs and CAs appear in Table 8. A correlation exists between two variables when one of them is related to the other in some way. The correlation coefficients below are expressed as r . The r -value ranges from -1 to +1. The closer r is to +1 or -1, the more closely the variables are related. A perfect correlation has an r -value of +1 while an r -value of 0 means there is no relationship between the variables. All of our correlations are positively related, meaning that as one variable gets larger the other gets larger, but at varying rates.

Table 8
Correlation coefficient matrix (r -value) for CMAs and selected CAs in Canada

	<i>Talent</i>	<i>Bohemian (Creativity)</i>	<i>Mosaic (Diversity)</i>	<i>Technology</i>
<i>Talent</i>	1			
<i>Bohemian (Creativity)</i>	0.82	1		
<i>Mosaic (Diversity)</i>	0.82	0.43	1	
<i>Technology</i>	0.75	0.37	0.79	1

Squaring the coefficients makes them easier to understand, since r^2 is equal to the percent of variation in one variable that is related to the variation in the other. For example, the strongest relationship is Talent-Bohemian where $r = 0.77$, and $r^2 = 0.59$, or $r^2 = 59\%$. In this case, we can therefore conclude that about 59% of a city's talent can be explained by the relationship between talent and creativity. In descending order by strength, the remaining relationships are Technology-Bohemian ($r^2 = 40\%$), Technology-Mosaic ($r^2 = 35\%$), Bohemian-Mosaic ($r^2 = 32\%$), Technology-Talent ($r^2 = 28\%$), and Mosaic-Talent ($r^2 = 21\%$). Once smaller and mid-size urban centres were taken into account, all relationships except one proved to be weaker than the original ones

analysed by Gertler *et al.* (Talent-Mosaic, which happened to be the least significant one). The remaining relationships were all weaker, with the Technology index relationships significantly weaker.

Creative workers in Atlantic Canada

We mentioned early on that Richard Florida's definition of the creative class is rather expansive. In *The Rise of the Creative Class*, he defines the broad occupational categories which make up his now-famous creative class. It consists of two sub-categories: the super creative core, and the creative class. The super creative core includes occupations in the following categories: computers and mathematics; architecture and engineering; life, physical, and social science; education, training, and library; arts, design, entertainment, sports, and media. Meanwhile, the creative class includes occupations in the fields of management, business and finance, law, healthcare (practitioners and technical occupations), as well as high-end sales and sales management⁴⁴. Florida's definition is almost identical to the knowledge worker category delineated by Statistics Canada in 2003⁴⁵. We used a combination of both lists to construct a creative employment category that is based on the 1991 Standard Occupational Classification (see Table 9). The occupational categories listed in Table 9 do have two common denominators. First of all, they are knowledge-intensive, and secondly they require creative thinking of some sort. They cover six broad categories: 1) management; 2) business and finance; 3) natural and applied sciences; 4) health; 5) social science, education and government services; 6) art, culture, recreation. They are either professional occupations, management-oriented, or technical in character.

The creative class is in fact an imperfect and arbitrary taxonomy, and as such it will undoubtedly continue to raise questions about which jobs should be included in the category and which should be left out. Creative as well as non-creative individuals can be found in all occupations. In other words, one should not assume that all engineers or managers occupy positions which require creativity. Conversely, some fishermen, machinists or heavy equipment operators who may be highly creative and innovative will not be captured by this classification.

⁴⁴ R. Florida, *The Rise of the Creative Class*, 328.

⁴⁵ D. Beckstead and T. Vinodrai, *Dimensions of occupational changes in Canada's knowledge economy, 1971-1996* (Ottawa: Statistics Canada, 2003), 15. The only striking omission on Statistics Canada's list is sports occupations.

Table 9
Creative class categories based on 1991 Standard Occupational Classification

A01 Legislators and senior management
A11 Administrative services managers
A12 Managers in engineering, architecture, science and information systems
A13 Sales, marketing and advertising managers
A30 Managers in financial and business services
A31 Managers in communication (except broadcasting)
A32 Managers in health, education, social and community services
A33 Managers in public administration
A34 Managers in art, culture, recreation and sport
A38 Managers in primary production (except agriculture)
A39 Managers in manufacturing and utilities
B01 Auditors, accountants and investment professionals
B02 Human resources and business service professionals
C01 Physical science professionals
C02 Life science professionals
C03 Civil, mechanical, electrical and chemical engineers
C04 Other engineers
C05 Architects, urban planners and land surveyors
C06 Mathematicians, systems analysts and computer programmers
C07 Computer and information systems occupations
C11 Technical occupations in physical sciences
C12 Technical occupations in life sciences
C13 Technical occupations in civil, mechanical and industrial engineering
C14 Technical occupations in electronics and electrical engineering
C15 Technical occupations in architecture, drafting, surveying and mapping
D01 Physicians, dentists and veterinarians
D02 Optometrists, chiropractors and other health diagnosing and treating professionals
D03 Pharmacists, dietitians and nutritionists
D04 Therapy and assessment professionals
D11 Nurse supervisors and registered nurses
D21 Medical technologists and technicians (except dental health)
E01 Judges, lawyers and Quebec notaries
E03 Policy and program officers, researchers and consultants
E11 University professors and assistants
E12 College and other vocational instructors
E13 Secondary and elementary school teachers and counselors
F01 Librarians, archivists, conservators and curators
F02 Writing, translating and public relations professionals
F03 Creative and performing artists
F11 Technical occupations in libraries, archives, museums and galleries
F12 Photographers, graphic arts technicians and technical occupations in motion pictures, broadcasting and performing arts
F13 Announcers and other performers
F14 Creative designers and craftspersons

Source: D. Beckstead and T. Vinodrai, "Dimensions of occupational changes in Canada's knowledge economy, 1971-1996" (Ottawa: Statistics Canada, 2003) and R. Florida, *The Rise of the Creative Class*, 328-329.

Using 2001 Census data and the above list of occupations as a guideline, we can take stock of Atlantic Canada's creative class and determine their weight relative to the overall labour force.

Table 10 highlights the results of our findings. Nationally, 24.3% of the labour force was employed in a creative class occupation. This is fairly consistent with Florida's assessment that the creative class represents about one quarter of the workforce in Canada (compared to one third in the United States). Within Atlantic Canada, St. John's, Charlottetown and Halifax all surpassed the Canadian average. St. John's had the highest proportion of creative workers with 28.1%, or 25,400 workers in the category. In Halifax, the creative class represented 27.2% of the overall labour force (53,390 workers). Charlottetown ranked third in the region with 25.6%, or 32,140 working in a creative class occupation. Moncton came in last and under the national average with 22.8% of its labour force in the creative class grouping. When we ran the numbers for Canada's large metropolitan areas, the top five cities in terms of highest percentage of creative class workers yielded the following results: Ottawa-Hull (38.2%), Toronto (30.7%), Calgary (30.5%), Québec (29.1%), and Montréal (28.6%). Conversely, Canada's metropolitan areas with the lowest proportion of creative workers were Abbotsford (16.3%), St. Catharines-Niagara (18.2%), Windsor (20.0%), Greater Sudbury (20.3%), and Thunder Bay (21.3%).

Table 10
Creative class occupations as a share of total labour force, by selected urban centre, Atlantic Canada, 2001

	Canada	St. John's	Charlottetown	Halifax	Moncton
Total labour force	15,872,070	90,290	32,140	196,590	65,305
Total creative class occupations	3,860,480	25,400	8,235	53,390	14,895
% creative class occupations	24.3%	28.1%	25.6%	27.2%	22.8%

Source: Statistics Canada, 2001 Census.

Table 11
Creative class occupations as a share of total labour force, by province, Canada, 2001

	Canada	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC
Total labour force	15,872,070	241,495	73,635	451,375	371,805	3,742,485	6,086,815	585,425	512,240	1,696,760	2,059,945
Total creative class occupations	3,860,480	46,365	13,290	95,415	71,870	919,855	1,596,230	120,090	95,535	396,675	492,070
% creative class occupations	24.3%	19.2%	18.0%	21.1%	19.3%	24.6%	26.2%	20.5%	18.7%	23.4%	23.9%

Source: Statistics Canada, 2001 Census.

Yet at the provincial level, the proportion of creative workers in Atlantic Canada was greatly inferior to both the national average and the urban centres. Here, the larger and more densely populated provinces have the highest share of creative workers in their labour force. The Atlantic Provinces'

respective shares of creative workers, on the other hand, ranked among the lowest in Canada. Creative workers represented 19.2% of the overall labour force in Newfoundland and Labrador, 18.0% in Prince Edward Island, 21.1% in Nova Scotia, and 19.3% in New Brunswick.

As previously mentioned, Atlantic Canada's major urban centres appear to have a solid foundation in terms of a skilled, knowledge-intensive and creative labour force. Each city clearly led its respective province in this regard. At the end of the day, one should not associate a large share of creative workers in some of the region's major urban centres with automatic success in knowledge economy activities. As we will see in subsequent sections, the challenge for Atlantic Canada's urban centres will be to retain the highly skilled and knowledge-intensive workers they already have and to attract other talented individuals.

Knowledge economy, innovation and creative workers in Atlantic Canada: caveats and opportunities of the creative class theory

Historically, the presence of natural resources and raw materials has greatly influenced the economic development of the Atlantic Provinces. Since the pre-Confederation era, the economic growth of many regions of Atlantic Canada – peripheral regions in particular – has been very dependent on the exploitation of resources from the sea, the forest, the earth and underground. Classic theories of economic growth have focused on the role of natural resources and geography, and businesses have been influenced by traditional variables such as location advantage, infrastructure, and tax incentives when choosing a place to establish themselves. Nowadays, within the context of the new economy, the focus is increasingly shifting towards such considerations as human capital, diversity, and quality of place. Table 12 sums up quite succinctly the major shifts in thinking from the “old” to the “new” economy. These shifts are important as they alter the way private entrepreneurs approach business decisions and the way policymakers think and act.

Table 12
Beliefs about economic development in the old and new economies

In the old economy, people believed that:	In the new economy, people believe that:
<ul style="list-style-type: none"> ▪ Being a cheap place to do business was the key. ▪ Attracting companies was the key. 	<ul style="list-style-type: none"> ▪ Being a place rich in ideas and talent is the key. ▪ Attracting educated people is a key.
<ul style="list-style-type: none"> ▪ A high-quality physical environment was a luxury that stood in the way of attracting cost-conscious businesses. 	<ul style="list-style-type: none"> ▪ Physical and cultural amenities are key in attracting knowledge workers.
<ul style="list-style-type: none"> ▪ Regions won because they held a fixed competitive advantage in some resource or skill. ▪ Economic development was government-led. 	<ul style="list-style-type: none"> ▪ Regions prosper if organizations and individuals have the ability to learn and adapt. ▪ Only bold partnerships among business, government, and the nonprofit sector can bring about change.

Source: "Austin's Economic Future: The Intersection of Innovation, Creativity, and Quality of Life" (Austin, TX: Report prepared by Texas Perspectives Inc., 2002).

In practical terms, the distinction between the old and new economy is not so “cut and dry”. The Atlantic region, for example, finds itself somewhere in between the two extremes. Some principles of the old economy continue to drive economic development efforts in the region. Access to primary resources, the cost of doing business and geographic location continue to be valuable assets that the region successfully promotes. Attitudes and mentalities towards economic development may be destined to change in the near future, but one should not assume that this shift in beliefs is a *fait accompli* in Atlantic Canada at the present time. In fact, the old economy beliefs versus the new economy beliefs may constitute a false dichotomy since both hold complementary and relevant aspects.

Florida's creative class theory has much more to do with the knowledge economy, technology, and innovation than it has to do with cultural development. More precisely, it is about creating the conditions – or laying the groundwork – for economic growth. Atlantic Canada boasts several assets, including a strong concentration of universities and colleges that produce knowledge and stimulate innovation and research and development (R&D). With 17 universities in the region, Atlantic Canada has the highest ratio of full-time university enrolment to university-age population (18 to 24 years) in the country⁴⁶. What is more, several of the region's universities rank among the best and most prestigious in Canada. Universities are responsible for almost two-thirds of all R&D carried out in the Atlantic region: “In 2003, they [universities] spent \$510 million to cover direct and indirect costs. This represents 63% of R&D performed in the region. By comparison, universities at a national level account for just over 30% [...]”⁴⁷. One should realize, however, that overall investments in R&D in Atlantic Canada represent only approximately 4% of the national total. The private sector, on the other hand, conducted only 18% of the R&D in the Atlantic region. Biotechnology, biopharmaceutical, aerospace, information and communication technology (ICT), and science-based industries are fast-expanding economic sectors that directly depend on a creative workforce. Equally important, federal and provincial governments are investing increasing amounts in innovation and R&D in an effort to strengthen the Atlantic economy. The most noteworthy regional initiative is the Atlantic Canada Opportunities Agency's Atlantic Innovation Fund. Still, the Atlantic region lags behind the rest of Canada in terms of growth in R&D spending. Between 1999 and 2003, the national R&D growth rate was 36%, compared to 22% at the regional level⁴⁸.

As stated earlier, Florida's creative class theory is all about creating the conditions for growth. This involves having a creative environment in addition to cultural and lifestyle amenities to attract and retain talented individuals. Atlantic Canada has certainly proven to be a place where cultural and

⁴⁶ Gardner Pinfold Consulting Economists Ltd., *The Economic Impact of Universities in the Atlantic Provinces*, Report prepared for The Association of Atlantic Universities (2006), 24. The 17 universities are of various size and scope, and some have satellite campuses which are not captured in the overall count.

⁴⁷ *Ibid.*, 30.

⁴⁸ Statistics Canada, CANSIM, Table 358-0001. Prince Edward Island was the only Atlantic province to exceed the national growth rate with a 62% increase in R&D spending between 1999 and 2003. The other provinces recorded the following growth rates during the same period: 27% in Newfoundland and Labrador, 20% in Nova Scotia, and 18% in New Brunswick.

artistic activities thrive, particularly during the last decade⁴⁹. In keeping with Florida's line of thinking, this is an important aspect which the region, and more specifically its urban centres, must continue to build up and promote if it wants to be competitive in the global contest to attract highly skilled workers and outside investors. Atlantic Canada's strong features are counterbalanced, if not outweighed, by others that are more problematic like sluggish population growth, out-migration, and very low levels of international immigration.

In the new economy, knowledge creation and information are primary sources of competitive advantage and innovation. Information and communications technology (ICT) and science industries, which rely considerably on R&D and highly skilled workers, are cornerstones of growth in the Atlantic Canada economy. These two dynamic industrial sectors have a predominantly urban nature, and have experienced rapid growth in the region since the 1990s. This growth has translated into increased productivity and the creation of knowledge-intensive (read creative class) and well-remunerated jobs. ICT and science-based industries develop and exploit new technologies, and many licence intellectual property. A recent study estimates that in 2002, the ITC sector was responsible for 22,000 jobs in the region, and the science-based industries 24,500 jobs⁵⁰. The vast majority of these jobs were concentrated in urban areas, particularly in Halifax and St. John's. Notwithstanding their rapid growth, Atlantic Canada's ICT and science-based industries represent only a small share of national production: "most Atlantic firms in the ICT and science sectors are small, particularly those that produce exportable goods and services. As a result, the commercial benefits associated with research and development activities, more typically associated with larger firms, are not as evident in Atlantic Canada. The region has yet to establish either clusters or competitive strength or a diverse range of industries which could create a dynamic network of tradable skills and services (...) the ICT and science sectors represent a smaller share of output than at the national level and more worryingly are growing at a slower pace⁵¹."

In addition to changing the type and structure of employment, the advent of the new economy has influenced the spatial distribution of workers. The knowledge economy is in essence an urban phenomenon, and as a consequence, city-regions have become privileged locales for competitiveness. University and post-secondary graduates and talented individuals are flocking to urban centres because they are where economic and employment opportunities abound. A recent empirical study of Atlantic Canada implied "the existence of a two-tiered economy [where] high-knowledge-intensive industrial activities are concentrated in urban areas, while rural and semirural areas continue to be centred on the development of natural resources." The study's authors further point to the imperativeness of strengthening Atlantic Canada's urban centres: "It seems clear, then,

⁴⁹ For more on this subject, see N. Barrieau, *The Culture Sector in Atlantic Canada: Its Economic Impact and Export Potential* (Moncton: Canadian Institute for Research on Regional Development, 2004).

⁵⁰ Atlantic Provinces Economic Council, "ICT and Science Industries: Their Role in Atlantic Canada's Economy", *Atlantic Report* 38, 4 (2004): 4.

⁵¹ *Ibid.*

that the adaptability of the Atlantic provinces rests largely on the capacity of the dynamic urban areas to absorb and implement the principles of the new economy⁵²."

Another study recognized the value of a skilled and highly-educated labour force, but at the same time acknowledged that urban centres are often not well-equipped to attract them, or outside business prospects. "Skilled workers are key to a successful city, but encouraging and attracting entrepreneurs and businesses should be at the centre of any policy to create wealth. In order to attract both, cities have to be good at getting the basics right. That means good schools, good roads, safe streets, and reasonable municipal taxes. Once these things are in order, the art galleries and high-tech jobs will follow⁵³."

Modern economic theories tell us that a region's competitive capacity does not depend on biophysical advantages as much as on its capacity to produce, diffuse and utilize knowledge and technologies. With the progressive evolution towards knowledge-intensive employment, a highly skilled labour force is at the root of competitiveness. The essence of Florida's message is that human capital outweighs physical capital (i.e. natural resources, infrastructure, geographic location, etc.). Though this may hold some truth in larger, more central metropolitan areas, it has not been demonstrated in the Atlantic region. As previously mentioned, a good deal of the recent economic development literature suggests that urban areas are destined to become the champions of economic restructuring, which is somewhat worrisome for Atlantic Canada given the strong share of its rural population (almost 50%). A study on the adaptation of eastern Canada's peripheral regions to the knowledge economy corroborates the trends towards the urbanization of economic activities. Mario Polèse and Richard Shearmur write that "the most competitive regions will be those most able to attract knowledge workers, that is, workers with high levels and education and know-how. Where educated workers choose to live and to congregate has become the key variable. Nurturing and holding an educated labour force is the primary challenge for regions wishing to attract knowledge-intensive activities⁵⁴." This statement certainly mirrors the underlying views expressed by Florida in his creative class theory. In the case of Atlantic Canada, recent data seems to corroborate these findings as skilled workers are choosing more often than not to settle in one of the region's urban centres. This phenomenon explains why population growth in Atlantic Canada's urban centres is exceeding regional population growth.

⁵² M. Beaudin and S. Breau, *Employment, Skills, and the Knowledge Economy in Atlantic Canada* (Moncton: Canadian Institute for Research on Regional Development, 2001), 129.

⁵³ P. Luciani, *Do Cities Create Wealth? A Critique of New Urban Thinking and the Role of Public Policy for Cities* (Halifax: Atlantic Institute for Market Studies, 2004), 10.

⁵⁴ M. Polèse and R. Shearmur in collaboration with Pierre-Marcel Desjardins and Marc Johnson, *The Periphery in the Knowledge Economy: The Spatial Dynamics of the Canadian Economy and the Future of Non-Metropolitan Regions in Quebec and the Atlantic Provinces* (Montréal and Moncton: INRS and Canadian Institute for Research on Regional Development, 2002), 40.

Analysis

Should provincial and federal policies and programs be oriented towards attracting human capital rather than luring enterprises? Do quality of place and the concentration of talented individuals in a given area have a positive effect on regional growth? Meric Gertler, Richard Florida and colleagues, in their report on the role of creativity in economic development of Canada's and Ontario's large city-regions, confirmed that the links between creativity, diversity, talent and technology-intensive activities are even greater in Canada than in the United States⁵⁵. At least this looks to be the case for Canada's large metropolitan areas (CMAs). Florida's methodology appears less compelling when applied to smaller and mid-size urban areas such as those in Atlantic Canada.

In practice, the exact influence the creative class theory has on the behaviours and actions of economic development practitioners remain unclear. Section 4 of this report sheds some light on this. But recent evidence suggests that practical considerations do more to attract entrepreneurs and business to a region. According to a 2004 survey of Canada's 41 top urban areas, *Canadian Business* magazine chose Moncton as the best place in Canada to do business⁵⁶. On what grounds? Central location, cost of living, infrastructure (namely industrial parks and water quality), bilingual workforce, income tax rates, and accessibility of elected officials were all singled out as Moncton's top competitive advantages. Before we pursue this discussion, we should point out that the survey was mostly based on "hard" data (operating costs of doing business, cost of living, recent economic growth, crime rates, etc.). Secondly, we know little to nothing about the survey sampling or its questions. We suppose that location needs for high-technology firms are substantially different from those of a manufacturing firm (like a brewery, for example). This being said, nowhere in the *Canadian Business* article are any of the following factors referenced: the presence of universities, colleges and research laboratories, skilled and creative workers, cultural dynamism and amenities, or quality of life. Florida's economic development logic is not reflected in the findings of this particular survey. This example further illustrates that physical capital remains, in certain contexts, a relevant economic development success factor.

The concentration of knowledge-intensive activities within an urban or regional system is not random. Put another way, the creative economy will not flourish just anywhere. University towns and cities with a strong research capacity and tradition are particularly good springboards for the creative economy. Universities and other institutions of higher learning have the potential to act as catalysts for economic growth and development as intellectual activities and innovation are drawn to them. Their economic role is extensive: "The university produces knowledge and technologies that are then transferred from university to the private sector through technology-transfer centres, incubators, R&D partnerships, university-industry alliances, commercialization programs and spin-off firms [...] As a key institution in a knowledge-based economy, the university plays multiple roles,

⁵⁵ M. Gertler *et al.*, *Competing on Creativity: Placing Ontario's Cities in North American Context*.

⁵⁶ A. Holloway, "The Best Cities for Business in Canada", *Canadian Business*, November 22, 2004; Internet: www.canadianbusiness.com/investing/article.jsp?content=20041122_63812_63812.

reaching well beyond this narrow view of the university as a 'knowledge factory'⁵⁷." Universities provide an open environment for dialogue and exchange – especially those research-intensive institutions with strong graduate programs – and act as a talent magnet for students, faculty, and highly skilled researchers. For this reason, universities are considered anchors of creativity. Considering the relatively small size the regional population, Atlantic Canada has a large number of universities⁵⁸. Even though some have a stronger research capacity than others, the region's universities are most certainly a potential which needs to be tapped into as they can contribute to an area's competitiveness.

Policy expert Thomas J. Courchene says that we are witnessing a paradigm shift where city-regions are emerging as the pre-eminent jurisdictions of the new economic order. At the forefront of this paradigm shift are, on the one hand, the universities, research centres and R&D laboratories that attract talented workers, and on the other hand socio-cultural policy that accommodate the creative class⁵⁹. The new economic age is characterized by the emergence of citizens capable of profiting from information and knowledge, becoming in a certain way creative agents of social progress. In order to meet the challenges of the 21st century, Courchene prescribes a policy approach to the knowledge economy based on a human capital perspective, what he calls a "citizens first" approach. In order to heighten Canada's competitiveness on the global stage, he further advocates investing in Canadians, that is to say investing in their education, training, and skills development.

Labour market requirements and employment structures are evolving at a rapid rate, and as a consequence, Atlantic urban centres must adapt accordingly. Intangible factors of production such as know-how, technology and openness to innovation are becoming serious considerations in the logic of urban development. Though the creative class theory sounds great on paper, it is not a panacea. The context of Atlantic Canada is particular, and for this reason, the region warrants an approach that takes these particularities into consideration. Atlantic Canada's troubling demographic situation will certainly have strategic repercussions on policies designed to sustain the growth of the region's urban centres. While Canada's large metropolitan areas are finding ways to manage population growth and integrate international immigrants, Atlantic Canada's urban centres are struggling to find means of maintaining and increasing population growth, and ways of attracting and retaining immigrants. This, in fact, is the reality of several small to mid-size urban centres located in peripheral regions.

Even if Atlantic Canada were to be successful in attracting a greater share of immigrants in the years ahead, there are no guarantees that their skills would be exploited to their full potential. On many levels, the integration of new immigrants in Canada as a whole is quite ineffective. In fact,

⁵⁷ M. Gertler and T. Vinodrai, "Anchors of Creativity: How Do Public Universities Create Competitive and Cohesive Communities?" (Toronto: University of Toronto, Paper presented at 'Building Excellence: Graduate Education and Research', 2004), 2.

⁵⁸ As stated earlier, the Atlantic region has the highest ratio of university enrolment among 18 to 24 year olds in Canada.

⁵⁹ T. J. Courchene, "Social Policy and the Knowledge Economy: New Century, New Paradigm", *Policy Options* 25, 7 (August 2004), 32.

"university-educated immigrants were twice as likely as their Canadian-born counterparts during the 1990s to hold jobs that fall well short of their level of education⁶⁰." Without question, Atlantic Canada needs to be more pro-active in terms of attracting international immigrants to meet labour force demands for highly skilled workers. All three levels of government must address this issue and find ways of facilitating immigrants' entry and integration into Atlantic communities. In 2004, there were in excess of 6,000 international students in the region's universities⁶¹. Herein lies an opportunity for universities, in partnership with governments, to play a pivotal role in facilitating immigration. A 2005 pilot survey of international university students in Atlantic Canada revealed that 67% of surveyed students were interested in applying for permanent residency in Canada and living in Atlantic Canada⁶².

Reporting on demographic trends and urbanization in Atlantic Canada, a recent study affirms that "urban jobs increasingly require skilled workers" and that "urban employment patterns reflect the growth of the knowledge economy⁶³". Labour market requirements are such that specialized skills are in high demand. In light of this, municipal leaders will have to consider strategies that are aimed at attracting and retaining talented and creative individuals. In essence, human capital is considered to be the basic foundation for economic growth and prosperity. The situation is all the more critical considering Atlantic Canada's looming labour shortage due to an ageing workforce and youth out-migration. Financial incentives and tax breaks may lure knowledge economy businesses to an area, but chances are they won't stick around if there is not a sufficient pool of skilled workers to help them grow. Now more than ever, economic development strategies must be oriented towards individuals – or human capital. Simply put, economic development strategies need a more human dimension. Communities and governments should not only invest in traditional infrastructure, but also in creating an environment that is appealing to creative and talented workers.

Florida's creative class theory fits into a larger social context of realignment of workers' priorities, where life in general is less compartmentalized and more value is attributed to recreation and quality of life considerations. The rationale behind his thinking is the following: given that creative workers are a highly mobile group, they will congregate towards city-regions that offer a balance between top employment prospects and top lifestyle amenities. This substantiates Florida's widely-circulated "global competition for talent" adage.

According to one of Florida's more recent international creative class rankings, Canada placed 8th place in terms of the size of its creative class. With one quarter of its labour force in a creative

⁶⁰ Statistics Canada, "Study: Immigrants Settling for Less?: 1991-2001", *The Daily*, June 23, 2004, 6.

⁶¹ Gardner Pinfold Consulting Economists Ltd., *The Economic Impact of Universities in Atlantic Canada*, 25.

⁶² D. LeBrun and S. Rebelo, *The Role of Universities in the Economic Development of Atlantic Canada: A Focus on Immigration* (Moncton: ACOA, 2006), 71.

⁶³ Atlantic Provinces Economic Council, *Urbanization and the Aging Population: What's Ahead for Atlantic Canada?* (Halifax: Atlantic Provinces Economic Council, 2003), 3.

occupation, Canada even surpassed the United States in the ranking⁶⁴. This climb in the global ranking is in large part explained by the showing of Canada's three large metropolitan areas (Toronto, Montréal and Vancouver). They are the leading centres of diversity and creative dynamism in the country. They collectively accommodate approximately three-quarters of all international immigrants arriving to Canada. They are also thriving centres of cultural production and high-technology activity. One could make the case that city-regions with strong economies are simply better positioned to attract creative individuals and immigrants.

Our major criticisms of the creative class theory have to do with scale and methodology. Florida's approach was clearly designed with large metropolitan areas in mind, and some of his creative class indices definitely have a big-city bias⁶⁵. Florida has even openly referred to small communities as "hopeless cases". Despite this, some elements of his message are nonetheless quite relevant for Atlantic Canada's major urban centres. There is much truth to his claim that city-regions that can attract and retain talented people and support highly innovative firms will support prosperity (even though he is not the first to put these thoughts forward). Though the small and mid-size city reality of Atlantic Canada does not entirely line up with Florida's big city paradigm, we have demonstrated that Atlantic Canada's urban centres possess at least two valuable attributes associated with the creative class theory: a high percentage of the population with a university degree, and a high concentration of creative talent (bohemians). To be sure, these individuals constitute a solid foundation on which urban strategists and policy advisors can capitalize.

We have also seen that natural population increase is practically stagnant in Atlantic Canada, and that the region's labour force is aging. But aging labour force is a widespread problem, and in order to attract new talent, cities will need to find innovative ways of making themselves attractive to outsiders from other regions and other countries and retain those that are already there. Creative talent will go where there are first and foremost employment opportunities. If faced with the option of several locations with good employment opportunities, the pendulum could tip in favour of cities with vibrant downtowns, a dynamic arts and cultural scene, and diversity. But not necessarily – and this is one of the principal caveats of Florida's theory. Not all creative workers are on a quest for "cool" and diverse cities.

The future of Atlantic Canada's urban centres is an issue in which political decision-makers from all three levels of government have a vested interest. The importance of strengthening urban centres has been reiterated time and again, but care must be taken to minimize the impact on rural areas. In the current context of the new economy and continental and global integration, experts concur that opportunities for economic growth will depend on knowledge production and capacity for innovation. Urban centres will play a primary role in the growth of regional economies. The growing

⁶⁴ In descending order, the top five countries were Ireland (33.5%), Belgium (30.4%), Australia (30.1%), the Netherlands (29.5%), and New Zealand (27.1%). The United States dropped to 11th place with 23.6% of its workers in the creative class. See R. Florida, "America's Looming Creativity Crisis", *Harvard Business Review* 82, 10 (October 2004), 124-125.

⁶⁵ For more on this, see R. Nelson, "A Cultural Hinterland?: Searching for the Creative Class in the Small Canadian City", in W.F. Garrett-Petts (ed.), *The Small Cities Book: On the Cultural Future of Small Cities* (Vancouver: New Star Books, 2005), 98-105.

body of research in the field of urban economics emphasizes the importance of fostering knowledge and the creative economy. Yet, the creative class approach has some obvious limitations when applied to small to mid-size urban centres, and even more so when these centres are peripheral. That is the case in Atlantic Canada.

Now that we have pointed to some strengths and limitations of the creative class approach within the context of Atlantic Canada, we turn to what practitioners in the fields of economic development and culture had to say about it. More particularly, the interviews offer insight on some of the common issues and challenges of the Atlantic Canada urban system, on what works in economic development in the region and what could be improved.

IV

What economic development and cultural sector practitioners had to say

In an effort to get a better understanding of what practitioners had to say regarding urban economic development in general, and the influence of Florida's creative class theory in particular, we gathered information through semi-directed interviews with 26 individuals. There were two groups of interviewees – the first comprised of economic development practitioners and the second **culturale** sector practitioners. The individuals in the latter group were consulted in an effort to get a better understanding of the degree of importance cities attach to arts and culture as means to improve and promote quality of place. Our sampling included individuals from St. John's, Charlottetown, Halifax, and Moncton, and our questions focused on two major areas: first, on the urban economic challenges of cities, and secondly on the relevance of the creative class approach. While we recognize that each urban centre is fundamentally distinct and has its own particular set of challenges, we will attempt to generalize the information gathered through the interview process and highlight some of the common issues and challenges.

On urban economic challenges

Section 2 of this report examined the regional economic and demographic situation of Atlantic Canada in comparison to its major urban centres. Statistics Canada data confirmed that urban centres were, generally speaking, doing better on both the economic and demographic fronts. Our interviews revealed that in some instances, doing better than the regional average is still not good enough. Challenges can be grouped into two broad categories: meeting labour force shortage requirements, and building competitive business environments.

▪ *Meeting labour shortage requirements*

The major challenge for the present and future of the region's urban centres is related to labour shortage. An aging workforce, coupled with serious youth out-migration, is expected to have serious consequences on the economic growth and sustainability of many urban regions. Stakeholders believe that cities need long-term strategies not only to keep their youth, but also to attract skilled workers. Youth retention is critical, therefore, cities must create an appealing climate in order to keep them in the region and repatriate those who have left to pursue opportunities elsewhere. With the exception of Halifax, Atlantic Canada's urban centres feel the effects of the brain drain (Halifax has one of the highest youth retention rates in Canada). More should be done to retain graduates from Atlantic Canada's universities. St. John's, Charlottetown, Halifax and

Moncton each have at least one university and college. More and more university and college graduates appear to be staying in the city where they have studied, and this is a testament to the fact that there are a growing number of opportunities for educated youth. Local university and college programs should be customized to meet local industry needs.

Immigration has a tremendous role to play in satisfying labour shortages. In recent years, Atlantic Canada's urban centres have attracted only a limited number of immigrants, and they have equally struggled to retain them. The Atlantic region often acts as a stepping stone for new immigrants, or a place where they temporarily settle before moving on to larger metropolitan areas. The current infrastructure is insufficient to welcome and integrate new immigrants and local communities need to do more in this respect. Efforts should focus on connecting immigrants to employment opportunities. Like most Canadian universities, the Atlantic region's universities have embarked on a drive to attract foreign students. Special efforts should be made to retain international graduates of Atlantic Canada universities and colleges.

▪ *Building competitive business environments*

To attract and retain a skilled workforce is one thing. But to build resilient economies, Atlantic Canada's urban centres will need to create meaningful, high-wage employment opportunities. As they try to get away from a government-led economy, Atlantic Canada's urban centres are increasingly pursuing opportunities in knowledge-based industries (marine and ocean technology, biotechnology, aerospace, ICT, energy, etc.), hence the need for a highly skilled labour pool. Many of these fields can benefit from increased collaborations with local universities. The presence of universities with a strong R&D capacity is a considerable advantage for cities. Partnerships between municipal, provincial and federal governments with universities and the private sector should be established in order to create a culture of innovation in the Atlantic region. In fact, post-secondary institutions are viewed as vital actors and should be increasingly integrated to local economic development efforts.

The lack of strategic and coordinated planning was identified as a serious deficiency in the Atlantic region's urban centres. Experience has shown that a "shotgun" approach to economic development is ineffective. Meeting the challenges of the future will require that cities adopt a strategic and focused approach spearheaded by strong leaders with a clear vision. Another challenge has to do with understanding the needs of local communities. Several stakeholders called for benchmarking tools to assess local needs. Often, federal and provincial economic development efforts are not well aligned with local needs. Municipal governments, for their part, generally don't have the adequate resources to pursue economic development opportunities. Provincial governments must take a leading role in pursuing urban economic development. This may require significant political courage, given the strong rural constituencies.

Globalization means that Atlantic Canada's urban centres are not competing against one another. Rather, St. John's, Charlottetown, Halifax, and Moncton are competing with other city-regions around Canada and throughout the globe. How the region is portrayed is of primal importance. In the past, the Atlantic region has suffered the effects of negative media coverage at the national level. This has only served to circulate misconceptions about the region. Overcoming these perceptions continues to be a challenge for cities as they work on increasing their visibility and transmitting a positive image. Typically, competitive advantages in Atlantic Canada's urban centres were said to include the cost of doing business, wage levels, availability of a skilled workforce, strategic infrastructure, superior quality of life, affordable cost of living, local universities with research capacity, and a favourable business climate. This must be promoted.

On the creative class approach

Our interviews revealed that, though most were familiar with the general fundamentals of Florida's theory class theory, few were familiar with its intricacies. Most made parallels between Florida's theory and the need for investing in culture, but few made reference to the central functions played by the knowledge economy and technology.

Florida's theory was qualified as the "flavour-of-the-month" by several economic development practitioners who pointed to its practical shortcomings. Though the presence of a creative environment is very important on paper, it is difficult to sell to outside business interests. Speaking from experience, several practitioners said that from a business perspective, fiscal incentives and infrastructure are much more important. In sum, quality of life and lifestyle amenities are important but not critical factors. Businesses are first and foremost looking for skilled workers, competitive tax rates, and basic infrastructure needs. A select few interviewees appreciated the bigger picture of Florida's rationale: if skilled workers go to cities with vibrant communities and companies go to cities with skilled workers, then companies (read knowledge-intensive companies) will go to cities with vibrant communities.

The vast majority of the economic development practitioners we interviewed attributed little significance to the view that economic growth is exclusively driven by the location choices of creative individuals who prefer places that are diverse, tolerant, and open to new ideas. These are important assets that can help to attract young, skilled workers and may be more popular to footloose industries, but other more practical factors also fall into the equation, such as the affordability of housing and access to health care and good schools. Creating the conditions for growth is a constant issue for cities. The region's urban centres should market some of the benefits of mid-size cities: less traffic congestion, proximity to a rural environment and nature, a slower pace of life, and strong sense of community. Contrary to Florida's theory, not everyone wants to live and work in a bustling metropolitan area.

Cultural sector stakeholders, on the other hand, felt that cities could do more to tie arts and culture into economic development strategies. At present time, culture is not truly viewed as an economic development tool. According to them, cities often use arts and culture to promote themselves, or integrate them into tourism marketing strategies. Arts and culture activities do a great deal in terms of making a city attractive to outsiders – tourists as well as investors – and improving the social fabric of cities. The perception is that the presence of a creative environment has a positive impact on attracting economic development opportunities, but there is no hard data to measure to what extent this is true.

To further illustrate the gap between culture and economy, cultural sector organizations or stakeholders are seldom asked to participate in economic development planning. Though municipal support for arts and culture has increased in recent years, the sector generally remains a marginal and sporadic priority. Cultural sector practitioners' challenge is to encourage crossovers between economy and culture, to demonstrate how they can mutually benefit one another. Creativity was not on municipalities' radar screen until very recently, and Richard Florida has done a lot to bring arts and culture to the attention of policymakers and decision-makers.

V

What to do: meeting the challenges of Atlantic Canada's urban centres

If Florida is right, individuals do not always follow jobs and firms establish new activities in regions where creative individuals decide or prefer to live. What are Atlantic Canada and its three orders of government to do? What is the private sector to do? How can the region possibly promote its talent and bohemian indices?

As the summary in Table 7 indicates (page 53), Atlantic Canada appears ideally positioned to pursue some elements of Florida's policy prescriptions. Most of the chosen cities from the Atlantic region ranked rather well in terms of the creative indices despite their relatively small size. As is well known, the region, notably Nova Scotia, is home to a high number of universities⁶⁶. The region's lifestyle, unhurried quality of life, beaches, parks and accessible housing costs should appeal to creative individuals. In brief, one would think that the region has what it takes to become a Florida economic development laboratory. Yet these strengths are offset by the fact that comparatively speaking, Atlantic Canada's high-tech, research, and innovation activities, which are central to Florida's argument, represent only a small share of national output.

But in economic development things are rarely what they seem, nor as straightforward as one would like. In addition, even a cursory review of the economic development literature reveals that there are fashions and fads in economic development theories. No economic development theory, however all encompassing and convincing it may at first appear, has ever lived up to expectations. One only has to think back to Perroux's growth pole centre to appreciate this. Many countries, both in the western world and developing countries, embraced Perroux's growth pole theory and invested a substantial amount of public funds to make it work. Canada was no exception. It will be recalled that the growth pole concept formed the basis for the newly established Department of Regional Economic Expansion (DREE) from 1968 to 1973. Canada, like so many other countries, abandoned the growth pole concept in the mid-1970s as it grew impatient with its performance.

This is not to suggest for a moment that economic development theories are unimportant. They are very important, not just in gaining insights into how economic development takes shape, but also in producing policy prescriptions. Indeed, one could argue that DREE's growth pole concept was successful. One only has to look at the growth of Moncton, Halifax, and St. John's, which constituted an important part of DREE's growth pole efforts, to see some evidence of this.

⁶⁶ Nova Scotia is home to 11 universities, but these vary greatly in terms of size, structure and program offerings.

Florida does offer fresh insights into economic development and opportunities and ideas to shape new policy prescriptions. There is plenty of evidence to suggest that cities, innovation, research and development, quality of life indicators, creative minds, and highly skilled individuals matter and will continue to matter a great deal to the economic health of regions. This being written, Florida's methodology fails to show beyond the shadow of a doubt that creativity and diversity will lead to or sustain economic growth.

There are many things government could do to pursue Florida's policy prescriptions. However, there are also many things that governments are currently doing that square with Florida's view of the world. In 2001, the Atlantic Canada Opportunities Agency (ACOA) launched the Atlantic Innovation Fund which pursues the kind of economic development objectives Florida promotes. The purpose of the fund is to assist Atlantic Canada to compete in the global economy by promoting new ideas, new products and R&D. The fund has been extremely well received in the region – during the first three funding rounds, the agency received proposals to fund 487 projects worth about \$3 billion. From these, ACOA approved 131 projects, totalling about \$363 million from the fund which, in turn, leveraged \$802 million in total funding to R&D projects in the region. But R&D is only one aspect of the innovation process. Federal and provincial governments should support a wider view of innovation and not overlook those who create or innovate by other means than R&D, and in other more traditional economic sectors.

There are other initiatives that both the federal government and provincial governments have put in place that square nicely with Florida's views. Efforts to promote the region to new Canadians, the decision by the government of New Brunswick to introduce tax incentives to encourage international university students to stay in the province after graduation, and special R&D efforts by all four provincial governments speak to the Florida agenda.

What more could be done? The first thing to remember is that there are no quick fixes or easy solutions. If there were, one could easily assume that they would be in place by now. The second thing to remember is that in economic development, as in other things, history matters. The economy of the four Atlantic provinces has not grown as strongly as has that of other regions in Canada, notably Ontario and Alberta. There are a variety of reasons for this, including the application of national policies over the years in the case of Ontario, and the rich oil and gas reserves in the case of Alberta. It is unlikely that Florida or anyone could possibly transform the Atlantic Canada economy over the short term. It will take time and a sustained commitment on the part of all key economic actors from government to universities and the private sector. The economic challenges confronting the region are far reaching. They are also well known: a lack of new Canadians, a relatively weak urban population, a private sector that does not invest enough in R&D, innovation, and the list goes on.

The solutions? Florida points to several possibilities. They include promoting urban development. This could include special emphasis on the Halifax-Moncton corridor and St. John's. He stresses the important role universities can play in promoting economic development, particularly through

their research activities. While it is true that Atlantic Canada is home to excellent universities, the region has a limited number of research intensive ones. Universities like St. Francis Xavier, Acadia, and St. Thomas consistently rank high in *Maclean's* ranking of Canadian universities. They are, however, primarily undergraduate universities with important but still modest research accomplishments when compared with the University of Toronto, McGill University and the University of Alberta.

The region has two universities with strong research accomplishments in a variety of fields: Dalhousie, in Halifax, and Memorial, in St. John's. The region should look to these two institutions for leadership and, in turn, both universities should explore ways to partner with other universities in the region to pursue research opportunities. There is no better place to focus cooperation efforts than on R&D in the universities. Both senior orders of government and R&D funding agencies will need to take the lead on this front. Atlantic Canada universities are, according to Statistics Canada data, the primary source for innovation and basic research in the region.

The two senior orders of government will also need to be creative in shaping public policies to further enhance the region's attractive quality of place in order to keep and attract people. The arts and culture industries, museums and recreational facilities are all important components of a regional infrastructure setting out to attract the best and the brightest creative minds. This has not been an important part of the region's economic development strategy in the past, but it should be in the future. Further empirical causality data is needed to demonstrate that quality of place does indeed play a role in attracting and retaining these creative minds.

The region, as is well known, has historically been highly dependent on natural resources, exporting many of its products in raw form. Infrastructure, transportation and natural resources will continue to be important as geography and location still matter to economic development in Atlantic Canada. Sensible economic development policy must, after all, build upon strengths and advantages. Even so, the region needs to take seriously Florida's view that, in future, human capital will be a critical success factor. Because workers can move from place to place, regions need to improve their liveability to keep and draw in new talent. The new mindset is to nurture and retain highly skilled individuals. Governments should look to people climate as well as business climate. They should pursue a human capital strategy that targets methods for attracting and retaining talent, namely through education, training and immigration.

Conclusion: looking to Atlantic Canada's urban centres

To be sure, Florida's argument that economic development is concentrating in urban areas holds considerable merit. Section 2 of this report showed that selected Atlantic urban areas are leaders in terms of employment and economic growth, and are already playing a central role in the growth of provincial and regional economies. But how can Atlantic Canada promote urban development? Can our cities compete with Montréal, Ottawa and Toronto, let alone Boston and New York? How does the region overcome parochial tendencies? What about rural areas? Where will they fit in the general scheme of things?

These are not easy questions to answer, but the region needs to address them. It needs to ask what role ought the federal government play in urban development in the region. It goes almost without saying that what urban areas in Atlantic require for economic development will not be the same in Toronto. St. John's, Charlottetown, Halifax, Moncton, and other cities in the region will need support for infrastructure development, for marketing development and for striking new partnerships. Our cities do not have the planning capacity of a Toronto or an Ottawa. Our provincial governments, small by Ontario and Quebec standards, can hardly provide the planning support the larger provinces can to their urban areas. This is just one more reason why the four Atlantic Provinces need to establish close forms of cooperation to promote urban development. But that will not be enough. The federal government can play an important role with its own regional development programs and its ability to influence provincial governments. The federal government has in the past successfully showed the way to regional cooperation in the tourism and trade sectors. It should do so again in urban development.

Promoting urban development in Atlantic Canada will not be easy and one only has to think back to the application of the growth pole concept in the late 1960s and early 1970s to see evidence of this. Promoting urban development can easily give the impression that governments are supporting urban communities over rural communities and some municipalities over others. Rural development and urban development are not opposite; they are complementary.

The above is precisely why opinion leaders, business leaders, community leaders and the media need to come together to explore the way ahead for economic development in Atlantic Canada. The region needs to foster new relationships and partnerships to review economic development challenges.

The possible public policy agenda for the region contains many potential items ranging from urban development, means to promote research and development in the private sector, infrastructure development, trade promotion, tax reform, rural challenges and development, the role of

universities, ways to promote innovation-based economic development, greater regional cooperation, and the list goes on. Indeed, the list is much too long and a greater sense of priority and cooperation needs to take shape. This will not happen in a vacuum or simply because it should happen. It will only happen if committed Atlantic Canadians from all corners of the region and from a variety of economic sectors come together to make it happen.

While Florida presents compelling views about economic growth, his arguments remain very hypothetical and his methodology quite questionable. Much like some of the economic theories that have come before it, the creative class theory is not a be-all and end-all approach for Atlantic Canada. One cannot base recommendations for action on the strength of linear relationships, but one can extract several useful insights from Florida's work. The new economy is different, it tends to favour human capital over natural resources, urban areas over rural areas, and it is highly competitive and private sector driven. Communities, private firms and universities from four small provinces trying to go at it alone will not work. Atlantic Canada needs a forum where all key economic actors can come together to compare notes, network and chart an economic development course. This is the single most important item on the policy agenda and the federal government can play a leading role.

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