

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

**PIERRE-MARCEL DESJARDINS
MARIO POLÈSE
RICHARD SHEARMUR**



Institut canadien
de recherche en
**POLITQUES ET
ADMINISTRATION PUBLIQUES**

Canadian Institute
for Research on
**PUBLIC POLICY
AND PUBLIC ADMINISTRATION**

INRS
Université d'avant-garde

This report is funded by the Atlantic Canada Opportunities Agency (ACOA) under the Atlantic Policy Research Initiative, which provides a vehicle for the analysis of key socio-economic policy issues in Atlantic Canada. The views expressed in this study do not necessarily reflect the views of ACOA or of the Government of Canada. The author is responsible for the accuracy, reliability and currency of the information.

Cette étude est également disponible en français :

- www.ucs.inrs.ca/ucs/publications/collections/rapports-et-notes-de-recherche
- laser.ucs.inrs.ca

ISBN 978-2-89575-292-9

Legal Deposit : Bibliothèque et Archives nationales du Québec, 2013
Bibliothèque et Archives Canada

© All rights reserved

Acknowledgements

This study is the result of a collaborative effort between two institutions: the Canadian Institute for Research on Public Policy and Public Administration (CIRPPPA) of the Université de Moncton, which managed the project and, in Montreal, the *Centre-Urbanisation Culture Société* at INRS (*Institut national de la recherche scientifique*) part of l'Université du Québec. The study was carried out thanks to the financial support of the Atlantic Canada Opportunities Agency (ACOA).

The authors thank the numerous persons who have helped us in this endeavour. At INRS in Montreal, we thank Gaëtan Dussault, indispensable in the design and production of the maps contained in this study, and Cindy Rojas for her help in the final aspects and web production of the study.

In Moncton at CIRPPPA), we thank Nicole Barrieau for her precious support during the first stages of the project, Réjean Ouellette for the French translation of the text, John Savage for his help with the French figures and tables and Céline Basque for her help in managing the project.

At ACOA, we thank Richard Cormier and Nadine Cormier for their support and their confidence in the study from the very beginnings. However, we owe a special debt of thanks to Maurice Mandale for his invaluable advice and unfaltering moral support all through the long process of the study's production. The study is also in part his.

Pierre-Marcel Desjardins, Moncton

Mario Polèse et Richard Shearmur, Montréal

February 2013

TABLE OF CONTENTS

| | |
|---|-----|
| Executive Summary | 1 |
| Chapter 1 – Introduction: An overview of some recent trends | 29 |
| Chapter 2 – Agglomeration: The continuing importance of cities | 37 |
| Chapter 3 – Geography, accessibility and geo-structural forces: an econometric approach | 48 |
| Chapter 4 – Location and industrial Structure | 69 |
| Chapter 5 – Amenities and the Residential economy | 91 |
| Chapter 6 – The Geography of Economic Inequality in Canada | 106 |
| Chapter 7 – Canada’s Northern Economy – New (and different) challenges | 118 |
| Chapter 8 – Conclusion: Directions for Future Research | 125 |
| Appendix 1 | 128 |
| Appendix 2 | 129 |
| Bibliography | 130 |

Executive Summary

1. The Context

In a study focused primarily on Quebec and the Atlantic Provinces (Polèse and Shearmur 2002), the authors examined underlying trends explaining regional differences in economic development in Canada. Simplifying somewhat, there were two overall conclusions.

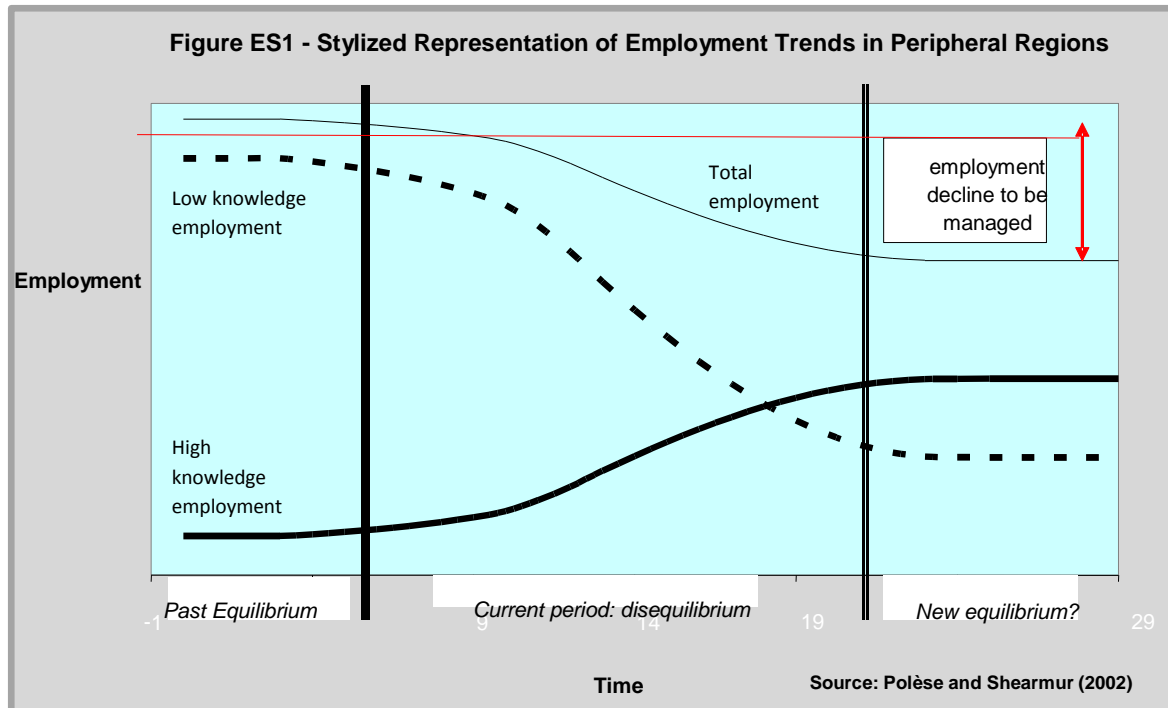
The first conclusion of that study was that the factors explaining regional differences in development were deep-seated, rooted in the inescapable rules of economic geography, and could not be easily overcome, specifically the gap separating “central” urbanized communities and more peripheral, often resource-based, communities. The basic variables of size and distance continue to shape the location of much economic activity (outside the primary sector, that is), in Canada as elsewhere.

The report's second conclusion was that many of Canada's regional and local economies were undergoing substantial structural change as they moved from labour intensive to knowledge intensive activities. This structural change was having a marked impact upon communities with economies based upon resources and on first or second transformation manufacturing (though this process is not confined to any particular sector, but to types of jobs that happen to be more prevalent in these sectors). For these communities innovation and increased productivity was leading to employment decline as large numbers of low knowledge-content jobs were being replaced with smaller numbers of high-knowledge content jobs, with little prospect of local re-employment for the unemployed labour force¹ (see figure 1 below). Given these processes and the geo-structural forces at play, the first report concluded that it was those regions best able to manage these structural changes and to envisage their future as smaller but more knowledge-intensive economies that would be best positioned to thrive. The first report therefore suggested that policy intervention be thought of as a process for managing these changes rather than as a process for halting or reversing them.

The study focused on the last three decades of the 20th century. The observed trends did not suggest that the rules were about to change. A decade later, it is appropriate to ask whether that conclusion still holds.

¹ These processes also occur, in certain sectors, in larger cities. However, in large cities processes of creative destruction have served to mitigate the regional effects as new sectors emerge which can utilise the underutilised labour.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges



2. The Canadian economy victim of the Dutch Disease?

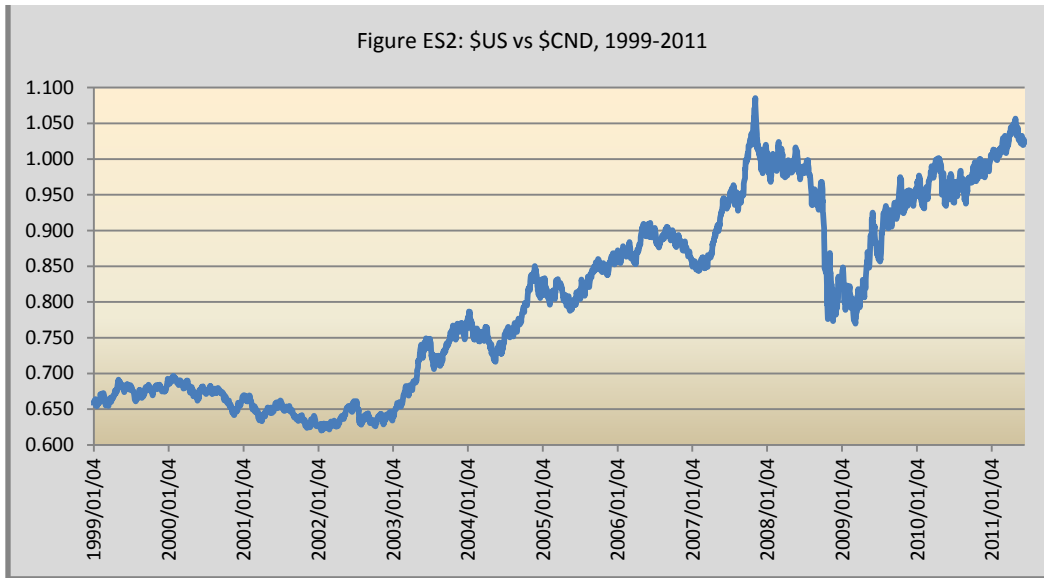
The Dutch Disease refers to “the negative impact on an economy of anything that gives rise to a sharp inflow of foreign currency, such as the discovery of large oil reserves. The currency inflows lead to a currency appreciation, making the country’s other products less price competitive on the export market.” (<http://lexicon.ft.com/Term?term=dutch-disease>).

Canada seems to be suffering from the Dutch Disease. As can be observed in Figure ES2, the value of the Canadian dollar – compared to the U.S. dollar – has experienced a significant increase in the past decade. Comparing Figures ES2 and ES3, we can observe that there is a strong correlation between the rise of the value of the Canadian dollar and the rise of the price of crude oil, thus the link with the Dutch Disease.

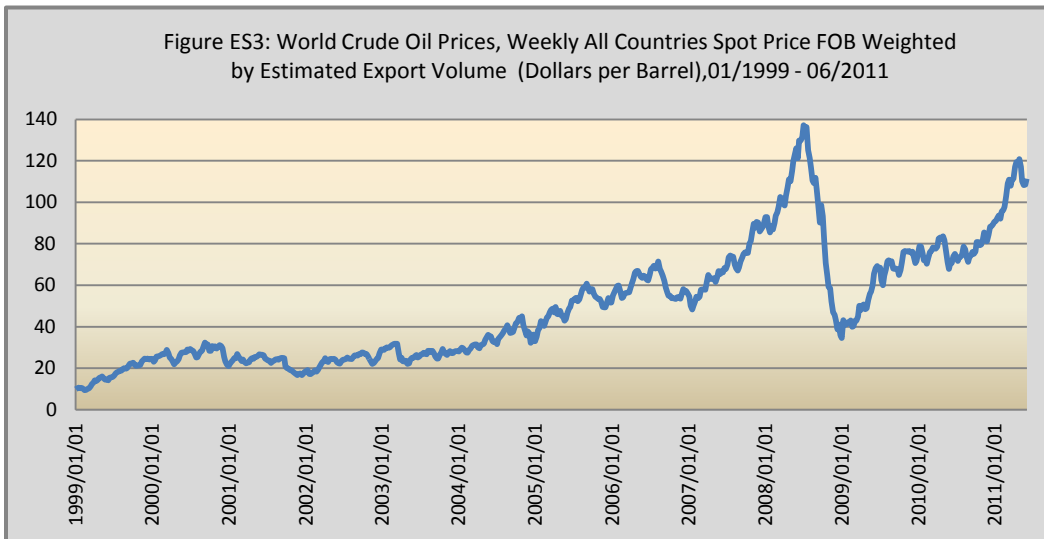
The other side of the Dutch Disease is – in the Canadian context – the relative decline of merchandise exports. Figure ES4 confirms such a decline. We do have a time lag as the decline of the relative importance of merchandise exports starts approximately 8 years after the start of the upward trend in the value of the Canadian dollar. This is not surprising as initially firms are able to “survive” in a higher Canadian dollar environment, but eventually the competitiveness challenge associated with it becomes insurmountable.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

For energy producing regions, the increase of energy prices has resulted in growth and prosperity, but the flip side of the equation is that non energy producing regions have suffered from the associated higher Canadian dollar and many of these regions are still scrambling to adjust to this new reality. The Dutch Disease is surely not the only factor at play – other factors are discussed in various parts of the report – but it seems to be an important one.

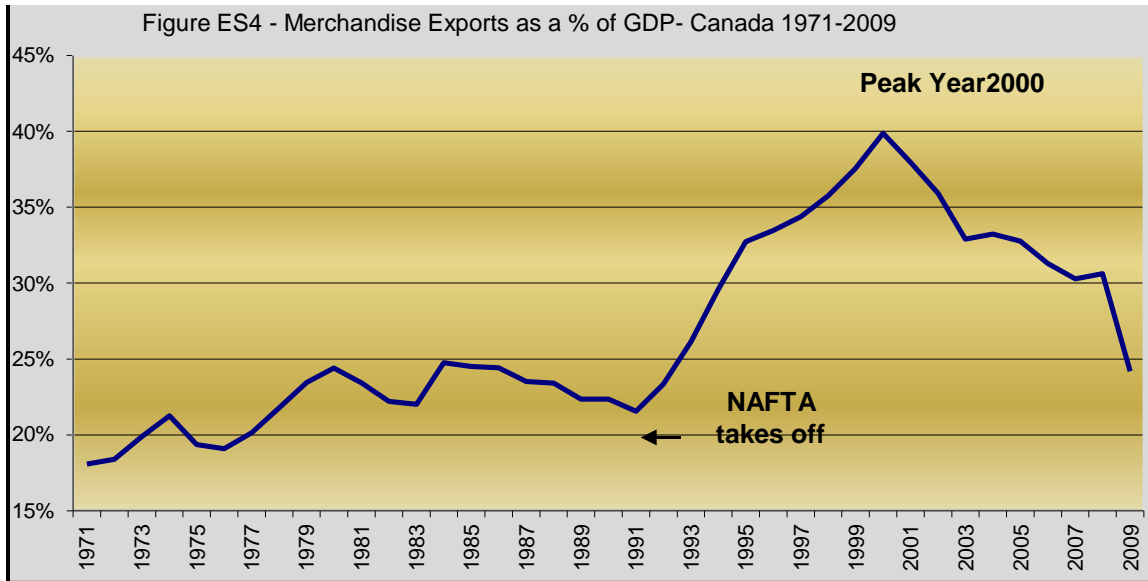


Source: Authors' calculations from Bank of Canada. <http://www.bankofcanada.ca>



Source: Authors calculations from U.S. Energy Information Administration.
www.eia.gov

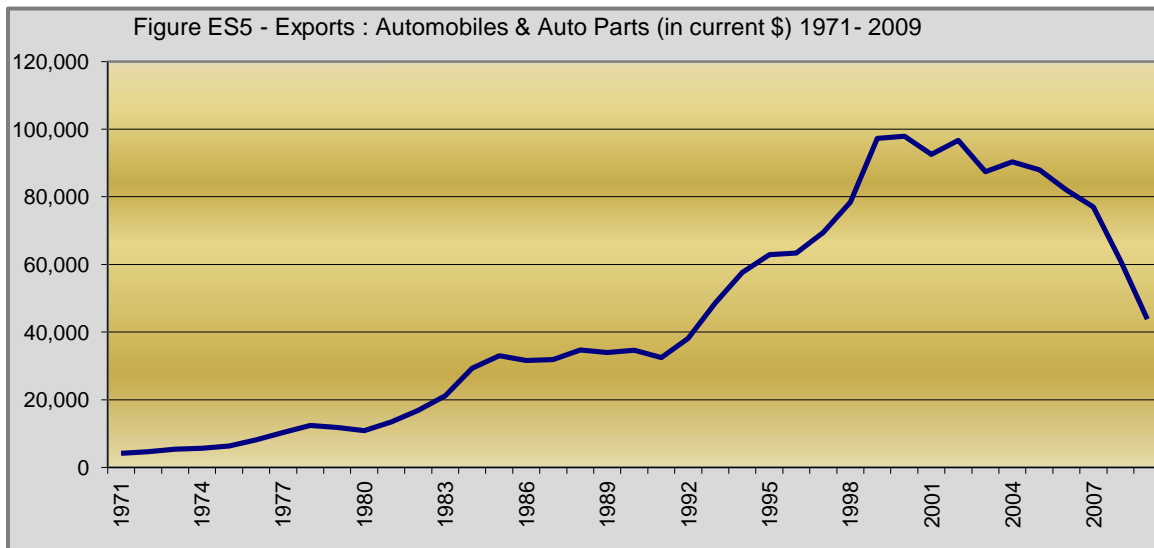
The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges



Source: Authors calculations from <http://www.ic.gc.ca/eic/site/tdo-dcd.nsf/eng/home>

3. The 2008 recession reveals underlying symptoms

Something snapped around 2001, reversing past trends where merchandise exports as a share of national GDP was steadily rising (Figure ES4), especially after NAFTA (Section 1.3). What happened? Was it 9/11 and the subsequent tightening of the Canada-U.S. border? Perhaps. The rise of the Canadian dollar – discussed in the previous point – is certainly a factor. Since 2002, the share of Canadian exports destined to the US market has steadily declined, a decline in large part a reflection of the decline of exports from the automobile industry, an industry almost entirely concentrated in Southern Ontario. The post-2007 subprime ignited recession and subsequent collapse of the US auto industry cannot solely explain the drop in motor vehicle and auto parts exports as the downturn began some seven years earlier (Figure ES5).



Source: Authors calculations from <http://www.ic.gc.ca/eic/site/tdo-dcd.nsf/eng/home>

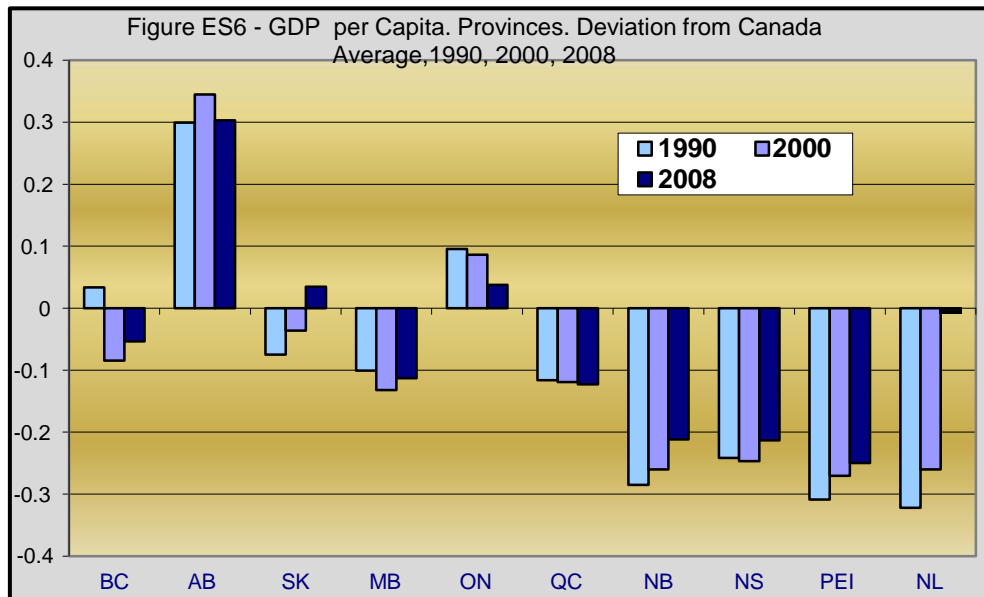
The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

More deep-seated factors were also at play; but what are they? At the same time, manufactured goods (outside the auto industry) have steadily increased as a source of Canadian exports, now accounting for about half the total value of all goods shipped. This in turn suggests the emergence of a more diversified export base, rooted in competitive advantages specific to Canada's different regions, which is not all bad news.

4. A reduction of interprovincial disparities

Cross-Canada regional disparities still matter (Section 1.4), but a close look at recent trends reveals a definite movement towards a lessening of interprovincial differences (Figure ES6). The most stunning regional turnaround of the last decade is without a doubt that of Newfoundland and Labrador. More surprisingly, if somewhat less spectacular, is the systematic move up in GDP per capita of the three Maritime Provinces. On the basis of current trends, one can argue that Atlantic Canada is no longer Canada's economic stepchild or, if the trend continues, will soon cease to be.

Quebec's GDP per capita – compared to Ontario – has ceased to deteriorate, picking up since the 1990s, although still systematically below that of Canada's largest economy. In the west, Saskatchewan and Manitoba, which have historically been, with Quebec and the Atlantic Provinces, the lagging provinces in the country, have lately outperformed Ontario with respect to GDP per capita. This is especially true for Saskatchewan.



Source: Authors' calculations from Statistics Canada data.

5. Accelerating structural change

The structural transformation of the Canadian economy has accelerated in the last ten years, mirrored not only in the shift in jobs out of manufacturing and primary sectors (with the notable

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

exception of extraction) but also in the rapid growth of employment in the most information and knowledge-rich industrial class: professional, scientific and technical services (Section 1.5). This shift continues to fuel the growth of large urban areas. Much of the fall in manufacturing employment between 2001 and 2006 was in high tech industries, reflecting the end of the 1994-2000 techno boom and the subsequent collapse of Nortel. This did not have a lasting impact on the three urban economies (Ottawa, Montreal and Toronto) most affected by associated job losses, in part as a result of the capacity of large urban economies to replace job losses by growth elsewhere in the local economy. The same can be said of job losses in the apparel industry.

Job losses in industries generally located in small and medium-sized towns – such as pulp and paper, smelting and other highly capitalized industries – are a different matter. The affected labour force (primarily male) has skills which do not match the growing service and knowledge-based economy, which more over tends to concentrate in larger cities.

6. Does Canada still have an economic center of gravity?

We have observed a relatively good performance of Canada's regional economies east of Ontario, at least in terms of GDP per capita (Section 1.4). If the trend continues, it heralds the possible – or at least the weakening – of the secular shift westwards of Canada's centre of gravity.

7. The attractive power of cities continues to grow

Economic activity and people in Canada continue to concentrate in large cities (Section 2.1). The share of employment and population in Census Metropolitan Areas (CMAs) continues to grow. Urban concentration tends to accelerate during periods of high growth and decelerate during recessions: growth stimulates concentration. What lessons can be drawn from these trends? First, the most rapidly growing industries in the Canadian economy are also the most dependent on agglomeration economies; that is the advantages associated with a location in a large city. Second, new information technologies (IT) do not on balance favour the decentralisation of economic activity; rather, the opposite is true.

The most consistently job-creating CMAs – both before and after 2000 – are either large metropolitan areas or places nearby (Section 2.3).

8. Challenges for non-urban economies

As described in point 8 above, the most rapidly growing industries in the Canadian economy are also the most dependent on agglomeration economies (Section 2.1). As long as this is so, larger cities will, on average, continue to grow more rapidly than small towns and rural areas. Regions lacking a large urban area (population at least 100,000) are at a handicap. Given current trends, there is little reason to believe that this will change.

It is unrealistic to expect growth automatically to revitalize outlying non-urban economies. The maxim "a rising tide lifts all ships" does not hold in regional economics. The demand for labour may well be growing in a nonmetropolitan region, but it will be growing even more rapidly in cities.

9. High tech

The highest concentrations of high tech manufacturing employment are in the largest CMAs, but also in “central mid-sized cities” (e.g. Kitchener-Waterloo) and nearby small towns and rural communities, which also show the greatest increases since 2001 (Section 2.2). The relative absence of high tech manufacturing in peripheral locations, whether urban or rural, is striking. The geography of high tech manufacturing is thus different from that of knowledge-intensive services. Small size is not necessarily a handicap provided that the community is located at a reasonable distance from a large urban centre.

The importance of location, and not simply size, for high tech manufacturing is demonstrated by the clustering of employment in and around three cities, Toronto, Montreal and Ottawa, in what might be called Canada's high tech core, accounting for 73.9% of associated jobs in 2006, compared to 75.5% five years earlier.

We would normally expect high-tech manufacturing (definition in Appendix 1) and knowledge-rich services to co-locate, with manufacturing often locating in small and mid-sized places close to large urban centers. Using location quotients², we find that for knowledge-rich services, the five largest CMAs consistently exhibit the highest location quotients (Section 4.4). Quebec City is emerging as a knowledge-rich service centre, which now joins the other three large urban centres in Central Canada to form the “Central Canadian Corridor”. We can also point out that the apparently footloose nature of knowledge-rich services in non-metropolitan resource areas (i.e. Northern Alberta), with high quotients in one year, but not the other, is indicative of service firms (consultants, engineers) that move in times of boom and out in times of bust.

Map ES1 presents the relative concentration of high-tech manufacturing employment in 2006 for all of Canada, and highlighting Southern Ontario and Southern Quebec in the lower-left corner. We see the predominance of the area in and around the Toronto-Ottawa-Montreal triangle, Canada's high-tech core. Smaller concentrations are also apparent in the Maritimes (the Maritime “cluster”) and around Winnipeg. Comparing these results for 2006 with those from 1991, we see an eastward shift in high-tech manufacturing in Central/Eastern Canada. It is also noteworthy that Edmonton and Calgary exhibit high-tech manufacturing concentrations below the Canadian average have also seemingly failed to generate concentrations in nearby small and mid-sized places³. These two are the only urban centres (together with Vancouver) with populations over 500,000 which, apparently, have not spawned what we may call a HT

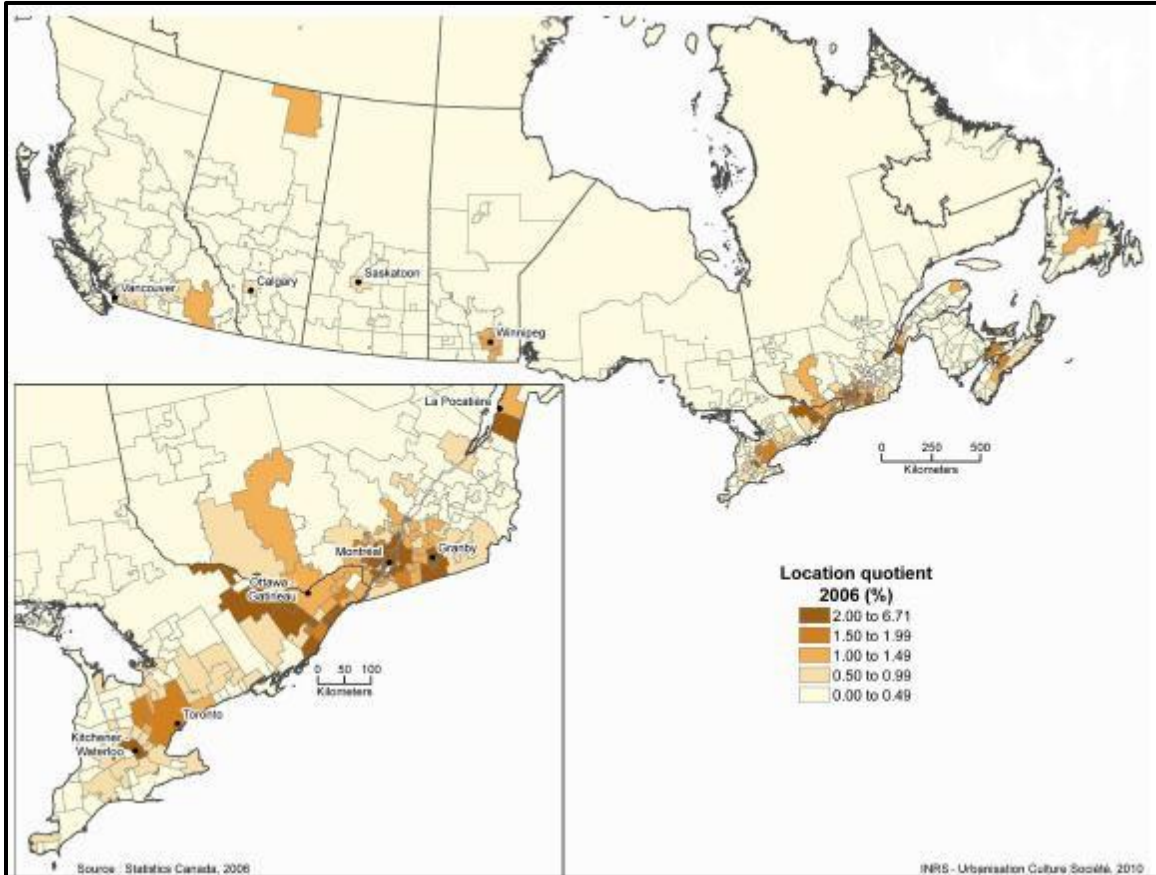
² Employment location quotients describe the relative importance of employment in a sector in a given region compared to the relative importance of employment in the same sector in a reference region (in this case, Canada)

³ The isolated concentrations in more remote areas should not be taken too seriously. They refer to very small numbers, but which appear big because the local economy is small. Thus, the apparently high quotient in northern Alberta refers to some 10 jobs in the medical equipment class. Such are the pitfalls of percentages calculated for small totals.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

manufacturing shadow. We may interpret this as further evidence that their respective strengths in knowledge-rich services is largely linked, notably in Calgary, to their role as service centres for the oil and mining sectors. Vancouver again appears surprisingly weak, although with quotients higher than for the two Albertan urban centres.

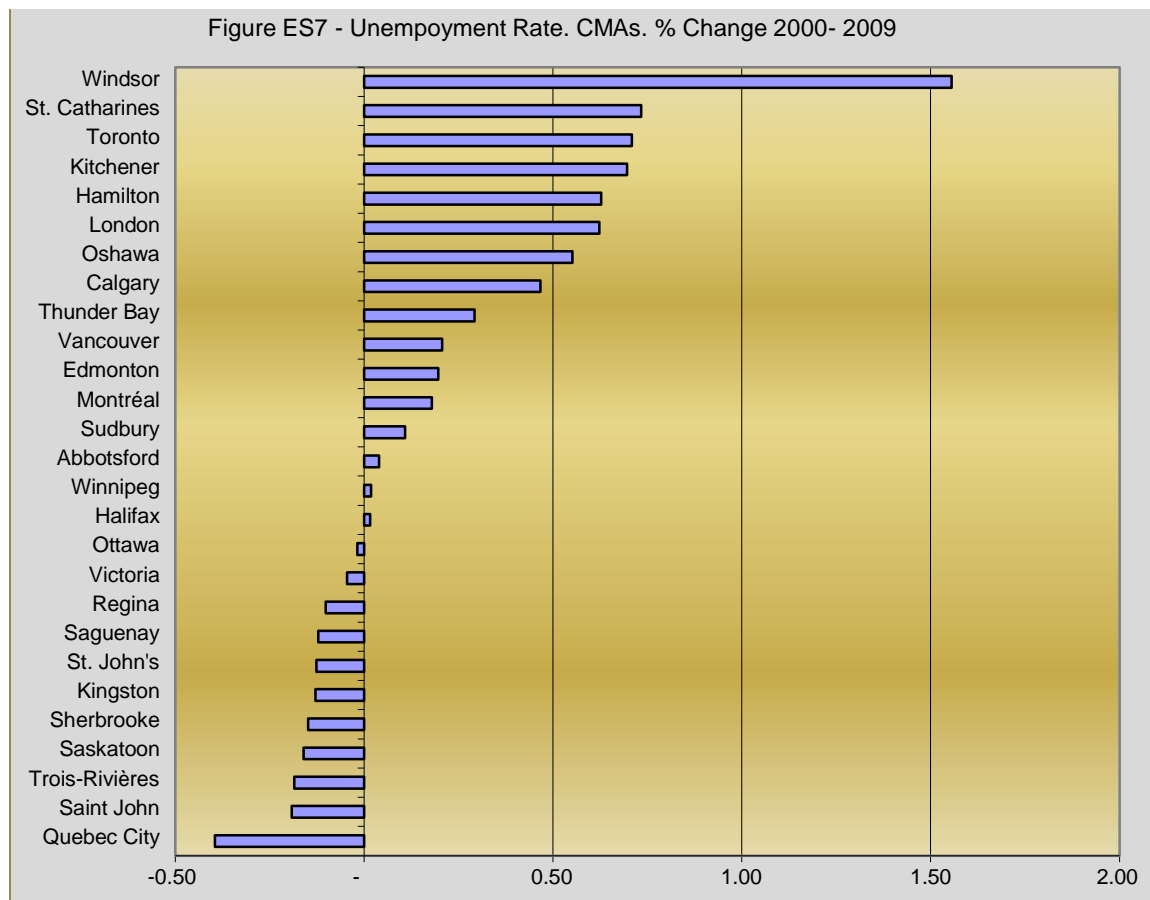
Map ES 1: Employment in High-Tech Manufacturing, Canadian Regions, Location Quotient, 2006



10. Southern Ontario's challenges

Analyzing the percentage change in the unemployment rate between 200 and 2009, we find that the six CMAs that had the sharpest relative rise in unemployment are all located in Southern Ontario, including Toronto (Section 2.3). Focusing on the four CMAs located west or south of Toronto (Hamilton, St. Catherines–Niagara, London and Windsor), we find that the labour markets started to deteriorate in what is basically the stretch between Buffalo and Detroit well before the onslaught of the 2007-2010 recession with the breaking point somewhere between 1995 and 2005, depending on the city. Something has seemingly snapped in Ontario's Peninsular South, but what?

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges



Source: Authors' calculations from Statistics Canada data.

11. The rise of yesterday's laggards: the fragile turnaround of some resource regions

The collapse of the ground fishery and downstream industries in the 1990s devastated numerous communities in Atlantic Canada, most notably in NL; the damage is still being felt (Section 1.5). However, the relatively positive performance of the three Maritime economies over the last ten years suggests that industrial diversification, although often painfully slow, is taking place, in this case towards locations with better access to markets. The transition, market access aside, may be easier for regional economies founded on fishing and – especially – farming, perhaps because of more deeply rooted traditions of small business and entrepreneurship.

The history of “heavy” and extractive industries is very different. The sharp decline in employment in the forestry and associated industries (pulp and paper mills mainly) is racking havoc in many small towns. Industrial reconversion and diversification is (and will be) difficult. Some towns will decline or perhaps even close entirely. As extractive sector employment is growing while this is happening, many workers will be able to make the switch as skills requirement are not incompatible. Nonetheless, communities that loose these workers are not as fortunate.

12. Canada's large metropolitan areas

Focusing on employment in some of Canada's largest metropolitan areas (Toronto, Montreal, Vancouver, Calgary and Ottawa) we find that since the mid 1990s, Calgary systematically exhibits the lowest unemployment rate (Section 2.4). Also, since the mid 1990s, the rates for Calgary and for Vancouver tend to rise and fall together, suggesting exposure to similar fluctuations in external demand. Montreal's unemployment rate remains systematically above the Canadian average over the whole period, a reflection both of a (still) fundamentally weak labour market and the historically lesser mobility of Francophones. Most noteworthy, however, is the evolution of Toronto's unemployment rate, moving from the lowest (best) to the highest (worst) position surpassing even Montreal's unemployment rate for the first time since Statistics Canada began to publish such data (1966). Analyzing each of these areas' recent trends, we find some positive signs and some less so:

The Greater Ottawa area seems, on the whole, to have to have survived the dotcom bust (notably the fall of Nortel) without too much damage and appears poised for continued growth.

Montreal, although still a comparatively slow growth economy, appears poised on a renaissance of sorts, founded on its diverse industrial base, the apparent strength of Southern Quebec's manufacturing cities, and on a growing specialization in cultural and "creative" industries.

Vancouver continues to grow and to attract people, irrespective it seems of the broader economic context. An appropriate designation might be the Teflon city, whose growth is as much founded on its "residential" as on its economic advantages.

Toronto shows signs of over-specialization in finance and related industries, making it overly vulnerable to business cycles. Given also the current poor performance of manufacturing in Southern Ontario, one may question whether Toronto's current growth rate is sustainable.

Calgary remains highly specialized in extractive-linked industries (the oil patch) with few clear signs that its economy is diversifying. Here again, one may ask whether its current growth is sustainable.

13. A synthetic region approach

A key question concerns the extent to which growth differences observed across one dimension are in fact attributable to other factors (Chapter 3). For instance, it is legitimate to ask whether the differences in growth rate observed between Alberta and Ontario are attributable to differences in industrial structure, differences in level of urbanisation, differences in human capital, or to some factors specific to each province and not reducible to these other dimensions. To answer these questions, we use regression analysis. In turn, we use various regional definitions and various variables. We thus use regional groupings with provinces as the

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

reference, labour markets as well as what we call synthetic regions. This is done by subdividing Canada according to city size and centrality using as a criteria a 100-150km distance (a maximum of a 90 minute drive) from a major metropolitan area. The resulting regional groupings are what we call synthetic regions.

What do these regression analyses tell us?

First localities in Ontario are now, all else being equal, the slowest growing localities in Canada (the situation is probably even more marked now, since the results in the pertinent model only extend to 2006). This is a medium term trend, since, after controlling for industrial structure and accessibility, Ontario's slower growth began to emerge in the 1990s.

Second, differences *within* provinces (i.e. synthetic regions) are becoming increasingly important for understanding local development, even as differences between provinces are losing their dominant role.

Third, notwithstanding straightforward correlations and initial regression results to the contrary, local factors seem to have little systematic connection with local growth. Their connection with local growth is determined by the nature of the local economy and by its accessibility to outside markets. Localities, especially smaller ones, are a little like boats on the sea: although their captain, crew and rigging can make a difference, weather conditions will often determine the success or failure of their journey. The larger the ship, the more it is able to slice through the weather and determine its own course.

Perhaps the key result of this analysis is the increasing importance of industrial structure in determining local employment growth, which seems to have been particularly important in the early 2000s. Given the crisis in the financial and automobile sectors since 2008 – which have hit southern Ontario particularly hard – and given the continued role that oil and gas extraction, and mining, play in many parts of Canada, it is unlikely that the effect of industrial structure on local development outcomes will decline in the foreseeable future.

14. Industrial structure / specialization

We will not dwell in any great detail over which types of structure are connected with (or not connected with) employment growth (Section 3.4). The important point is that a key factor in understanding why a particular locality grows or declines is, increasingly, the type of industry there. This may appear obvious, but has important policy implications. The growth or decline of particular industries is usually driven by global markets, technological factors and exchange rates. None of these can be controlled or influenced by local authorities, and most are beyond the power of influence of national governments (though these governments can, of course, influence the rules that govern the way in which these factors impact industries within the country). Furthermore, each locality has an industrial structure that only changes slowly over

time (Shearmur and Polèse, 2005b) – it is difficult (though not impossible) to overcome an industrial heritage, but this can take generations. It is not a matter of simply switching industrial structures over a three year period.

15. Distance still matters: the importance of accessibility

Canada is highly integrated in the North American and world economies, but access to these markets is not homogeneous across the country's regions. It is thus legitimate to wonder to what extent having good access to markets increases or decreases a locality's level of employment growth. Furthermore, accessibility is not a one dimensional concept. We thus use a regression model which allows us to analyse the impact of four types of accessibility: road, air, rail and ports. Finally, we add population size, as it reflects local market size.

We find that during the 1990s, slower growth in Atlantic Canada localities can be attributed to their lower accessibility. This is not so in the early 2000s, when localities in Atlantic Canada grow more slowly even after taking their accessibility into account. The same general trend appears when we focus on the impact of industrial structure in Canada combined to accessibility. During the 1990s, the impact on local growth of a particular structure varies depending on how accessible the locality with that structure is to markets. By the early 2000s industrial structure is playing a predominant role in understanding the growth in localities, and this role is not greatly modified by controls for accessibility. Finally, including accessibility in our synthetic region (i.e. a combination of size and relative proximity to large metropolitan areas – point 15) analysis alters, but does not completely overshadow the synthetic region effect. In particular, it highlights the fast employment growth during the early 2000s in medium sized peripheral cities, and the fact that growth in central regions in the late 1990s was primarily attributable to their high market accessibility.

What types of accessibility are associated with employment growth? In the early 1990s it is access to ports, local road accessibility, access to outside markets and large local markets that are associated with local employment growth. In the late 1990s local road accessibility, access to outside markets and access to ports are connected with employment growth. In the early 2000s none of the three principal dimensions of accessibility play a role (after controlling for other factors), probably reflecting the resurgence of employment growth in resource industries located in peripheral (and hence not necessarily accessible) regions.

16. Distance still matters: the case of wholesaling and distribution

An analysis of the concentrations of employment in wholesaling and distribution in 1991 and 2006 confirms that this industry is sensitive to location, specifically to market accessibility, but also highly sensitive to scale economies (Section 4.3). The picture for 1991 confirms the importance of "centrality"; that is, the tendency to seek out a location as close as possible to the geographic centre (or transport hub centre) of the market to be served. Much like

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

manufacturing, due to their space requirements (large warehouses, areas for trucks, etc...), marketing and wholesaling activities, although naturally drawn to large urban centres, will not necessarily locate directly in a large city, but rather in smaller places nearby with lower land costs, and with good road (and rail) connections. Thus we have a concentration around Toronto and Montreal. Three regional centres also stand out: Vancouver, Saskatoon, and Moncton, the latter two favoured by the centrality of their location, respectively in the centre of the Prairies and the Maritimes. Other concentrations are found around Calgary, Winnipeg, and Halifax.

The picture in 2006 is not all that different, with however an apparent strengthening of the greater Toronto / Southern Ontario region compared to others, suggesting a growing centralization of distribution activity in Canada, the combined outcome most probably of technological change (bar codes, containerization, etc..) and organizational changes (Super stores...) allowing for ever greater economies of scale. It also confirms the continuing presence of regional distribution centres, plus the emergence, apparently, of distribution points along the U.S. border (note southern Alberta) and centres to service Northern resource economies. Rouyn-Noranda and Val-d'Or in the Abitibi region of Quebec are examples of entry and distribution points for exploration, mining and hydro power activities further north.

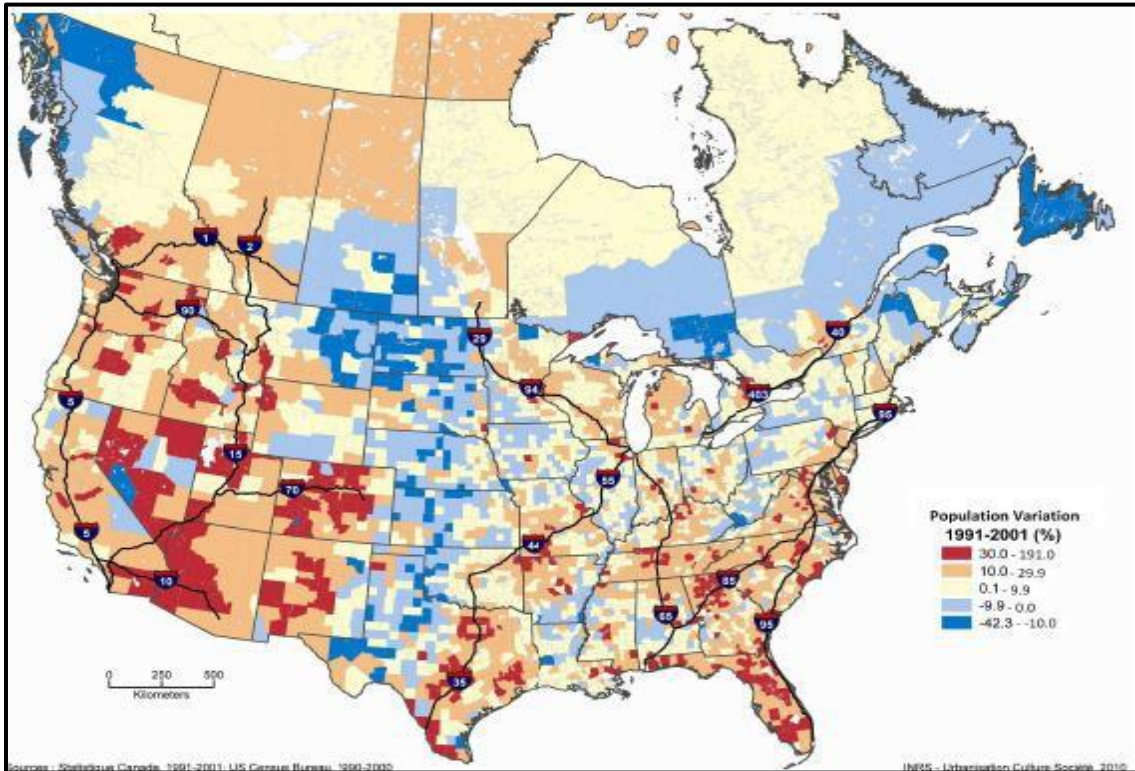
17. "Love thy neighbour"

Maps ES1 and ES2 illustrate the geography of population change in North America for the years, respectively, 1990 to 2000 (1991 and 2001 for Canada) and 2000 to 2006. At least two things stand out:

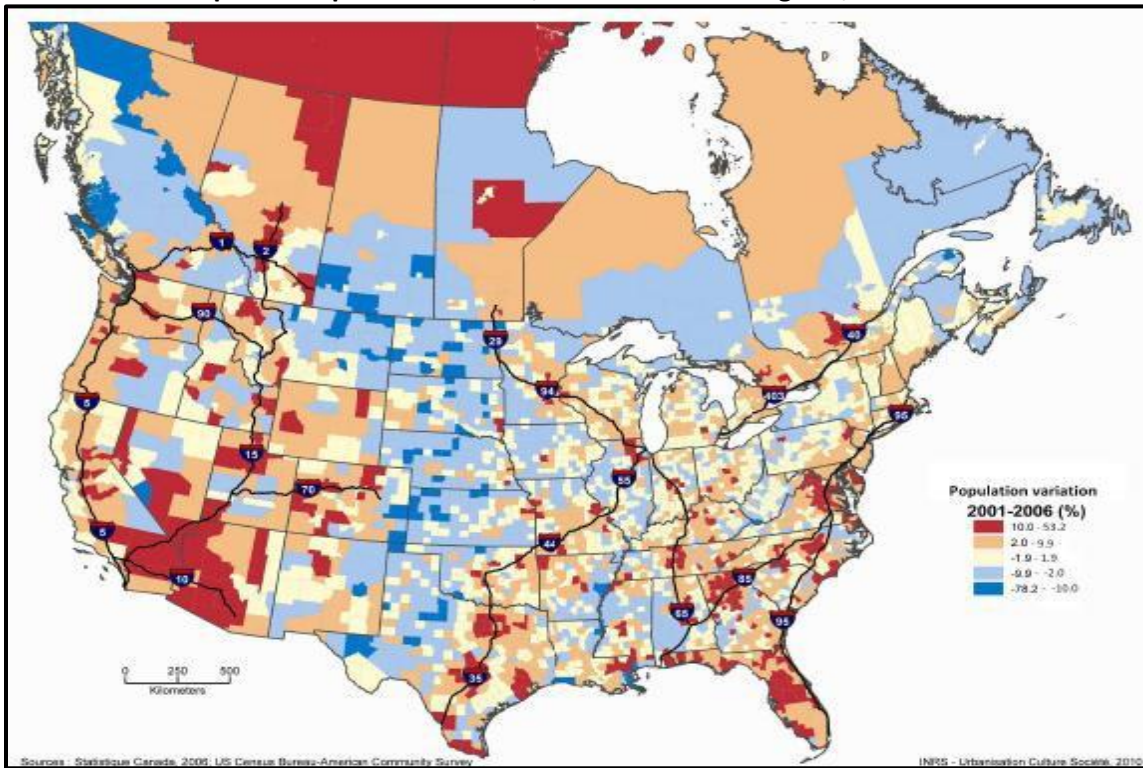
- a) the Canada-US border makes little difference; it would be difficult to identify did we not know it existed. Population trends reflect similar basics on both sides of the border; and
- b) the trends are essentially the same for the two time periods. Three broad swathes of territory in North America seem to be irremediably emptying out: 1) the great dry interior of the continent stretching from south Texas to central Saskatchewan; 2) the cold North-east (basically the Canadian Shield) stretching from Northern Ontario through Northern Quebec to Newfoundland and Labrador; 3) the Appalachian spine stretching from Eastern Kentucky to Upstate New York. Parts of the central Midwest and the Mississippi Valley also continue to lose population. In all of these areas, some places (urban places notably) are growing, but the overall picture is one of systematic decline, driven by forces that are seemingly difficult to reverse. Without necessarily falling into the trap of geographic determinism, Maps ES1 and ES2 are evidence of the continuing power of geography. Some locations are simply more advantageous than others.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Map ES 2: Population Growth, North American Regions, 1991-2001



Map ES 3: Population Growth, North American Regions, 2001-2006



The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

At least three major growth corridors stand out centered around U.S. Interstate Highways: 1) an eastern corridor – basically following I-95 and I-85 – stretching from New York to Atlanta; 2) a mid-continent corridor – along I-35 and I-44- stretching from the Mexico-Texas border to Chicago, a continuation of the principal trade route linking Mexico City and Monterrey, Mexico, to U.S. markets; 3) a northern Midwest corridor – via I-94 and I-29 – linking Chicago with Minneapolis-St Paul, but also with Winnipeg.

Seen in this light, it is impossible to totally divorce the evolution of Canada's regions from that of US neighbours. Who the neighbours are will not only influence growth trends but also industrial structure and trade relationships. Canadian provinces have a particular strong trade relationship with the immediate neighbours to the south, and NAFTA has amplified these relationships in various regions along the Canada-U.S. border.

The regionalized nature of cross-border relationship also sheds a different light on Toronto's role as a business service centre. Although indisputably number one – certainly in finance (recall chapter 2) – Toronto's strength is in part founded on its location at the centre of Canada's largest regional economy and also in its role as corporate intermediary with U.S.-based partner corporations. Toronto's integration into the Midwest U.S. economy, certainly more so than Montreal or Vancouver, probably goes some way in explaining its comparative underperformance in recent years. By the same token, a second look at Maps ES1 and ES2, provides elements of explanation for the relatively good performance in recent years of southern Manitoba (in and around Winnipeg) and parts of the Maritimes. The Maritime Provinces, although not located on a highly visible growth corridor, are linked to a neighbour – New England - which has witnessed a remarkable turn-around in recent years, fuelled by Boston's growing high-tech economy. In cases where cross-border cost or regulatory differences make it advantageous to produce certain products (or parts) in nearby Canadian locations, New England-based firms may be tempted to look to the Maritimes.

Similar reasoning can be applied to Southern Quebec and to Lower Mainland B.C. (for Seattle-based firms). And the presence of continental growth corridors alters the perception of Winnipeg and surrounding Manitoba as irremediably poor locations (weather notwithstanding, about which little can be done). From a continental perspective, Winnipeg is clearly "peripheral"; but it is located at the northern tail end of an apparently dynamic growth corridor.

18. Manufacturing corridors

Map ES3 illustrates the location of manufacturing employment in North America (Section 4.2 – 4.3). The U.S. – Canada border seems to make little difference, with however the notable exception of Southeastern Quebec and the Maritimes. Access to ports, waterways, and other manufacturing clusters are visibly major location factors. Almost no manufacturing takes place

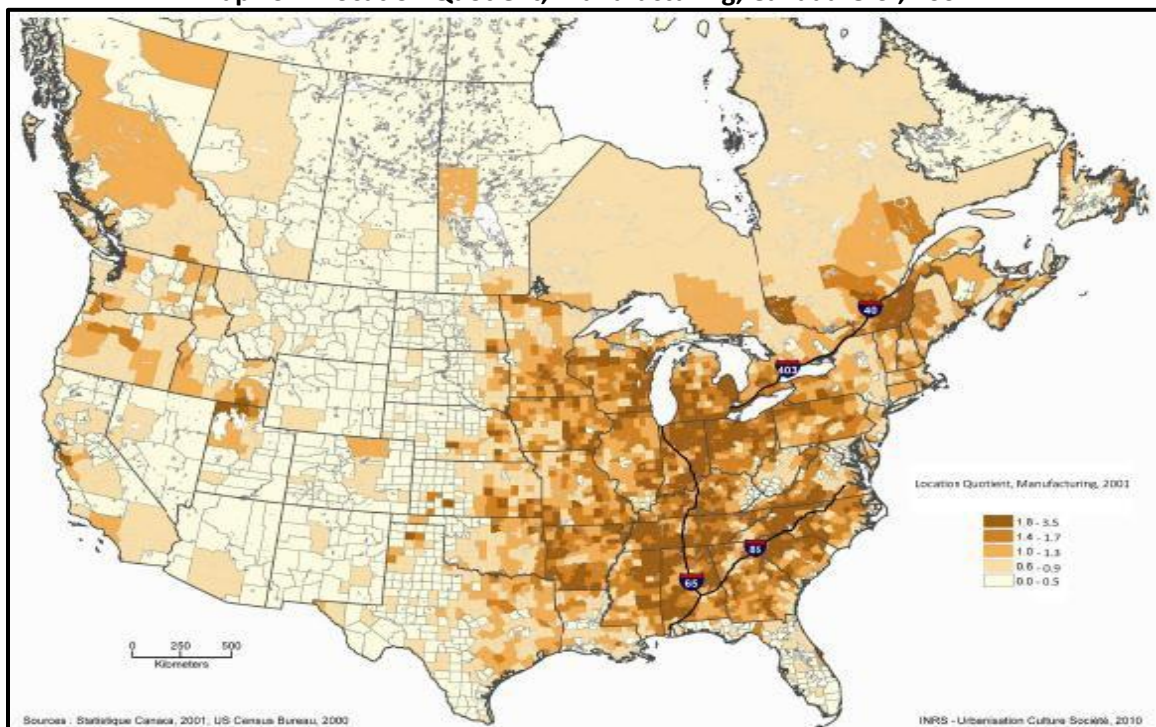
The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

in the Great Plains and the Prairies (with the exception of Southern Manitoba, which shows up as a geographical extension of manufacturing activity in Northern Minnesota).

Technological changes notwithstanding, water remains the most cost efficient transport mode, specifically for long-hauls and bulk, and necessarily so for cross-oceanic merchandise trade (except very high value-added, relatively light-weight goods, transportable by air). All other things being equal, a producer dependent on overseas trade will seek to minimize the time and distance goods travel overland (at higher unit costs) and to maximize the distance by water.

Containerization has lessened the need to be located directly alongside a port – now simply a momentary stopover in an otherwise seamless logistics chain - but it has not reduced the cost advantage of locations within a reasonable trucking (or rail) distance of a port, generally within a 100 to 200km range. The implications of this for Canadian regions are not difficult to deduce. Most manufacturing, unless directly tied to resources (and even then), will generally seek out locations within a reasonable distance of a port, preferably a container port.

Map ES 4: Location Quotient, Manufacturing, Canada-U.S., 2001



19. Costs matter I: the intrusive rentier revisited

In Polèse and Shearmur (2002) we introduced the Intrusive Rentier Syndrome concept to help explain why local resource-based economies, in particular those in peripheral regions, find it difficult to diversify into other sectors. The term “rentier” refers to firms, generally large and highly capitalized, that are able to earn a premium (a “rent” in economic parlance) due to a

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

particularly rich local resource, be it trees, hydro power, oil or something else. In Eastern Canada, large paper mills, aluminum plants, and smelters are typical examples. They are “intrusive” (no insult intended; this is economic shorthand) because they: a) drive up local wages; b) undermine the competitiveness of other sectors; c) create a mindset which is not necessarily conducive to business start-ups and innovation. Such “local” factors are almost impossible to measure and, as such, difficult to model. Much of the evidence is admittedly impressionistic. However, high-cost resource-based economies have, as a rule, found it difficult to diversify into other sectors. As is pointed out in chapter 3, high wages can have two opposing effects, again making it difficult to model a simple statistical relationship. On the one hand, high wages generate local demand and attract talent and human capital; on the other, they can act as obstacles to diversification and growth; that is, if the wages paid are above what “normal” market conditions would warrant.

The idea we shall explore here is that the Intrusive Rentier Syndrome is not necessarily limited to peripheral resource-based economies; that larger urban economies and regional economies not dependent on resources are also potentially vulnerable. The vulnerability of Albertan communities, including its two largest urban centres and resource-driven Canadian regional economies is, by this argument, fairly self-evident, requiring little further comment. More to the point is the possibility that variants of the Intrusive Rentier Syndrome may be taking hold in other parts of Canada, specifically in southwestern Ontario, the traditional heart of the automobile industry.

20. Costs matter II: labour costs and other factors

Map ES3 tells a second story. In the U.S., the highest concentrations of manufacturing employment are no longer found exclusively in the industrial heartland of the Midwest, the so-called Rustbelt (basically, the Pittsburgh-Detroit-Chicago axis) and even less so in the old eastern industrial cores of New York and Philadelphia. Plants have moved south: textiles and clothing into the Carolinas; automobiles and other steel-based industries down the river and highway systems leading to the Gulf of Mexico. Interstate I-66 linking Chicago and Mobile is the classic corridor of delocalisation for auto plants. One of the reasons for this industrial exodus essentially boils down to the desire to escape high labour costs and unionization. Southern States have historically lower labour costs and are traditionally less union-friendly. They also had the added advantage (besides good transportation infrastructure) of a fairly dense network of good-sized cities, able to provide the specialized services modern manufacturing has come to rely on. Note the concentrations of manufacturing around Atlanta, Birmingham, and Nashville. In the late 1990s and early 2000s, after controlling for region, synthetic region, human capital and level of specialisation, employment growth tended to be faster in low wage localities. The effect is quite large. For each increase in \$10 000 in local wage levels local employment growth is 1.9% (early 2000s) to 4.2% (late 1990s) lower. This effect disappears in the early 2000s after controls for industrial structure, but the negative effect remains for the late 1990s.

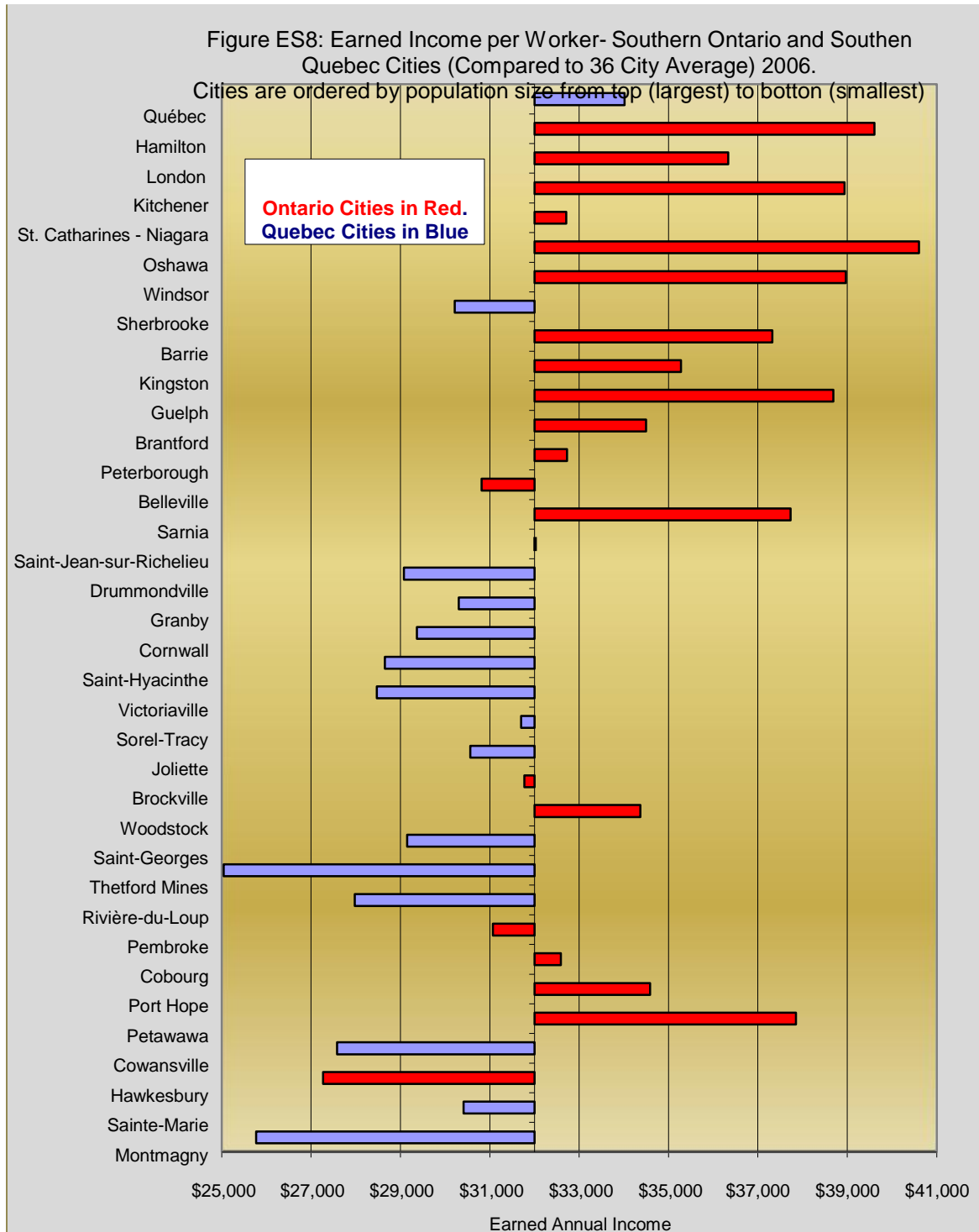
The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

In some cases, comparatively low wages are not necessarily associated with more jobs, a sign that the Intrusive Rentier is not simply a matter of wages, but also in some cases of legacies left behind by industrial structure, whether sociological, aesthetic or other, long after the plants or mines closed and wages fallen. In cases such as Cape Breton and Sudbury distance (from markets) also comes into play, meaning that even a fall in wages, unless very sharp, may not be sufficient to re-establish competitiveness. On the other hand, the example of Moncton (NB) serves to highlight the fact that a local economy can successfully manage reconversion). It is a mid-sized urban economy founded on services rather than manufacturing. Moncton is a regional hub and distribution centre, exhibiting high location quotients in rail, air, and courier services; but also in professional and scientific services and in broadcasting and insurance, the latter two in part the reflection of its role as the cultural and (mini) corporate centre for the Acadian community. This is in contrast with the situation prevailing not more than a few decades ago. The city experienced the demise of its industrial base – the rail rolling stock maintenance industry – starting in the 1960s and culminating in the 1980s with the closure of the “Moncton Shops”. Moncton’s successful reconversion was in part founded on a unique combination of location and local dynamics. Its workforce has “successfully” adjusted to changing wage and work conditions.

21. Costs matter II: Southern Ontario vs Southern Quebec

Wages are, as a rule, higher in larger cities, a reflection of the positive impact (on productivity) of agglomeration economies. Also, as expected, wages are generally higher in “central” cities, closer to large CMAs, than in more distant cities of a similar size. In Figure ES8, where we present Southern Ontario and Southern Quebec cities in declining population order, we do find that the relationship between wages and population size is not straightforward. The same could be said of other regions in Canada. Several factors are at play, such as the impact of “Rentier” cities driven by resources. But getting back to Figure ES8, why are wages systematically lower in Quebec cities compared to cities of comparable size in Southern Ontario? Many factors influence wages; a satisfactory answer would require a more complete statistical analysis. In efficiently functioning labour markets wage differences are in principle perfect reflections of productivity differentials. Many factors, in turn, influence labour productivity, among which are education and the quality of the capital stock and of public infrastructures. However, wage differences at any given moment in time are also a reflection of the interplay between supply and demand. If supply is “sticky” (does not, in the case at hand, fall when wages are low) then wages may well stabilize at a level which is below what pure productivity differentials would warrant. Francophones are, as a rule, less geographically mobile than Anglophones, producing “stickier” labour markets. It may well be that small and mid-sized towns in Southern Quebec enjoy a “productivity premium” for certain types of manufacturing; that is, labour costs are lower for comparable productivity levels, lower specifically than in Ontario and in neighbouring U.S. states.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges



Source: Authors' calculations from Statistics Canada data.

Let us return to the Intrusive Rentier. Not only in several cases do Southern Ontario firms face a more mobile labour supply, more prone to move out, but also a local industrial structure dominated by large, highly unionized, plants, producing an environment of high wage expectations. Hamilton and Woodstock are cases in point, with historical concentrations, respectively, in steel and in the auto industry. The industrial specialization may have disappeared, but the legacy can linger on. It is difficult to precisely factor in all the elements that explain inter-city (or inter-regional) wage differences. It is as difficult to rigorously prove that wages in some Ontario labour markets are above what pure productivity indicators would allow as it is to prove that those in certain Quebec markets are below. However, the data suggests that the possibility cannot be excluded.

Analysing successful small centres in Southern Quebec compared to Southern Ontario, we have identified some factors which may explain – at least in part – the differences. These are labour costs (lower wages and a more stable (less mobile) labour force), location (proximity to major urban centres, to a major container port, to the U.S. market, and having fairly dynamic U.S. neighbours), and the industrial structure (a historical legacy of low wage industries).

22. The residential economy: the rentier economy

A residential economy is an economy that survives not because it trades goods or services, but merely because people live and spend money there that has been earned elsewhere. If the number of such people in a given community is sufficiently important, we can have a functioning economy – with local services, construction companies and retail – that lack any export or trade base.

The first mechanism through which a residential economy can exist is presence of rentiers, a definition usually associated with people who live off investment income and can choose to live in locations that are far from the place where their money is invested. However, this aristocratic image of rentiers needs to be re-evaluated in the light of an aging population. Indeed, *each person living off retirement income is a rentier*. Therefore, the number of rentiers in Canada is dramatically increasing. If some of these people migrate, and if they tend to migrate to the same areas, then they will have a considerable economic impact, particularly on smaller communities in which it does not take much to keep the local store open and the local services functioning.

Why would these people migrate? There are a variety of reasons, we raise four possibilities: to be closer to children and grandchildren, to be closer to hospitals and medical services, to move to a previous place of residence, and to live in a pleasant and affordable location.

23. The residential economy: Long distance commuters

Long-distance commuters can have a strong influence on small local economies. There are two ways that this can occur). First, there is an increasing number of people, particularly professionals and creative people, who do not need to go to a central place to work every day. These people can often work from home at least part of the week, even if their workplace is in a city and they need to get to the city (or at least to the international airport) regularly. Given their lower frequency of commutes, these commutes can be longer, so it is increasingly possible for people who work in cities to live 100km or more away from the city. The localities where they live usually have their own economy, so these long-distance commuters are rarely the only market for local services and retail. But their presence may have an important marginal effect on localities where local demand for personal services, retail and construction may not otherwise be high enough to sustain the supply (and hence the jobs) in these sectors.

Second, there are even longer 'commutes' across provinces and across the country. Mines, logging and oil extraction are increasingly being organised on a fly-in, fly-out basis, or, as often in Alberta, with a mobile workforce that is only there temporarily for the construction phase. Such very long-distance commutes are not, of course, done on a daily basis. However, the key factor that links them to the idea of the residential economy is that these workers often live, and have families, at a location different from where they work. Although their income is derived from productive activity occurring, for example, in Alberta's oil-sands, most of it is spent at their place of residence, which may, for instance, be Rouyn-Noranda or Corner Brook

24. The residential economy: second homes and cottages

A final driver of residential economies is second homes and cottages .In Canada the expression 'cottage country' denotes localities that usually rely on temporary residents for their service industries to survive. This must be distinguished from places that rely on tourism: tourists do not invest locally. Rather, it is businesses and local governments that invest, create a tourist product, which is then exported (although a tourism 'export' is in fact the 'import' of a tourist). Second homes do not function in this way. In this case it is individuals who choose to purchase a home, who spend money on maintaining it and who visit it on a regular basis, often over extended periods. There is no tourist product being sold, rather just day-to-day services necessary for the second-homers to eat, have their hair cut and run their (second) home.

It should be noted that the second home, retirement and long-distance commute effects may to some extent overlap, particularly in areas from about 50 to 200km from major metropolitan areas. Whilst it is possible that some retirement locations are not connected to metropolitan proximity and that certain trans-continental 'commutes' can originate anywhere, it is clear that long-distance commutes by professionals, retirement locations and cottage country can all be focused on amenity-rich and relatively accessible zones around Canada's major cities.

25. The residential economy: evidence from Canada

It has not been possible, in this study, to directly verify the existence of retirement economies. However, there is substantial evidence that supports the hypothesis that retirees are moving to smaller cities and rural areas within easy reach of larger regional cities and metropolitan areas. Some of these retirement destinations seem to be developing a service-oriented economy, others seem to rely on the nearby larger city. Around the larger and faster growing cities there is evidence of overlap between growth of the younger, working age, cohort and growth of the retiree cohort.

Our analysis pinpoints well-known retirement destinations such as the Okanagan valley, the southern parts of Victoria Island and Canmore, west of Calgary. This validates our approach, notwithstanding the approximations that have been made, and provides evidence that the method is quite robust. Since we discover other similar areas, this suggests that the type of retirement and economic dynamics that are observed in areas traditionally associated with retirement in Canada are not limited to them. These dynamics can be observed across Canada, particularly in scenic locations an hour or two from metropolitan areas. It is telling that areas such as central Newfoundland, most of the Gaspésie (in stark contrast to the more accessible Lower North Shore) and most of the Prairies do not emerge as retirement destinations, and neither do most large cities.

The analysis for long distance commuters is based on imperfect data. Nevertheless, our results show that, especially in small cities and in rural areas, a high proportion of resident workers, above 3% in rural areas, commute over 100km to their place of work. In the context of this analysis, this means that roughly 3% of the work income that enters the economy of these rural areas is generated by employment that takes place over 100km away. This does not mean that these rural economies fully depend upon long distance income transfers to survive. It does show, however, that a sizeable segment of their local economy – particularly of their local service economy – is being directly driven by work incomes generated elsewhere.

We thus found considerable evidence that many localities benefit, at the margin – and probably well beyond the margin in some cases – from market transfers that occur solely because of the distance that separates the place where income is generated from the place of residence of the person who receives the income. That being said, it would be an error to suggest that “retirees are the next creative class” or that “long distance wage transfers are the next equalization payments!” However, it is entirely reasonable to suggest that these long distance income transfers can, in some cases, be of critical importance to local economies, particularly to the smaller, rural or remote ones.

26. Geographical income inequalities

The purpose of examining the geography and evolution of income distribution in the context of this report is to see whether, in certain parts of Canada, income differences between the wealthy and the poor are substantially larger than others. There is no absolute criterion by which to determine whether one locality's income distribution is more, or less unequal than another's. For this reason, the criterion used is relative.

Analysing trends between 2001 and 2006, we find that metropolitan regions tend to be high inequality locations, with inequality rising in Toronto, Calgary, Edmonton and Vancouver. Though these are only four cities amongst the 203 we analysed, they contain about 9 million people. Consequently, a large number of Canadians are living in cities with polarised income distribution there were becoming increasingly polarised between 2001 and 2006. In contrast, polarisation is generally decreasing in smaller cities. Of the 9 non metropolitan cities classified as highly unequal in 2001, 25 display decreasing levels of inequality and only ten have increasing inequality levels. Overall, small to medium sized central cities have the most equal income distributions (36 to 40% of them had low inequality in 2001), and small to medium sized peripheral cities display the highest levels of inequality (37 to 38% had highly polarised income distributions), excepting metropolitan areas of which a full 63% (5 out of 8) have polarised income distributions.

From a provincial perspective, we find that Alberta stands out as having the highest proportion of cities that are rapidly polarising, with 67% of its cities in this category. British Columbia (38%) and Atlantic Canada (47%) both had, in 2001, very high proportions of cities with polarised income distributions. Quebec, at the other extreme, has the highest proportion of cities with low levels of inequality (49%) and a high proportion of cities where the income distribution is becoming more even (32%), similar to Atlantic Canada (36%), Ontario (31%) and the Prairies (33%).

This result is particularly interesting because it suggests that there is something specific about Quebec's economy, not so much in its capacity to grow fast or generate high incomes, but in its capacity to ensure a relatively more equal distribution of the economy's benefits. The 'Quebec model', often criticised by economists on the grounds that it may be limiting the province's absolute level of GDP, appears nevertheless to be distributing the economy's benefits more equally, at least within each city. If it is true, as some argue, that in affluent societies it is *relative* and not *absolute* incomes that determine satisfaction levels, then Quebecers may have good reason to be satisfied with their economic performance, and this may explain the difficulties encountered by those who wish to modify the system.

27. Geographical gender inequalities

Overall, between 1991 and 2006, women's full time salaries have increased faster than men's, but still remain, on average, lower (Section 6.3). Overall, then, women's full-time salaries are slowly catching up with men's, though in almost all of the regions in our analysis they are still well behind. The convergence is faster and the differences smaller in localities with a strong public sector presence. There are ten localities where, in 2006, women's incomes for full-time work are greater than men's and a further 11 where they are within 10% of men's earnings. Of the 10 localities where women earn more than men, one is in Quebec⁴, one in Alberta, and the eight others are in the Prairies. All are rural areas, and all but two are in the periphery.

Women therefore earn less than men for full time jobs in almost all localities in Canada. However, there are a small number of localities, principally in Canada's rural periphery, where this is not true. In these places women in full-time jobs earn more than men. Some of these localities may provide lessons as to how wage equality can be achieved, and what its costs and benefits are to the people concerned. Others, though, may provide examples of what can happen if traditional male occupations in resources and transformation sectors disappear.

Turning our attention to the participation rate, we find 36 Canadian localities in which the gap between the women's participation rate and the men's participation rate is less than 3 percentage points. Of these 36 regions, all but one are in Canada's periphery, and all but three are rural areas or small agglomerations. The exceptions are Sydney (NS), Corner Brook (NL) and Rimouski (QC). These results lend credibility to the idea that in certain resource-dependent localities, principally but not exclusively rural and almost exclusively in the periphery, women are increasingly dominating the workforce. In all but one case the observations in table 7.9 display male participation rates below the Canadian average, and only three have male participation rates above the average for peripheral rural and small town localities. Women's participation rates are also low in these areas, but their role as income earners is markedly more important, relative to men's, than in other similar localities.

In other words, there are a large number of small and rural peripheral localities, clearly in economic distress given their low participation rates, in which women are playing a more important role as breadwinners than men.

Turning our attention to differences in education levels, we find that there are 257 localities in Canada where, in 2006, women have higher education levels than men. On the whole these localities are distributed evenly across synthetic regions, with 55 to 70% of all localities in central and peripheral areas having women more educated than men. Metropolitan areas (which

⁴ Incomes are extremely high in this area, and the population, of 530, very small. It is possible that this observation is spurious or suffers from errors.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

represent about 14 million people, stand out since in only three (38%) are women more qualified than men. Thus, given the weight of these metropolitan areas, it is possible that in Canada as a whole, men are still more qualified than women. However, in 61% of all localities, the reverse is true. This is particularly the case in the largest peripheral cities (cities such as Halifax, Regina, Saskatoon, Sydney) for which ten out of 13 have a more educated female than male workforce.

To the extent that success in the knowledge economy is premised on human capital (sanctioned by post-secondary qualifications) then it would appear that women in a majority of localities in Canada are well positioned to take advantage of shifts away from resource and manufacturing jobs towards the tertiary and knowledge sectors. However, it must be pointed out that our results also seem to contain some contradictions, at least if a straightforward economic approach is taken. Women, who are more qualified than men in most localities, earn less than men almost everywhere for full-time jobs. Either it is the least qualified women who occupy full time jobs – which is rather far-fetched– or women do indeed obtain lower returns on their qualifications, either through choice (they give a higher priority given to non-economic activities, they work fewer hours) or because of structural imbalances in the labour market (for example, undervalued female professions).

The proportion of localities where women have higher education levels than men is not the same across Canadian regions. Whereas 88% of all localities in the Prairies are in this situation, only 38% are in Quebec.

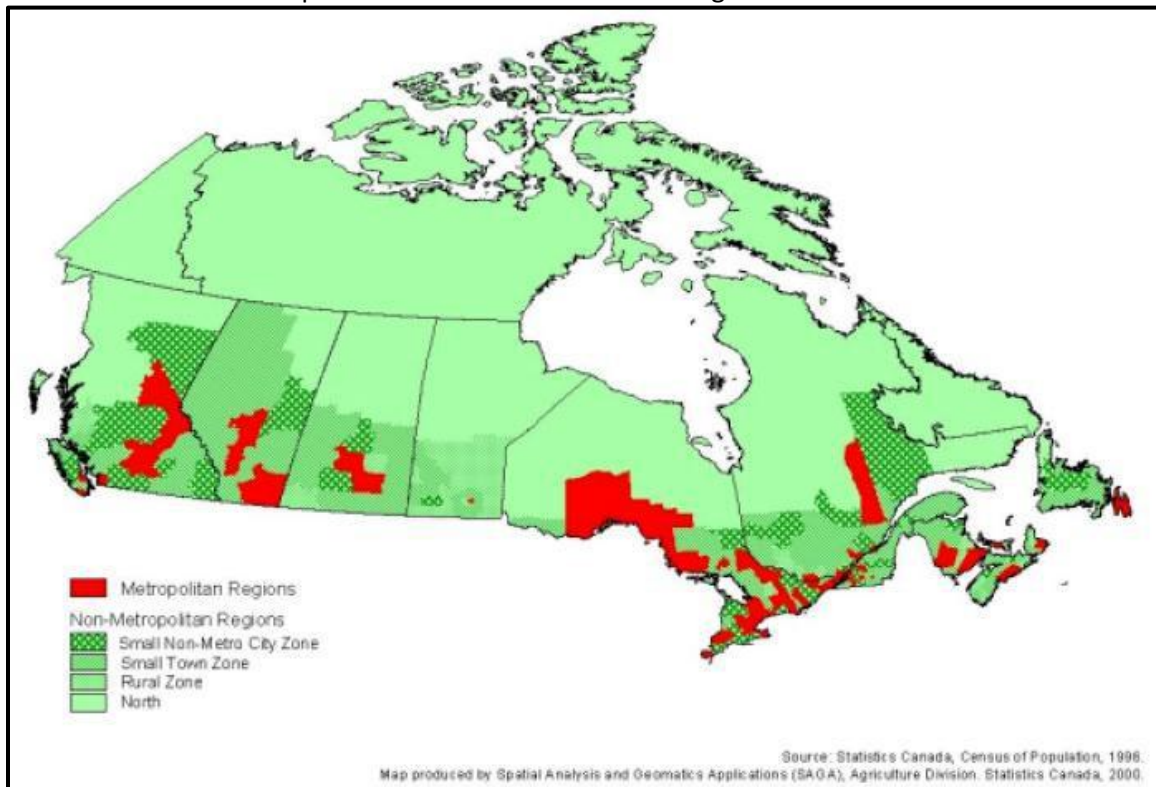
28. The northern economy

To analyse Canada's northern economy, we must first define it. At first glance, this may seem straightforward (Section 7.2). For many, the North is Canada north of 60°, the three territories: Yukon, the Northwest Territories. But such a definition does not capture many of the essential elements that constitute the North and ignores the more southerly regions that share many of the characteristics of Canada north of 60°.

The “Modified Beale Codes”, a typology of Canadian regions based on Statistics Canada's census division, include a category which focuses on Canada's north, the northern hinterland. It is defined as census divisions “that are entirely or in major part north of the following parallels by region: Newfoundland, 50th; Quebec and Ontario, 49th; Manitoba, 53rd; Saskatchewan, Alberta, and British Columbia, 54th; and all of the Yukon, Northwest Territories, and Nunavut.” (See Map SE5). Factors which influence this definition include settlement context, population size and density.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Map ES 5: The North - Beale Codes Regions of Canada



Source: Du Plessis et al. 2002. Appendix B.

Canada's north does not have a large population and has a very low population density. It represents 2.0% of Canada's total population. It has very few large urban centres. For example, in the three territories, Whitehorse is the largest urban centre with a population of 20,461 in 2006. This is very important: While remoteness and isolation varies greatly across the north, major markets are distant. These characteristics are very important. Although remoteness and isolation varies greatly across the north, major markets are distant. While Yukon has direct access through roads and ports (only one community does not have year-round road connection to southern markets), bringing goods to market is a much greater challenge for the Northwest Territories and especially Nunavut. As local market alone are not sufficiently large to generate efficient production levels for most goods – and often services – bringing goods to market is very costly. In Nunavut there are no road connections to the southern markets, while for the Northwest Territories, there are no year-round road connections. These conditions simply make it uneconomical – in most cases – to produce goods for export markets.

Population growth in Canada's north is not homogeneous. While census divisions in the three territories all have growth rates above the Canadian average for the period 2001-2006, only 6 of the 18 census divisions "south of 60°" have a positive population growth rate. An important characteristic of Canada's northern population is its relative youth. This is especially true in the

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

northern census divisions of Manitoba, Saskatchewan, the Northwest Territories and Nunavut. It is also true for the Nord-du-Québec and Newfoundland's census division 11. These all have important aboriginal communities. Furthermore, in northern regions "south of 60°", population ageing is generally as much an important issue as it is for Canada as a whole. The north is indeed far from homogeneous.

Nine of Canada's 24 northern census divisions have a majority of aboriginal population (Figure 7.13). In another 5, the aboriginal population represents 40% to 50% of total. 18 of the 24 census divisions have an aboriginal population representing more than 25% of the population.

Economic conditions – measured through the employment rate – vary greatly in Canada's north. In a handful of census divisions, the employment rate is far above the national average. At the same time, the employment rate is generally lower than the Canadian average – and often well below this average. This is a reflection of the North's dependency on key projects which are generally linked to natural resources extraction (for example oil and gas in northern Alberta or diamonds in the Northwest Territories).

A very interesting result is the relative importance of public administration employment. In all but a few of northern census divisions, the percentage of employment in this category is significantly higher than the national average. Such results may as much be a reflection of the weakness of other sectors as a reflection of the "strength" of the public administration sector, but it is an important characteristic. One could argue that – in addition to a few resource-based projects and an informal economy which we have not been able to document for the present presentation due to a lack of data – the public administration sector represents the backbone of Canada's northern economy.

Our results reveal that Canada's northern population over 15 years of age has – on average – lower educational achievements than the national average. Considering the correlation between education and income, it should come as no surprise that average income in Canada's northern census divisions is generally lower than the Canadian average. A notable exception is Alberta's census division 16 (oil and gas). With only one exception (Northern Rockies (BC)), all other census divisions in Canada's north "south of 60°" have an average income below the Canadian average. Average income in Yukon and the Northwest Territories is above the national average, while it is also the case in one of Nunavut's three census divisions. Note that not taking into account the higher cost of living, as well as the relative importance of the informal economy makes any precise conclusions difficult without additional information.

Canada's north is far from being homogeneous. Nevertheless, all of its regions do face similar challenges, although the relative importance of these varies. As is the case for peripheral regions closer to the Canada – U.S. border, distance to markets and population density matters. A low population density means that the region's firms will not have access to an important local

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

market and if they only rely on this local market, the production level will most likely be inefficient, not enabling firms to take advantage of potential economies of scale to reduce the average production cost. If they want to access larger markets, transportation costs will force them to be very competitive and develop comparative advantages – such as relatively lower wages. Exceptions to this are cases where firms have a “unique product” such as diamonds or original sculptures.

In Canada's north, the challenges are amplified, compared to the “southern peripheral regions” as population density is generally much lower and transportation infrastructure less developed. This has an impact on the region's relative competitive position. Challenges are also going to be amplified with forecasted climate change. This will result in the end of the permafrost in many communities, with its impact on physical infrastructure as well as ice melting earlier in the spring and the ice freezing later in the Fall.

Under such circumstances, one may say: “are we asking the wrong questions?” Instead of asking how we can improve the region's competitiveness, should we rather ask whether the notion of competitiveness is a useful concept (or goal) for Canada's north? There are some exceptions where northern firms can be competitive – as we have pointed out – but in most cases, it does not seem that geography and demographics will allow the region's firms to become competitive on larger markets. Increasing energy costs will simply amplify the challenge.

Consequently, should we simply accept that, with a few exceptions, Canada's north is simply not in a position to export products at a competitive cost. On the other hand, there is a rationale for the continued financial support of Canada to the region. To defend Canada's sovereignty in the region, should Canada pursue a strategy of maintaining a strong presence in the north, with the required investments to the region's population?

Chapter 1 – Introduction: An overview of some recent trends*

1.1 Introduction

In a study focused primarily on Quebec and the Atlantic Provinces (Polèse and Shearmur 2002), the authors examined underlying trends explaining regional differences in economic development in Canada. Simplifying somewhat, there were two overall conclusions.

The first conclusion of that study was that the factors explaining regional differences in development were deep-seated, rooted in the inescapable rules of economic geography, and could not be easily overcome, specifically the gap separating “central” urbanized communities and more peripheral, often resource-based, communities. The basic variables of size and distance continue to shape the location of much economic activity (outside the primary sector, that is), in Canada as elsewhere. The study focused on the last three decades of the 20th century. The observed trends did not suggest that the rules were about to change. A decade later, it is appropriate to ask whether that conclusion still holds. As we shall argue in the following paragraphs, numerous changes have occurred since the earlier work some frankly surprising, which warrant a new examination of the evolution of Canada's regional economies.

The report's second conclusion was that many of Canada's regional and local economies were undergoing substantial structural change as they moved from labour intensive to knowledge intensive activities. This structural change was having a marked impact upon communities with economies based upon resources and on first or second transformation manufacturing (though this process is not confined to any particular sector, but to types of jobs that happen to be more prevalent in these sectors). For these communities innovation and increased productivity was leading to employment decline as large numbers of low knowledge-content jobs were being replaced with smaller numbers of high-knowledge content jobs, with little prospect of local re-employment for the unemployed labour force⁵). Given these processes and the geo-structural forces at play, the first report concluded that it was those regions best able to manage these structural changes and to envisage their future as smaller but more knowledge-intensive economies that would be best positioned to thrive. The first report therefore suggested that policy intervention be thought of as a process for managing these changes rather than as a process for halting or reversing them.

⁵ These processes also occur, in certain sectors, in larger cities. However, in large cities processes of creative destruction have served to mitigate the regional effects as new sectors emerge which can utilise the underutilised labour.

* All tables and figures referred in this and subsequent chapters can be found in the [Statistical Appendix](#).

The study focused on the last three decades of the 20th century. The observed trends did not suggest that the rules were about to change. A decade later, it is appropriate to ask whether that conclusion still holds. As we shall argue in the following paragraphs, numerous changes have occurred since the earlier work some frankly surprising, which warrant a new examination of the evolution of Canada's regional economies.

1.2 Have the rules changed?

Looking at the evolution of Canada's regional economies, the first decade of the 21st century may well go down as the decade of surprises during which seemingly established relationships were overturned. Ontario has become a "have-not" province, for example, with a regional development agency for Southern Ontario. This was almost unimaginable a mere decade ago. Have the forces shaping Canada's regional economies changed? Do the old truths no longer hold? Has Canada entered a new era?

It is too early to tell. A decade is not a trend. We need also to beware of over-interpreting the importance of purely local events. However, it is difficult to escape the impression that some things have fundamentally changed. The examples that follow are viewed from a high level - Canada and the provinces - rather than the regional or sub-provincial level that will form the bulk of this report.

1.3 Canada, a trading nation still?

We begin with international trade, merchandise exports to be more specific (Relevant figures and tables are found at the end of each chapter). That Canada is a trading nation is almost a truism. With a relatively small and open economy, access to US and world markets is a major force driving the economy of Canada's regions. The positive – and increasingly strong – relationship between accessibility to continental and world markets (via various transport modes) and local employment growth has been well-documented (Apparicio *et al* 2007). Regions well-located for trade grow more rapidly on average. That this should be so for the last three decades of the 20th century is not surprising: Merchandise exports as a share of national GDP rose from 18% in 1971 to 40% in the year 2000, with a sharp acceleration beginning around 1990 following the signing of the Free Trade Agreement with the US (Figure 1.1).

However, something snapped around 2001, reversing past trends. The share of exports in GDP has fallen sharply since then (Figure 1.1). What happened? Was it 9/11 and the subsequent tightening of the Canada-US border? Perhaps. The rise the Canadian dollar beginning in 2001-2002 is certainly a factor. More to the point, should we expect the downward trend to continue (to bottom-out as it must, to reverse again as it might), and what does this portend for Canada's various regional economies? A Canada less dependent on trade – specifically, trade with the US – implies a potentially very different regional economic geography from that of a Canada tightly integrated into the US economy. The regional dynamics of the US economy also matter. Canada's regions do not trade with the same states, nor do they trade in the same products.

Figure 1.2 confirms the receding role of American markets for Canadian exports with the turning point again around the year 2000. Figure 1.3 points to the automobile industry as the chief source of decline, an industry almost entirely concentrated in Southern Ontario. Here then is a first hint of the source of Ontario's troubles. However, why the year 2000 (or proximate) as the breaking point? The drop in motor vehicle and auto parts exports cannot be solely explained by the post-2007 subprime ignited recession and subsequent near collapse of the US auto industry, the downturn having begun some seven years earlier (Figure 1.4). More deep-seated factors were also at play; but what are they?

Figure 1.3 upsets the perception of natural resources and of energy as the principal drivers of Canada's export economy. True, energy exports have grown rapidly, with again a break – an upwards surge this time - around the year 2000, but manufactured goods (outside the auto industry) have been steadily creeping upwards as a source of Canadian exports, now accounting for about half the total value of all goods shipped⁶. This in turn suggests the emergence of a

⁶ The "Other Manufactured Goods" class includes the following Statistics Canada groups: Industrial goods; Machinery and Equipment; Consumer Goods.

more diversified export base – with a broad range of manufactured goods – rooted in competitive advantages specific to Canada's different regions, which is not at all bad news.

1.4 Do Provincial Economic Disparities still matter?

Cross-Canada regional disparities still matter (Figure 1.5). Alberta (on the upside) and Atlantic Canada (on the downside) are, as expected, the chief outliers. However, a closer look at the trends reveals a definite movement towards a lessening of interprovincial differences.

The most stunning regional turnaround of the last decade is without out a doubt that of Newfoundland and Labrador, Canada's poorest province since its entry into Confederation in 1949. Figure 1.6 speaks for itself. Newfoundland and Labrador's spectacular upsurge in GDP does not require a long explanation. More surprising, if somewhat less spectacular, is the systematic move up in GDP per capita of the three Maritime Provinces (Figure 1.7). Note that the two figures refer to GDP rather than income, eliminating the redistributive effects of transfer payments. GDP measures the value of goods and services produced *in* the region and is, at least in principle, a measure of the "real" productive capacity of a region. Note also that the point of comparison is Ontario (not Canada) in order to eliminate the effects of Alberta's abnormally high GDP per capita⁷.

On the basis of current trends, one can argue that Atlantic Canada is no longer Canada's economic stepchild or, if the trend continues, will soon cease to be. Staying in the eastern half of Canada, Quebec's GDP per capita – compared to Ontario - has ceased to deteriorate, picking up since the 1990s, although still systematically below that of Canada's largest economy (Figure 1.6). Taking a broader geographical perspective, the image is that of a relatively good performance of Canada's regional economies east of Ontario, at least, in terms of GDP per capita. If this is true, it heralds the possible end of the secular shift westwards of Canada's economic centre of gravity. Again, it is too soon to tell. But, "East" no longer sends out the message of general decline it once did. Perhaps the East's apparent renaissance is simply the (statistical) mirror image of Ontario's relative decline. Or, does Ontario's "decline" mirror more fundamental changes in economic geography that affect not only it but also neighbouring US states?

Figure 1.8 illustrates the contrasting evolution of Ontario and Quebec (here Canada is the point of comparison). Quebec's economy, although with a lower base (both absolute and per capita), appears more resilient, less prone to shocks, a reflection undoubtedly of the greater diversification of its exports base. The contrast with British Columbia is even more striking, which continues to exhibit major fluctuations in GDP per capita along a generally downward

⁷ If Canada, not Ontario, is used as the base, the general upward trend in GDP per capita continues to hold, but is less marked, especially for Nova Scotia.

trend, but which has seemingly been reversed since 2001. Is British Columbia in the process of freeing its economy from its dependence on the forestry, a historically high-wage (high unionization) industry very much tied to US markets? If so, this “diversification” would be the bright side of the near collapse of the forestry, hopefully making the B.C. economy more competitive internationally. British Columbia is no longer (or at least much less so) a high-wage economy (Figure 1.9). Quebec never was a high-wage economy; the slight trend reversal (upwards) since 2001 suggests a gradual abandonment of the lowest paid and lowest skilled jobs, which again is not at all bad news.

No less encouraging is the improvement of the economic performance of Saskatchewan and Manitoba, especially the former, which together with Atlantic Canada and Quebec have historically lagged behind the rest of the nation (Figure 1.10). Again, it is too early to tell whether the observed upward movement in the two curves since 2002 (or proximate) is purely cyclical, driven by the demand for specific resources (oil, potash....) or the reflection of more deep-seated changes in the competitive advantage of the two Prairie Provinces.

The macro trends, in sum, are largely positive, leaving aside for the moment the travails of Southern Ontario (to which we shall return elsewhere in this document). The juxtaposition with trade data suggests that Canada's provincial economies have been able, on the whole, to overcome major changes in the international context (specifically, a sharp US downturn), which truly marks a break with the past.

However, these macro trends hide profound adjustments, often painful, at the level of individual Canadian communities. Some adjustments are more painful than others. The rapid structural transformation (next section) of the Canadian economy heralds challenges that may be more difficult to overcome than those of the past.

1.5 Troubles ahead? Accelerating Structural Change

The structural transformation of the Canadian economy has accelerated in the last ten years, mirrored not only in the shift in jobs out of manufacturing and primary sectors (with notably exception of extraction, more on this below), but also in the rapid growth of employment in the most information and knowledge-rich industrial class: professional, scientific and technical services (Figure 1.11). This extremely heterogeneous class covers a broad range of knowledge-rich activities, including computer services (which, in turn, includes software development for computer gaming, design, animation, special effects, finance, etc), research and development, management consulting, industrial design, engineering consulting, marketing research, and advertising. This shift towards services continues to fuel the growth of large urban areas (the subject of chapter 2, below). The growth of employment in information and cultural industries - which includes broadcasting, sound studies, wireless telecommunications carriers, and Internet

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

providers – is pushing in the same direction as the growth of employment in financial services, although at a slower rate.

Much of the fall in manufacturing employment between 2001 and 2006 was in high tech industries, notably communications equipment and other electrical components (Figure 1.12), reflecting the end of the 1994-2000 techno boom and the subsequent collapse of Nortel; a salutary warning that even high tech clusters can falter (remember Kanata and Silicon Valley East!) and that all booms must one day come to an end. However, the good news is that the end of the techno boom did not, seemingly, have a lasting impact on the three urban economies (Ottawa, Montreal, Toronto) most affected by associated job losses. The reasons lie in part in the capacity of large urban economies to replace job losses, which constant occurring, by growth elsewhere in the local economy; but also – and more to the point - in the skills (and hopefully gender) overlaps between declining and growing industries. Even more noteworthy is the apparent ease with which job losses in the apparel industry (down some 42,000) – a drop accelerated by the end of the Multi-fibre Agreement in January 2005 – was absorbed by the Montreal and Toronto economies, where 50% of the losses were concentrated, respectively 14,500 and 6,050 jobs. Though certainly not high tech, this suggests that much of the (largely female) labour force thus freed was absorbed by the growing service economy, although most probably in other sectors such as food, accommodation, and business support services.

Job losses in the pulp and paper, smelting, and other highly capitalized industries are a different matter. Losses are concentrated in small and mid-sized towns. The affected labour force (primarily male) has skills that do not necessarily match those of the growing service and knowledge based economy, which moreover tends to concentrate in larger cities. The mismatch, in sum, is spatial (geographic), skill-based, and perhaps also gender-based. Figure 1.13 shows the comparative evolution of male and female employment rates. Clearly, economic restructuring has been increasingly less kind to men than to women.

Some structural shifts are easier to accommodate than others, not only because of different spatial distributions of employment, but because industries vary in their impact on local labour markets and industrial relations. Industries characterized by large plants, unionization, and high wages can act as barriers to small business creation and may thus hinder diversification, a subject to which we shall return. The long-term shift of employment out of agriculture and associated downstream industries has, on the whole, occurred without major local shocks, although at the root of the (continuing) decline of much of small-town Canada, most notably in the Prairie Provinces.

The collapse of the ground fishery and downstream industries in the 1990s devastated numerous communities in Atlantic Canada, most notably in NL; the damage is still being felt. However, the relatively positive performance of the three Maritime economies over the last ten years suggests that industrial diversification, although often painfully slow, is taking place, but

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

often at the cost of geographical shifts of employment within each province, in this case towards locations with better access to markets (the subject of chapter 2). Market access aside, it may well be that be – at least this is what the evidence suggests- that regional economies founded on fishing and on farming (especially) find it easier, on the whole, to adjust and to move on to other industries, perhaps because of more deeply rooted traditions of small business and entrepreneurship.

The history of “heavy” and extractive industries is very different. The sharp decline in employment in the forestry and associated industries (pulp and paper mills, mainly,) is racking havoc in many small towns in Quebec, the B.C. interior, northern New Brunswick, and elsewhere. Industrial reconversion and diversification is (and will be) difficult. Some towns will decline or perhaps even close entirely. However, by fortuitous coincidence, the decline is occurring at the same time that extractive sector employment (oil, gas, and mining, chiefly) is growing (Figure 1.14), often in localities that are not all that distant from declining logging communities with, moreover, skill requirements that are not incompatible. The Abitibi and North Shore regions of Quebec are cases in point. While fortunate for workers able to make the switch (but less so for the communities that lose them), the ingredients are in place for new shocks in the future. The extractive sector is by nature more cyclical than the forestry sector and its disruptive effects on local cost-competitiveness can be significant (see chapter 4). The growth in extractive employment, although a welcome respite for many outlying communities (and workers), is not an unmixed blessing.

The growth in extractive employment may in part lie behind another surprising trend: the decoupling of U.S. and Canadian unemployment rates, with those in Canada now systematically below those in U.S.; at least in most regions. In the U.S., the mismatch between lost brawn-intensive jobs and growing brain-intensive jobs remains a major source of structural unemployment⁸, while Canada has, momentarily at least, been able to dodge the problem thanks to continuing strong demand in the extractive sector. If so, the shock will be all the greater when (and if) it does come. Equally worrying - coming back full swing to Southern Ontario – are indications that the problems traditionally associated with high-wage resource economies are also taking hold in “old” industrial economies characterized by large plants and high wages. If so, the challenges facing many Southern Ontario communities go beyond simply economics

However, it is useful to put industry trends in perspective. Compared to manufacturing and to tradable services, the primary sector is a fairly secondary source of employment in the overall Canadian economy, although a star player in many regional economies. Manufacturing may

⁸ An additional factor is the difference in housing markets. The U.S. housing bust, especially in the hardest hit areas, has reduced the ability of workers to move. Many owe more on mortgages than their homes are worth, leaving them trapped in areas of high unemployment (preferring to pay rather than default).

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

momentarily be declining (the decline must level off at some point), but manufacturing remains by far the most important source of economic base employment, notably in mid-sized cities; that is, jobs that are not simply there to meet local demand (Figure 1.15). If a plant closes, grocery stores and the barbershops will necessarily follow. Information-rich services have perhaps already overtaken manufacturing as a source of “basic” employment in some larger cities; but trade in services is notoriously difficult to measure.

Finally, changes in the age structure of the Canadian population have accelerated in recent years. Figure 1-16 shows the share of the Canadian population (age 15 and over) in the 55-69 age bracket. Between the year 2000 and 2009, this share grew from 31% to 36% and will approach 50% in the not-too-distant future. Much of this population is retired or semi-retired and is no longer tied (or at least much less so) to living where there are employment opportunities. The incomes spent locally by these “mobile” greying populations are a potential source of economic base employment for the communities in which they choose to settle, a growing source of local income for those communities that have the appropriate attributes. This subject is further explored in chapter 5, below, under the heading of “residential economies”.

In the following chapters, the implications of some of these trends are examined in greater spatial detail, focusing on data at the sub-provincial level⁹. We begin with two fundamental dimensions that drive the spatial dynamics of modern economies: agglomeration (chapter 2) and accessibility (chapter 3) then moving on, progressively, to more specific issues.

⁹ Data sources are given in appendix 1

Chapter 2 – Agglomeration: The continuing importance of cities.

The objective of Chapter 2 is to identify major trends and possible consequences for the future evolution of Canada's regional economies through the presentation and analysis of tables, figures and maps (found at the end of the chapter). In many cases, a full answer will require further study. The spotlight is on the issues rather than in-depth analysis. This chapter considers the role of cities – or, more precisely, agglomeration - in regional economic development (for a general introduction to the subject, see Polèse 2009).

2.1 The attractive power of cities continues to grow

Figure 2.1 shows the evolution of the share of Census Metropolitan Areas (CMAs¹⁰) in national employment and population between 1987 and 2009. The CMA share of employment and population continues to grow. Economic activity and people in Canada continue to concentrate in large cities. The attractive power of large cities is strongest during periods of economic growth, accelerating during the 1994 – 2000 dotcom boom and the arrival of the Internet, a perception reinforced by Figures 2.2 and 2.3, which show, respectively, changes in CMA shares over the previous year and the share of the three largest CMAs - Toronto, Montreal, and Vancouver – in total CMA employment. Urban concentration tends to accelerate during periods of high growth and decelerate during recessions. In short, growth stimulates concentration. On the other hand, CMA and non-CMA employment rates (employment as a share of population over 15) are equalizing, a reflection primarily of rising female labour participation rates in smaller cities and rural areas (Figure 2.4).

What lessons can be drawn from these trends? *First*, the most rapidly growing industries in the Canadian economy (recall Figure 1.11) are also the most dependent on what economic geographers call agglomeration economies; that is, the advantages associated with a location in a large city. As long as this is so, larger cities will, on average, continue to grow more rapidly than small towns and rural areas. Regions lacking a large urban area (population at least 100,000) are at a handicap. Given current trends, there is little reason to believe that this will change.

Second, new information technologies (IT) do not *on balance* favour the decentralisation of economic activity; rather, the opposite is true. The reasons for this are explained in greater detail elsewhere (Polèse and Shearmur 2002, 2006). In a nutshell, IT allows Toronto, Montreal and Vancouver based service firms, say, to compete over much larger markets and to centralize the most knowledge and creative-intensive functions (trends in functional specialization are further examined in chapter 6). Banks, for example, are able to process loan requests directly at

¹⁰ Census Metropolitan Areas as defined by Statistics Canada. These are urban areas with populations above 100,000. Each CMA is defined as a distinct labour (commuting) shed.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

the centre with less need for people at the ground¹¹; the impact of ATMs on local bank personnel is obvious. IT and parallel innovations like bar codes have facilitated the centralization of wholesaling and distribution activity in and around large cities, as well a second tier regional hubs such as Moncton and Saskatoon.

Third, it is unrealistic to expect growth automatically to revitalize outlying non-urban economies. The maxim “a rising tide lifts all ships” does not hold in regional economics. If the most rapidly growing sectors of the economy are also those most dependant on agglomeration economies – which is what the evidence shows - then every cycle of growth will further spur the demand for labour in large cities. In economic geography, all advantages are relative. The demand for labour may well be growing in a nonmetropolitan region, but it will be growing even more rapidly in cities, which explains why out-migration from rural and peripheral areas accelerates during periods of growth.

A corollary of the above - for small towns and rural areas - is that proximity to a large metropolis remains an advantage. The share of the Canadian population living in or within a ninety minute to two hour drive of a major metropolitan area - population 500,000 or more - continues to grow.(Figure 2.5). The rapid growth since 2001 of populations in the outlying radius is in part a reflection of the residential choices of recently retired populations and other mobile households; in turn a sign of the growth of “residential economies”(further examined in chapter 5.) but also possibly of increasingly extensive commuting sheds.

2.2 Agglomeration and Dispersion: Two Complementary Trends

Figures 2.6 through 2.10 illustrate the underlying trends propelling the growth of large urban areas, on the one hand, and of nearby smaller cities and rural areas, on the other. The first two illustrate the positive relationship between city-size, location, and the share of local employment¹² in, respectively, professional, scientific, and technical services (Figures 2.6) and in information services, the media, and the arts (Figure 2.7). For rural areas and urban areas with populations below half a million, places are divided according to their distance (within or beyond a 90 minute drive) from a large CMA. The positive relationship between city size and employment shares, as measured by location quotients, is a measure of the weight of agglomeration economies. For these two knowledge-rich and “creative” service classes the relationship with city size is strong. For the first group, only the largest CMAs exhibit location

¹¹ Note that this could have an impact on access to capital in more peripheral regions (e.g. Desjardins, Pierre-Marcel and Yves Bourgeois. 2008. *SME Financing in Atlantic Canada: Assessing Gaps and New Avenues for Actions*. Moncton: Institut canadien de recherche en politiques et administrations publiques)

¹² The measure used is the Location Quotient, which compares local employment shares with the national average. A quotient above unity (1.00) means that the share (%) of local employment in industry x is above the national average.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

quotients above unity (1.0); that is employment shares above the Canada average. For the second group, the largest CMAs again register the highest quotients. The outcome for city growth is a mathematical certainty: as long as the relationship holds and as long as these are high (employment) growth sectors, large urban areas will necessarily continue to grow.

The trend between 2001 and 2006 suggests a gradual diffusion towards smaller places, an indication that knowledge-rich services can, given appropriate circumstances, prosper in smaller cities. Note also for the second industry group (information services, the media, etc...) that “peripheral” urban areas in the 100,000 to 500,000 size class have quotients above unity, a reflection of the protective power of distance (from large competitors) for regional service centres. This class includes several capital cities (Regina, St. John’s, Victoria, Halifax...); thus, the link with broadcasting and other information services, which are generally more concentrated in these capital cities.

The continuing concentration of high-growth services in the largest cities puts pressure on wages and land prices, in turn sparking countervailing forces that cause other industries to seek out non-metropolitan locations. Figures 2.8, 2.9, and 2.10 show results for employment in manufacturing, respectively in mid-tech manufacturing, resource-based manufacturing, and high-tech manufacturing¹³. The first (mid-tech) remains by far the main source of manufacturing employment in Canada, some 75% of total manufacturing employment in 2006. Employment in these industries, which are generally extensive consumers of space (think of an auto plant) and do not generally require high levels of university graduates, tends to concentrate in small and mid-sized cities. But, as Figure 2.8 shows, not in any small or mid-sized city. The highest concentrations are found in smaller places within a 90 minute radius of a major metropolitan area. The distribution illustrated on Figure 2.8 - typical of all advanced economies - is the result of a continual trade-off between push and pull factors. On the *push* side, high-wages, road congestion, and real estate costs drive out manufacturing and other industries (wholesaling and trucking, for example) which are equally land- and labour-hungry. On the *pull* side, the need for frequent contact with service firms in the large city and with customers and suppliers causes those same firms to seek out locations as close as possible. The stronger the push factor – the denser the concentration of knowledge and creative intensive services – the less manufacturing (and analogous) firms are able to afford the large city- but the greater also the pull to locate nearby. This, in a nutshell, describes the mechanics behind the ring of small mid-sized manufacturing centres surrounding Toronto and Montreal.

The relative specialization of smaller “peripheral” cities in resource-based manufacturing requires little comment (Figure 2.9). The comparison between 2001 and 2006 results does not point to any fundamental changes, which corresponds to earlier studies for the period before

¹³ Definitions can be found in appendix 2.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

2001 (Polèse and Shearmur 2004, 2006) which found that the relative specialization of peripheral areas in resource-based industries has remained fairly stable over time, a sign in turn of the barriers to industrial specialisation, which will be examined further in chapter 4.

The highest concentrations of high tech manufacturing employment are in the largest CMAs, but also in “central” mid-sized cities (Kitchener-Waterloo is an obvious example) and nearby small towns and rural communities, which also show the greatest increases since 2001 (Figure 2.10). The relative absence of high-tech manufacturing in peripheral locations, whether urban or rural, is striking. The geography of high tech manufacturing is thus different from that of knowledge-intensive services. Small size is not necessarily a handicap provided that the community is located at a reasonable distance from a large urban centre. Location is the key variable. For high tech manufacturing, it is reasonable to assume that multi-plant firms distribute production according to the life-cycle (and complexity) of the product, with more standardized assembly delegated to nearby smaller places while products with a higher research content are first designed and produced in the larger city.

The concentration of high-tech manufacturing in and near large CMAs is the corollary of the concentration of knowledge-intensive services in large CMAs (recall Figure 2.6). The two interact via the exchange of ideas and information, often each other's best customers. Both are also major employers of highly educated personnel. Figure 2.11 shows the distribution of university graduates. The percentage of Canadians holding at least a B.A. (or equivalent) has increased everywhere. But, university graduates are systematically concentrated in larger cities, both in absolute and relative terms. The relationship between education levels and knowledge-intensive employment is in large measure circular with each reinforcing the other: highly educated persons are attracted to certain places because that is where the knowledge-rich jobs are; knowledge-rich firms are attracted to those same places because that is where the brains are. The challenge, of course, is breaking into that virtuous circle.

The importance of location, and not simply size, for high-tech manufacturing is demonstrated by the clustering of employment in and around three cities, Toronto, Montreal, and Ottawa, in what might be called Canada's high tech core, accounting for 73.4% of associated jobs in 2006, compared to 75.5% five years earlier (Table 2.1). The good news is that the trend shows a shift to locations outside the core, although still fairly minor. The bad news is that the decrease in employment in computers, peripherals and telecommunication and audio equipment (from some 68,000 jobs to 45,000) is, as noted earlier, largely a reflection of the collapse of Nortel and its suppliers in Ottawa and Montreal. Some analysts attribute the recent travails of Nokia, Finland's mobile phone giant, to its distance from the “centres” of action and innovation in the US and Europe. Whether Nortel was too far from the buzz of Silicon Valley, no one can say. The fact remains: location matters for knowledge-intensive industries.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

For manufacturing, concentration is not only a result of the geographic clustering of human capital but also of transport costs. IT has radically reduced the cost of transporting information, but not of goods. Much also depends on the nature of the good. Computers and peripherals are bulkier and in general costlier to transport than pharmaceutical products. Market access remains a major factor for manufactured goods (further explored in chapter 3). With the possible exception of the Lower B.C. mainland, no other part of Canada offers the combination of human capital *and* market access as the corridor of urban areas between, roughly, London, Ontario, and Quebec City. Table 2.2 shows the location of the 16 top ranked Canadian universities. 11 are located along this corridor, plus two in Vancouver. The remaining three are, respectively, in Calgary, Edmonton, and Winnipeg.

In short, the propensity of economic activity, notably knowledge-rich industries, to cluster in and around the largest urban centres remains strong,

2.3 Different trajectories: A closer look at urban growth and specialization.

A second look at figures 2.6, 2.7 and 2.10 reveals that the distribution of knowledge-intensive service employment and of university graduates is also sensitive to location; but in this case, as noted earlier, distance becomes a positive factor. Mid-sized urban areas (populations above 100,000) that are also important regional *service* centres – thus, at some distance from large metropolitan areas – have, as a rule, proportionately higher levels of employment in knowledge-rich service industries, in contrast to urban areas specialized in large-scale manufacturing or resource-based industries.

Table 2.3 shows urban employment specializations for five industry groups. In each case, the 14 CMAs with the highest location quotients are listed in descending order. CMAs exhibit very different patterns of specialization. As expected, Canada's three largest urban areas all exhibit location quotients above unity in the three service industry groups shown, (hence referred to as multimedia, scientific services, and finance). But Canada's three great metropolises are not the only urban areas exhibiting above average levels of employment in these industries. Thus, Regina, Saint John, St. John's and Halifax all have positive location quotients for the media industry. London, Kitchener-Waterloo, and Quebec City display positive quotients for finance. For scientific services, the role of size is more manifest, but Calgary, Saint John, St. John's and Halifax nonetheless exhibit above average employment levels. The capital city advantage is evident again, but so is the role of distance which fosters the development of regional service centres.

In Calgary and St. John's, employment in scientific services is associated with parallel specializations in extractive industries (oil and gas exploration and extraction, mainly), important consumers of engineering and other scientific services (geologists, surveyors, etc.). Note that mining and smelting (i.e. Sudbury) does not seem to facilitate a similar flourishing of scientific

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

services. Note also that all CMAs with above average employment in manufacturing are in either Southern Ontario or in Southern Quebec with the exception of Abbotsford (on the Trans-Canada highway, within easy reach both of the US and Vancouver) and of Saguenay, specialized in aluminum smelting. With the exception of finance, which does not seem incompatible with a strong manufacturing presence (i.e. Kitchener-Waterloo and London), manufacturing cities are not generally strong service centres, although much depends on the nature of the manufacturing sector as the case of Kitchener-Waterloo again demonstrates.

Figure 2.12 shows population growth (1990 - 2009) for urban areas grouped by city-size class, based on 1990 populations¹⁴. The trend lines confirm the continued rapid growth of the largest urban areas (populations over 600,000 in 1990). However, growth is not systematically related to size. The slowest growing group is the third size class (cities between 100,000 and 300,000 in 1990). This group includes a number of slow-growth cities such as Sudbury, Saguenay, Thunder Bay, and Cape Breton, an indication that industrial structure can annul the growth effects of size.(the subject of chapter 4). .

Growth occurs in all size classes, including the smallest (populations between 10,000 and 50,000). The smallest class exhibits the most volatile growth, a reflection of the presence of single-industry towns, where the closing of a plant can cause sudden out-migration. Figure 2.13 shows population changes by city for the smallest group. Towns such as New Glasgow (N.S.), Miramichi (N.B), and Rouyn-Noranda and Val-d'Or (jointly measured) exhibit significant changes in the direction of population change before and after the year 2000, positive in the first case and negative for the other two. The three are, respectively (at least, historically) steel, pulp and paper, and smelting and mining cities. Consistently rapidly growing towns are most often resource-based (in Alberta, B.C., and Quebec). The two exceptions are Vernon, B.C, (with a growing "residential" vocation) and Granby, a diversified manufacturing town in Southern Quebec.

Figure 2.14 displays the same information for the next biggest class (50,000 to 100,000). The four consistently slowest growing cities are associated with "big" highly-capitalized industries (mining, auto, steel): Cape Breton, Chatham-Kent, Sault Ste Marie, and Shawinigan, while the most volatile – Prince George- is linked to forestry. Among mid-sized towns that show consistent growth, there is more diversity and, significantly, much less of a resource-dependence. Kelowna, like Vernon, has a growing "residential" economic base; this also holds to some extent for Nanaimo and Barrie, both falling within the urban shadow of a large metropolis. Guelph (but also Barrie), St-Jean, and Drummondville are diversified towns within short range of, respectively, Toronto and Montreal, beneficiaries of the industrial exodus referred to earlier. For

¹⁴ Figures 2.12 are based on the Statistics Canada *Labour Force Survey*. Below the CMA (100,000 population) threshold, the survey does not necessarily cover all census agglomeration (CAs). For this group, only population data is available. Population figures are persons 15 years of age or over.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

mid-sized cities, proximity to a large urban centre is a definite plus. Greater Moncton stands out as a notable exception, a consistently growing mid-sized city (in fact having passed the 100,000 threshold to become a CMA for the first time in the 2006 census) not located within easy range of a large metropolis. Fredericton's performance is less surprising, given its capital city status.

Figure 2.15 gives similar information, but this time for employment and for CMAs. Note that the (almost) consistently higher growth rates for 2000-2009, compared to the ten previous years, reflect the effects of the recession of the early 1990s. The most consistently job-creating CMAs – both before and after 2000 – are either large metropolitan areas (notably, Calgary and Vancouver) or places nearby: Abbotsford, Kitchener-Waterloo, Oshawa. However, Halifax and Saskatoon also stand out as centres with consistent growth. Of the six cities with slowest (or negative) job growth, three are in Southern Ontario, two in Northern Ontario, and one in Northern Quebec. But all, with exception of Thunder Bay, rank high as manufacturing or mining cities (recall Table 2.3).

Nowhere does the contrast between manufacturing and services appear more clearly than for CMAs. If Oshawa and Abbotsford are excluded, all the CMAs in the top half of Figure 2.15 are strong service centres.

Some CMAs stand out for having seemingly turned their economies around with considerably stronger employment growth between 2000 and 2009 than during the previous decade: Quebec City, Kingston, St. John's, Trois-Rivières. The employment surge in St. John's is not difficult to explain, but no obvious explanation comes to mind for the others.

Figure 2.16 looks at the evolution of labour markets from another perspective: the percentage change in the unemployment rate between 2000 and 2009. The "losers" are on top. They are not difficult to identify. The six CMAs that had the sharpest relative rise in unemployment are all in Southern Ontario, including Toronto. Figure 2.17 looks at the annual evolution of unemployment rates for four of those CMAs, those located west or south of Toronto. The trend lines show deviations from the Canadian average (in order to filter out the effect of Canada-wide business cycles). The results suggest that labour markets started to deteriorate in what we shall call Ontario's Peninsular South – basically, the stretch between Buffalo and Detroit – well before the onslaught of the 2007-2010 recession with the breaking point somewhere between 1995 and 2000, depending on the city. Something has seemingly snapped in Ontario's Peninsular South, but what?

On the bright side, labour market conditions have improved in CMAs not traditionally considered dynamic growth centres. Here, we encounter again Quebec City, Kingston, St. John's, and Trois-Rivières, but also Sherbrooke, Saint John, Saguenay, and Saskatoon, all with exception of the latter located *east* of Ontario. The potential resurgence of Eastern Canada, suggested in the previous chapter, is thus not merely an optical illusion. The next five CMAs in line (moving

up on Figure 2.16), all of which appear to have been little affected by the most recent recession, are all capitals, underscoring yet again the importance of service functions. Finally, Figure 2.18 shows the annual evolution of unemployment rates for four CMAs whose labour markets have, it would seem, been systematically improving. All four – Halifax, Saskatoon, Winnipeg, and Quebec City – now exhibit unemployment rates below the Canada average. What is happening in Winnipeg, the traditional laggard among large CMAs? More surprising still is Quebec City's plummeting unemployment rate since 2000. Employment growth has significantly accelerated (recall Figure 2.15). Again, what is happening? Both changes are good news, but both also await further explanation.

2.4 The Big Four

Toronto, Montreal, Vancouver, and Calgary are examined in greater detail in this section. Figure 2.19 shows the evolution of relative unemployment rates on the same model as the two preceding figures. Since the mid 1990s, Calgary systematically exhibits the lowest unemployment rate. Also since the mid 1990, the rates for Calgary and for Vancouver tend to rise and fall together, suggesting exposure to similar fluctuations in external demand. Montreal's unemployment rate remains systematically above the Canada average over the whole period, a reflection both of a (still) fundamentally weak labour market and the historically lesser mobility of Francophones. Most noteworthy, however, is the evolution of Toronto's unemployment rate, moving from the lowest (best) to the highest (worst) position, surpassing even Montreal's unemployment rate for the first time since Statistics Canada began to publish such data (1966). Toronto's unemployment rate, compared to the other three, has been systematically deteriorating since 2000. Again, a full understanding of what lies behind this trend must await further explanation

Figure 2.20 shows the evolution of the 15 to 24 age group for the four CMAs, an indicator of attractiveness for young mobile populations. Vancouver systematically draws in young people irrespective, it seems, of local market conditions. Vancouver's growth, in other words, is as much people driven as economics driven, Canada's premier "residential" metropolitan economy is (at least partly so) fuelled as much by life-style choices as by job choices. The difference with Calgary is striking where fluctuations clearly reflect business cycles; young populations actually fell during the 1990-1994, as they did in Montreal and Toronto. For Calgary, the fluctuating trend-line suggests a more footloose cohort, which is not necessarily good news. Montreal's trend-line is well below that of the others, a reflection again of its weak labour market, with however a slight upward movement in recent years. The continued strong upward movement of Toronto's trend-line is surprising given the recent evolution of that city's labour market (see previous paragraph), but does in part explain the city's high unemployment rate. The young

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

continue to move to Toronto even if there are fewer jobs simply because Toronto is Toronto¹⁵. Can this be sustained?

Figures 2.21 through 2.24 compare the recent evolution of industry specializations for the four CMAs for respectively employment in manufacturing, scientific services, the media, and finance. Summarizing the four figures, the following trends stand out:

Toronto's continuing specialization in finance: Compared to the other three CMAs, Toronto's specialization in finance has in fact increased. Should this be a cause for concern, given the last recession and the volatile nature of the financial sector?

Montreal's move up in the media and related cultural industries: There is a parallel upward movement in scientific services, although in both cases starting from a lower relative position. Is a division of labour emerging between Canada's two great eastern metropolises with one (Toronto) relatively more specialized in management and finance-related activities and the other more in "creative" and culture-related activities?

Calgary's continuing lack of diversification: Calgary exhibits below unity quotients in all but the scientific services class, in turn highly dependent on the extractive sector. There is nothing in these results to suggest that Calgary might one day replace Toronto as Canada's financial centre. Little relative progress is apparent in manufacturing (weaker than Vancouver); the relative weight of employment in the media sector has in fact declined.

Vancouver shows no particular pattern over time: There is, however, a consistently strong showing in the media sector and consistent (though declining) above unity scores in the scientific services category. Manufacturing aside, in which Vancouver remains weak, the strong showing in these two service sectors suggests a certain resemblance with Montreal.

In relative (and also absolute) terms, *Toronto and Montreal remain Canada's two great manufacturing centres*. Nothing in the results suggests that this will change, despite the continuing shift of manufacturing to small and mid-sized cities (often within close proximity).

Table 2.4 presents a more detailed portrait of industry specializations of the four CMAs with addition of Ottawa-Gatineau. Table 2.5 gives the same information for 1996. Note that the specializations (location quotients) given are always *relative* (to the Canadian average). The following points stand out:

Vancouver's specialization in transport-related activities, which appear to be the mainstay of its economic base. Its media base is confirmed by the positive scores (location quotients) for the

¹⁵ Note that at the time of writing, September 2010, Toronto's unemployment rate was still above that of Montreal

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

performing arts and artist class and for the motion picture and recording studios industry class. The latter also shows up for Montreal.

Montreal's specialization in manufacturing (nine of 12 quotients in 2006) in a broad range of industries, from low tech (textiles) to high tech (aerospace). With the exception of the media-related sector mentioned previously, no knowledge-intensive service sector stands out. Its slow growth is in part rooted in its industrial structure.

Ottawa's parallel specialization in high-tech manufacturing and knowledge-intensive services (nine of ten quotients in 2006), once the two Federal Government related sectors are discounted. The end of the dotcom bubble and the fall of Nortel do not appear to have irretrievably damaged Ottawa's knowledge-based economy.

Toronto's diversified specializations: five in manufacturing (both high and low tech), three in knowledge-intensive services, two in finance, and two in transport-related activities (in 2006). This diversity - the essence of a large metropolis - explains in part its continued attractiveness for immigrants (internal and foreign) and suggests resilience. The strong presence of the financial sector, the only big CMA so specialized in 2006, does however, as noted earlier, point to a greater vulnerability to business cycles.

Calgary's specialization in extractive industries. The five highest quotients are either for extractive or for related sectors. The first two quotients are by far the highest for any large CMA in 2006. Although some changes in position are noticeable since 1996, Calgary's link to the extractive sector does not seem to have lessened (recall also Table 2.3). It is difficult not to conclude that such a high level of specialization entails risks, not the least of which is the crowding out of other potential export industries.

2.5 Summary and Conclusions

Recent trends do not indicate any lessening either of the importance of agglomeration economies for firms or of the attractive power of cities. Economic activity continues to cluster in and around large urban areas. There is no evidence that current (or foreseeable) innovations in IT will lessen the importance of proximity.

For manufacturing – resource-based industries excepted - proximity to a large urban centre remains an essential consideration for most industries.

For services, notably knowledge-intensive services, city-size is a determining factor. Location also matters; regional service centres – located some distance from larger competitors – are generally more successful in building a knowledge-rich service base.

Regional service centres, provincial capitals included, generally exhibit higher growth rates than communities specialized in large scale manufacturing or mining.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

The mid-sized manufacturing cities of Southern Ontario have on the whole performed less well since 2000 than the mid-sized manufacturing cities of Southern Quebec.

Several urban areas not traditionally thought of as particularly dynamic have exhibited above-average growth since 2000: Quebec City, Saint John, and Saskatoon are examples. Winnipeg, traditionally a laggard among CMAs, shows signs of new-found vigour.

Turning to Canada's largest metropolitan areas, some signs are positive, others less so:

The Greater Ottawa area seems, on the whole, to have survived the dotcom bust (notably the fall of Nortel) without too much damage and appears poised for continued growth.

Montreal, although still a comparatively slow growth economy, appears poised on a renaissance of sorts, founded on its diverse industrial base, the apparent strength of Southern Quebec's manufacturing cities, and on a growing specialization in cultural and "creative" industries.

Vancouver continues to grow and to attract people, irrespective it seems of the broader economic context. An appropriate designation might be the Teflon city, whose growth is as much founded on its "residential" as on its economic advantages.

Toronto shows signs of over-specialization in finance and related industries, making it overly vulnerable to business cycles. Given also the current poor performance of manufacturing in Southern Ontario, one may question whether Toronto's current growth **rate** is sustainable.

Calgary remains highly specialized in extractive-linked industries (the oil patch) with few clear signs that its economy is diversifying. Here again, one may ask whether its current growth is sustainable.

3. Geography, accessibility and geo-structural forces: an econometric approach.

In this chapter we take a close look at the connection between relative location, local characteristics, industrial structure and accessibility along transport networks as they pertain to employment growth across Canada. Indeed, employment growth clearly varies across all these dimensions: growth is different from province to province, from urban to rural, from expensive to less expensive and from well connected to isolated locations (Polèse and Shearmur, 2002). These differences can easily be documented across each dimension, but a key question concerns the extent to which growth differences observed across one dimension are in fact attributable to other factors. For instance, it is legitimate to ask whether the differences in growth rate observed between Alberta and Ontario are attributable to differences in industrial structure, differences in level of urbanisation, differences in human capital, or to some factors specific to each province and not reducible to these other dimensions. In this chapter we attempt to shed some light upon this type of question for the period 1991-2006. Longer term analyses have already discussed trends from 1971 to 2001 (Shearmur and Polèse, 2007; Apparicio et al, 2007).

The first two sections of the chapter focus upon some questions of definition. These are crucial in order to understand our choice of metric and the type of locality that we are studying (which we will also use in chapters 5 and 6). Then, after a brief methodological section, the factors that have driven local and regional growth across Canada from 1991 to 2006 will be analysed. A separate section will be devoted to the effect that accessibility has upon local development, following which some concluding remarks are made.

3.1 A note upon the measurement of local growth

Although many economists prefer defining economic growth as growth in GDP, this causes problems when applied to regional (and particularly to sub-provincial) economies, for two main reasons. The first is one of measurement. It is not in fact possible to measure GDP directly at a local level (Lemelin and Mainguy, 2005). Local GDP estimates are therefore most often derived from local employment data to which national (or maybe provincial) productivity levels are applied sector by sector. At the very best this is a circuitous way of measuring local GDP, and is prone to serious errors if, as is generally recognised by economic geographers and location theorists, one of the key differences between regions is their different local productivity levels. The second problem, assuming that GDP can be measured locally, concerns its relevance to local communities. From the perspective of local populations and administrations, local GDP (i.e. the contribution of each region to total sales in the economy) is to some extent irrelevant. Indeed, a highly capitalised and productive aluminum smelter, for example, can contribute very significantly to local GDP without providing much local benefit in terms of, say, employment or

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

salaries. Indeed, evidence tends to suggest that in some regions the increase in smelter productivity has been accompanied by job losses (Shearmur and Bonnet, 2010).

In short, at the local level it is jobs and income that matter. Of course they are an indirect result of GDP, but not necessarily of *local* GDP. The metric relevant at the local level is the *impact of local GDP on jobs and incomes*, and not *local GDP itself*. Furthermore, even if salaries are important, communities survive principally because there are local jobs: indeed, high income regions tend to lose population to low income regions if there are more opportunities in these lower income regions (Delisle and Shearmur, 2010). This often occurs when high incomes are attributable to capital intensive industries that pay well but do not create jobs. These industries tend to crowd out local entrepreneurs who are unable to compete for the workforce in terms of salaries and benefits, a phenomenon that we have described before and dubbed 'the intrusive rentier syndrome' (Polèse and Shearmur, 2002), which is discussed in greater detail in the following chapter.

Thus, if we are interested in local and regional development *from the perspective of local communities* (and not in terms of the contribution of each locality to the nation's overall GDP), then one of the best indicators to use is employment. Employment loss weakens local communities, and employment gain is a sign of strength (though in some cases, such as Alberta, it can also lead to the overheating of the housing market and to problems associated with rapid growth). Thus, in this chapter we focus upon employment growth, and seek to understand what has been driving it, at the level of the local community, over the 1991 to 2006 period.

3.2 A few definitions

What do we mean by local community? At the conceptual level, and in the context of local economic development, a community can be defined as a geographically bounded group of people who share common economic interests. Thus, within such a local community, the prospects of the local retailer depend in part on the prospects of the local sawmill, and the prospects of the local school depend upon the jobs created by the retail, timber and other local activities. The best way to circumscribe an economic community, at least when local and regional development is of concern, is to examine local labour market areas. Without being a panacea (after all, other factors such as consumption, inter-business connections and so on can also link economic actors across space), labour market areas – which are territories within which a majority of inhabitants both live and work (Ribichesi and Shearmur, 2008) – are a good way of making operational (i.e. of actually identifying for empirical purposes) economic communities. Thus the inhabitants of a labour market area depend (for their jobs and livelihood) upon the economic activity that occurs within the area.

Labour market areas almost invariably extend beyond municipal boundaries, leading to jurisdictional problems. Statistics Canada defines urban agglomerations (these include Census

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Metropolitan Areas and Census Agglomerations. Statistics Canada, 2010) as labour market areas that have, at their core, a municipality of over 10 000 inhabitants. Thus, one of the building blocks of our own operationalization of the concept of economic community is these urban areas, to which we have also added all other municipalities that have over 10 000 people but that are free-standing (i.e. not connected to any others by intensive commutes): we therefore have 203¹⁶ 'urban areas' which meet our conceptual understanding of what an economic community is.

These 203 labour market areas do not cover the entire territory. We have thus supplemented them with 218 spatial units, based upon census divisions (which are basically counties) from which we have subtracted the 203 labour market areas, leading to a total of 421 units. The 218 supplemental spatial units do not meet our conceptual definition of economic communities as precisely as labour market areas do, but are a rough approximation, for two reasons. First, we know that, by construction, these areas are not very strongly connected (by way of commutes) with the 203 labour market areas, though of course commutes do occur across these boundaries. Second, previous empirical work on Quebec has shown that whilst each census division often includes more than one small labour market area, relatively few labour market areas straddle the border between census divisions (Ribichesi and Shearmur, 2008). These units, which we classify as rural because they include no municipality with over 10 000 inhabitants, serve to complete our spatial coverage of the Canadian territory.

3.3. Methodology

The analysis in this chapter builds upon a basic growth model developed over the last 20 years or so by William Coffey, Mario Polèse and Richard Shearmur (Shearmur and Polèse, 2007; Coffey and Polèse, 1988). It is premised upon the notion that local growth varies across two types of dimension. First, local growth varies across a 'structural' dimension: the growth of a local economy depends upon invariant factors such as the province where it is located and its location relative to major metropolitan areas, and to factors that are relatively invariant, such as size¹⁷. Second, local growth varies across a 'local' dimension: the growth of a local economy depends upon variable factors (some more variable than others) such as human capital endowment, local costs, level of specialisation, industrial structure, local government and institutions. Although some of these local factors do not vary rapidly over time, it is believed

¹⁶ The geography used for the 1991-2001 period is different, based as it is upon 1991 boundaries: there were 152 urban agglomerations and freestanding municipalities of over 10000 people in 1991, and 230 rural areas.

¹⁷ Of course the *absolute* size (population) of local areas varies, but their size *relative* to all other local areas varies little over time: the hierarchy of places in terms of size is a durable feature of urban systems, although long-term and persistent differences in growth rates do slowly alter this hierarchy, particularly amongst smaller local areas (Lalanne and Shearmur, 2010)

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

that they can more readily be influenced by local policies than structural factors. A third dimension, that of local governance, institutions and individuals is recognised as being relevant, but cannot be included in an econometric analysis because these factors are unique to each locality and cannot really be measured in a systematic way.

The model is used in this chapter to explore employment growth, but variants of the model have also been used to explore population growth (Shearmur and Polèse, 2007), income growth (Shearmur and Polèse, 2005), and will be used in chapters 5 and 6 as a framework within which to explore residential economies and the differences between economic outcomes (in terms of employment and incomes) for men and women.

The analytical approach is as follows. Groups of variables, beginning with basic structural ones such as regional and urban classifications, are added progressively to an Ordinary Least Squares regression. Such an analysis allows us to estimate the effect of each variable upon employment growth *after accounting for the effect of all the other variables in the model*. For each regression, variables are eliminated if they do not meet the 10% statistical significance test. This does not necessarily mean that the eliminated variables have no effect or are never important, but rather that it is not possible, within the framework of the regression analysis, to determine with at least 90% probability of being correct that their effect is different from zero¹⁸. Outliers, i.e. observation that do not fit the model, are removed. To ensure that the models remain comparable outliers are identified from the full model¹⁹.

All the data used are census data. Although they have the disadvantage of only being available every five years, and therefore of not covering the most recent period of major change in the world economy, they have the advantage of being accurate to a small spatial scale.²⁰

¹⁸ Once the final model is found, tests for multicollinearity are performed on the remaining variables, and heteroskedasticity robust standard errors and significance tests are performed. This explains why a few variables are retained in the model but do not (after robust regression) attain the 10% significance level. Overall there are very few multicollinearity problems (the standard retained is a Variance Inflation Factor lower than 5 – in most models the highest VIF is in the order of 3) and correction for heteroskedasticity does not alter the conclusions to any great extent

¹⁹ The criterion for removal is based upon Cooke's distance: if it is above $4/n$ for a given observation, that observation is deemed an outlier, where n is the total number of observations. The slight variation in final 'n' between models for the same year is due to missing variables for a small number of observations.

²⁰ Such small scale analyses will be very difficult to perform for the 2006-2011 period owing to changes in the census methodology brought in in 2010. Indeed, it will not be possible to determine whether observed growth rates in small localities are caused by changes in employment levels, changes in the way employment has been measured, or by errors induced by heightened (or spatially biased) census response rates.

3.4 Employment Growth across Canada from 1991 to 2006

3.4.1 A Brief Description

Before describing the results of the regression analyses, in which the effect of each growth factor is controlled for the presence of all other effects, it is worth looking at some straightforward descriptive tables that correspond to what an observer would notice by looking at data series.

a. Provinces and synthetic regions

Table 3.1 presents the total employment in each province between 1991 and 2006, together with employment growth. Some key patterns emerge. Newfoundland, from losing employment during the early nineties has reached a situation, in the early 2000s where it is growing at a rate comparable with all but Alberta and the territories. Alberta, already growing quite rapidly in the early nineties (but slower than BC), grew extremely fast between 1996 and 2006. Ontario, which grows faster than Quebec in the nineties, grows at the same rate as its francophone neighbour in the early 2000s. Ontario's growth rate, unlike Quebec's and most other provinces', slowed dramatically between the late 1990s and early 2000s. The two Prairie provinces, Manitoba and Saskatchewan, have grown steadily since the mid-nineties, reversing a trend of stagnation that has been observed since at least the 1970s. Finally, growth in BC, very rapid in the early nineties, has been slowing steadily since then.

These trends beg a number of questions. The first relates to what is happening *within* each province. Indeed, it may well be that all of Newfoundland's growth (for instance) is focussed in one urban area. If this is the case then, on average, labour markets in Newfoundland may still be doing badly despite the success of a small number of them. It is for that reason that the regression analyses that will follow in section 3.4.2 examine the *probability that a labour market in a province is growing*, rather than the aggregate growth rate of each province. The second question that such an overview does not address is the possibility that there are other ways of subdividing Canada that also reveal major differences in growth rate. Two will be examined in more detail: the subdivision of Canada by local size and position relative to a major agglomeration, similar to that employed in the previous chapter, and the subdivision of Canada according to local industrial structure. A third question that is also not addressed by these aggregate provincial figures is the possibility that the aggregates are driven by local factors such as industrial specialisation and human capital endowment.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

If we subdivide Canada according to city size and centrality, using a 100-150km distance threshold²¹ (short-hand for proximity to a major metropolitan area – we will call such regions synthetic regions), stark contrasts in growth begin to appear (Table 3.2). These are not evident in the early nineties, a period during which most synthetic regions grew slowly, with slightly faster growth in central rural areas and in medium sized peripheral cities. The early nineties was a period of jobless recovery that followed the first 'white collar' recession, the first time since the 1930s that financial services and white collar jobs had been hit by an economic downturn. In the late nineties the Canadian economy took off, the .com boom referred to in chapter 1, and one of the key factors that differentiated slow growing from fast growing areas was their proximity to major metropolitan areas. All regions characterised by proximity (within 100km) to a major metropolitan area grew at rates of between 13 and 18%, whereas all peripheral regions (beyond 100 km) grew at rates of 6% or less, the relatively faster rates being observed in larger cities. During this period, and across the nineties as whole given the acceleration of central growth rates in the late 1990s, proximity to a metropolitan area was a key determinant of employment growth.

Our figures for the early 2000s cannot be compared directly to those that cover the 1990s. Indeed, many fast growing localities, particularly in central rural areas (RC), have been reclassified as small central cities: many of the fastest growing central rural municipalities of the 1990s have crossed the 10 000 population threshold, and are now considered to be small central cities. Conversely the central areas that have remained rural tend to be the slower growing ones. Thus, even though rural central areas are declining in the early 2000s, this must be set against the fast growth of small central cities. It is probable that not much has changed, but the reclassification of geographic units since 2001 reveals that not all central areas benefit from their proximity to a metropolitan area. *There are areas of decline within easy reach of Canada's fastest growing regions.*

One of the striking features of the growth rates observed across synthetic regions in the early 2000s is that there is little difference between central and peripheral regions: except for small peripheral cities and for rural areas (whether central or peripheral), all types of synthetic region have grown at rates of between 7 and 13%, the fastest rate being for medium sized peripheral cities. Thus, whilst it can be said that small peripheral cities and all rural areas have not benefitted from the early 2000s' boom, there is not much difference between larger cities. Whereas Canada's central areas seem to have benefitted from continued metropolitanisation and growth in the service industry (as well as in certain types of manufacturing), many peripheral regions seem to have benefitted from resurgence in the price and demand for raw

²¹ Given the size and shape of the regions analyzed, an exact distance threshold is not possible to set. The threshold corresponds to a maximum of 90minutes drive to the closest large metropolitan area.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

materials and from longer term structural changes in cross-border trade that may be benefitting cities such as Winnipeg and Halifax.

It should be noted that whereas the differences in growth rate between the fastest and slowest provinces (Table 3.1) is far higher than that between the fastest and slowest synthetic regions (Table 3.2) in the early 1990s, the spread is comparable in the late 1990s and early 2000s. Furthermore, given the small size of certain provinces (far smaller, in terms of jobs, than the smallest synthetic region), we would expect the spread to be smaller between synthetic regions since extreme growth rates are less likely the larger the employment base. This suggests that *within province* differences in growth rate are becoming more marked than *between province* differences, an observation already made for the 1971 to 2001 period in a previous study on income levels (Shearmur and Polèse, 2005).

b. Industrial structure and local characteristics

The two ways of dividing Canada just described are essentially geographic. The first, provinces, takes administrative boundaries which group together contiguous territories under a single provincial jurisdiction. The second groups together localities that have in common their size and their location relative to Canada's major metropolitan areas: although these synthetic regions are not contiguous (hence the adjective 'synthetic'), they are grouped together based upon essentially geographic (and to a lesser extent demographic) criteria.

Another way of grouping localities – which, as has been mentioned above, approximate labour market areas – is by industrial structure. Indeed, it is possible that the differences between provinces and synthetic regions are attributable to the unequal distribution across space of economic sectors, each of which is responding in different ways to national and global markets. There are many ways in which labour market areas can be classified. In this exercise we have chosen to apply a hierarchical statistical clustering technique²² to the location quotients of 18 sectors (23 for the 2001-2006 period) that cover the entire economy. Since the technique is hierarchical there are potentially as many industrial structures as there are observations. We have chosen to retain about 10 clusters: for each period this number of clusters captures approximately 40 to 45% of the total variability in industrial structure thus defined.

Growth rates – calculated here, as for the other classifications, by aggregating all employment in each cluster - differ considerably across industrial clusters (Table 3.3): the contrasts are of a

²² The Ward method is used, with standardised variables. Extreme location quotients (those above 5 – which are occasionally found in small resource-based communities, particularly in the primary sector) are set at 5. The exact number of clusters retained is based upon variations in the semi-partial r-squared. A solution of about 10 was sought: the exact cut-off was determined by choosing a number of clusters for which the addition of one more cluster increased the overall explanatory power of the classification by an amount smaller than other increments in the neighbourhood.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

magnitude slightly smaller than across provinces in the early 1990s, and similar to provinces and synthetic regions thereafter. In each period one industrial profile stands out as capturing about half of all Canadian employment, and particularly employment in large cities: CL15 in the 1990s and CL17 in the early 2000s comprise high order and other services, and, except in the early 1990s grow faster than most other industrial profiles. In the early 2000s a cluster has emerged that combines leisure, professional services and construction, CL23: this profile is closely associated with fast growing resource regions. Fast job growth is not necessarily in primary industries themselves, but in the services, leisure and construction activities that surround the development of resource extraction.

Maps 3.1 and 3.2 show the general distribution of these industrial structures. It should be noted that these maps are misleading since urban areas are small (and sometimes invisible), whereas rural areas, which sometimes comprise relatively small numbers of jobs, dominate the cartographic representation²³. The main point to retain from table 3.3 is that employment growth seems to vary just as strongly across localities grouped together according to industrial structure as it does across localities grouped together according to province or to synthetic region. In short, provinces are not the only, or even maybe the most, relevant way of subdividing Canada and understanding the geography of employment growth.

A final way of considering employment growth is to consider the endogenous growth literature, which tells us that employment growth is attributable to local characteristics, such as human capital (Romer, 1989; Florida, 2002), local costs (see Dicken and Lloyd, 1990), local diversity or specialisation (Porter, 2003; Jacobs, 1969; Shearmur and Polèse, 2005), and local agglomeration economies (Myrdal, 1959; Kaldor, 1970; Krugman, 1995) which we will proxy by population size. Unfortunately it is not possible for us to find adequate proxies for all the factors put forward as local drivers of growth. In particular, institutional and cultural factors, which we believe can in some cases be crucial, are not included – and will be considered in the next chapter. Only some of the *measurable* local growth factors are considered here. This exercise will attempt to explore how far they can take us towards understanding variations in local employment growth.

Table 3.4 presents straightforward correlations between four local growth factors and local employment growth across all the regions (approximately local labour market areas) in Canada. Unlike for the three preceding analyses, where employment has been aggregated across all labour market areas within each province, synthetic region or cluster, in this table it is local

²³ Another limitation that becomes apparent from the study of the maps is that the primary sector includes agriculture, fishing and extractive activities (oil, mining...): thus parts of southern Ontario and Quebec are equated with Alberta. Strictly speaking a separate analysis that focuses only on extraction and manufacturing sub-sectors ought to be performed, but space limitations mean that only one such analysis, at a fairly high level of sectoral aggregation, is performed.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

growth rates in each labour market that are analysed, as they shall be in the next section where regression results are presented.

Industrial specialisation: The more specialised labour market areas tend to grow more slowly than the more diversified ones, although this effect is almost absent in the early 1990s. Thus, except in this early period, there seems to be an employment growth premium associated with local industrial diversity, consistent with the continued growth of larger CMAs, noted in chapter 2. It should be noted, however, that there is no necessary link between diversity and industrial structure²⁴ (as presented in table 3.3). Indeed, within each industrial structure there are labour markets that are more or less diverse. Furthermore, a labour market can be highly specialised (high value on the industrial specialisation index) in a variety of different sectors (different industrial structure).

Population size: Population size is used as a rough indicator of local agglomeration economies. The higher the employment level in any particular labour market the higher the probability that there will be shared infrastructure, local services etc., i.e. positive externalities associated with urbanisation. These are evident in the late 1990s and, to a lesser extent, in the early 2000s, but are almost absent a decade earlier.

Local wage level: On the one hand, employment will tend to grow in lower wage locations because of cost savings. On the other, high wages can also indicate high demand for labour: thus, over the short term, high wages may be an indicator of growth, and may attract workers from elsewhere. In the early 1990s and early 2000s it would seem that the second process (wages attracting workers from elsewhere, overheating job markets) was occurring. The contrasting implications of high wages are further considered in chapter 4.

Percent of local population with a degree: This indicator is a rough way of assessing local human capital. It should be borne in mind that the underlying concept is human capital, which comes in many different forms. The percent of degree holders is often correlated with the overall human capital of a population (including technical skills, experience, know-how), *but should not be confused with it*. The connection between local human capital and local employment growth is volatile. There was almost no statistical connection across Canadian labour markets in the early 1990s. In the late 1990s, it is those labour markets which began the period with lower levels of human capital that grew faster. However, the reverse is true of the early 2000s. This uneven connection may be partly attributable to the fact that many local labour markets in Canada are driven by resources: thus, even if these do not represent a majority of jobs in Canada, they may,

²⁴ At the limit, an industrial structure identical with Canada's will necessarily be diverse. But as soon as one looks at industrial structures that depart from the Canadian benchmark, it is feasible to find identical levels of diversity in different industrial structures, and quite wide variations of diversity within the same industrial structure.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

during some periods, drive the correlations. Even if, at the aggregate level, it may be true that human capital is a driver of economic growth, *this is not necessarily true at the local level*, especially in smaller communities. The assumption that local human capital will lead to local growth is an example of an ecological error, i.e. of an error caused by assuming that what is true at one scale (in this case at the global, and maybe at the national, metropolitan scale) is also true at the local level.

In this section we have rapidly presented a series of results that show that employment growth varies across a number of dimensions, and that it may also be driven by certain local factors. However, all these classification systems are inter-related, and the local factors just described are also distributed in a particular manner across space. Thus, however many classifications or local factors are considered independently, the real question is: to what extent does each classification or factor contribute to employment growth *after taking account of all the other classifications and factors*.

In the next section we provide an answer to this question.

3.4.2 A model of employment growth across Canadian labour market areas

All regressions dealing with total employment are in table 3.5. Regressions labelled 'A' are for the 1991-96 period, 'B' for the 1996-01 period and 'C' for the 2001-06 period. Regressions with suffix '1' include only provinces, to which are added synthetic regions (suffix 2), local characteristics (suffix 3), industrial structure (suffix 4) and accessibility (suffix 5). We will discuss this last regression in the next section.

It is important to understand what these regressions can tell us. Each spatial unit in Canada counts as one observation. The results of the regression can give us some idea of the typical growth rate of a spatial unit which has the characteristics identified in the regression. Thus, looking at regression B2 (for example), we can see that between 1996 and 2001 a spatial unit located in British Columbia tended to grow 5.1% slower than a unit located in most other provinces (except the Prairies) after controlling for other characteristics in the model. We cannot conclude, from this result, that British Columbia as a region grew 5.1% slower than other regions in Canada – if all employment growth were concentrated in one spatial unit, for instance, employment growth could be faster in BC than in other regions even if the average BC locality is declining. Indeed, from table 3.1 we see that British Columbia as a whole grew faster than most provinces. Regression B2 tells us that most spatial units in British Columbia did not benefit from this employment growth.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

The first thing to note from table 3.5 is that the model changes from period to period. Although the overall explanatory power of the model is strong (the adjusted r^2 ²⁵ of models A4, B4 and C4 is between 0.32 and 0.55), the effect on employment growth of each item in the model varies over time. Thus, even though our model provides a good framework for understanding employment growth, and even though employment growth varies across the chosen dimensions in each period, it is difficult to say that there is a systematic connection between, say, local costs and employment growth.

The results in these tables will be discussed in general terms, since specific regression coefficients can be observed in the table. Each block of variables (or each dimension) will be discussed in turn.

Regions: The regional dimension seems to be losing in importance across the period. Whereas this dimension alone accounted for 31.4% of the variance in employment growth across spatial units in the early 1990s, this has declined to 7.9% in the early 2000s, consistent with our earlier comments (chapter 1) on the gradual reduction of inter-provincial disparities.

The distribution of employment growth across Canadian regions is also changing. In the early 1990s there was a clear east-west pattern, with slow growth in the Maritimes, average growth across central Canada, and fast growth in the West. By the early 2000s, localities in Ontario are faring worse than those in Alberta, BC and Quebec, and only the Prairies and Atlantic Canada seem to be growing more slowly.

After including all controls (models A4 to C4) the overall story changes somewhat since localities in Ontario are the slowest growing given their industrial structure and other attributes. It is interesting to note that the faster growth of localities in Alberta than in Quebec during 2001-2006 is largely attributable to their industrial structure. Indeed, this tendency, which is evident in models C1 to C3, disappears in model C4, the model where industrial structure is added. After these controls, Quebec and Alberta emerge as the regions in which localities are, on average, growing the fastest in Canada during 2001-2006, and Ontario the region where they are growing the slowest.

Synthetic regions: Does the classification of localities by synthetic region add any information to that provided by the model with regions? In the early 1990s, very little extra information is added (increase in variance explained – also referred to as the r^2 - of 0.024, and we learn that

²⁵ The adjusted r^2 , or variance explained by the model, varies between 0 (the model explains nothing) and 1 (the model explains everything). Except in cases where the model is almost tautological, good models in social science often explain between 0.2 and 0.6 of all the variance. Values of 0.3 to 0.4 are very good for a growth model. In this context, an increase in the variance explained of 0.05, for instance, can be quite considerable, and models that explain almost 0.6 of all variance – as is the case with the full model – are very good models indeed that capture key dimensions of the growth process.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

localities in central rural areas (RC) grew faster than all other types of locality. In the late 1990s, however, the addition of synthetic regions to the model almost doubles its explanatory power, with metropolitan areas and localities within easy reach of them growing significantly faster than localities in peripheral areas. In the early 2000s, synthetic regions remain very important in understanding the differences in growth rate between localities, though the pattern is not simply one of rapid growth in central areas. What emerges in the early 2000s is a sharp distinction between small peripheral cities and rural areas (which have very slow employment growth) and all other types of locality that tend to grow fast. Even localities in central rural areas grow, on average, quite fast. Thus, the employment decline, noted in table 3.2, must be concentrated in a small number of central rural areas.

Human capital, local costs (wages) and industrial specialisation: it is not really possible for policies to modify a locality's size or location. However, it is feasible for policy intervention to attempt to address questions of human capital, local costs and industrial specialisation (though this last is strongly connected with size). Policies can, of course, address much more, such as local institutional arrangements, local knowledge bases and so on, but in the context of this study only a few of the major local growth factors can be analysed.

In the early 1990s and early 2000s these local factors increase the variance explained by about 0.03- a small but not insignificant effect. In the late 1990s these factors were more important drivers of local employment growth since their addition to the model increases the variance explained by 0.08.

Human capital: a locality with 1% more graduates than its neighbour tended to benefit from a 0.2% growth premium in the early 2000s, with no growth effect discernible in the 1990s (models A3-C3). However, after controlling for industrial structure the effect of having more graduates disappears in the early 2000s, but becomes quite strong in the 1990s. During the 1990s, after industrial controls, a locality with 1% more graduates grew by about 0.5% more.

The graduate effect, though in some cases quite large, is difficult to interpret for a variety of reasons. First, the results are cross-sectional: even if during one period, there is a premium associated with higher levels of human capital, does this mean that, over time, increasing the local level of human capital will increase growth? At the very least our results suggest that the way in which local endowments in human capital are connected to local growth was not the same in the 1990s as it was in the early 2000s. Indeed, human capital is highly mobile. Thus, a locality's initial endowment in human capital does not tell us much about where the human capital's returns will be felt.

Second, the effect of graduates on local growth disappears in the late 1990s after accessibility is introduced (model B5): thus, even if there appears to be a *prima facie* association between local

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

human capital endowment and local employment growth in the late 1990s, this link only appears once we control for industrial structure, and disappears after we introduce accessibility.

In short, whatever a locality's level of human capital (as measured by share of university graduates) its effect on local employment growth is strongly interconnected with the nature of the local economy, the accessibility of the locality to the rest of the economy, and its own size. This result is not entirely surprising: relocating 100 scientists with PhDs to Sable Island will not make it begin to grow suddenly!

Local costs: In the late 1990s and early 2000s, after controlling for region, synthetic region, human capital and level of specialisation, employment growth tended to be faster in low wage localities. The effect is quite large. For each increase in \$10 000 in local wage levels local employment growth is 1.9% (early 2000s) to 4.2% (late 1990s) lower. This effect disappears in the early 2000s after controls for industrial structure, but the negative effect remains for the late 1990s.

Industrial specialisation: In the 1990s, but not in the early 2000s, there is a tendency for localities with a more diverse economy to grow faster, and this effect is not dependent upon industrial structure (models A4-C4). However, this effect is connected with accessibility since, after controlling for accessibility, the diversity premium disappears in the early 1990s, and appears in the early 2000s. Again, we can conclude that the connection between a locality's level of diversity and its employment growth is connected with the nature of the local economy and the accessibility of the locality to the rest of the economy.

In sum, the local effects appear, at first glance, to play a role which is on the whole commensurate with theoretical expectations. However, if controls for industrial structure²⁶ and accessibility are included the connection between local effects and growth is modified, and sometimes disappears. This has important policy implications. Indeed, much notice has been taken of endogenous growth theories in local development circles, and it is often thought that promoting certain growth factors locally will lead to local growth. Our analysis shows that even if this sometimes appears to be the case, further probing reveals that structural dimensions can strongly influence the nature of the relationship between local effects and growth.

This is probably because endogenous growth theories were never meant to be applied to the development of small localities. Indeed, Lucas's (1988) model was developed based upon national economies, and was extended to include major metropolitan areas. Economies of this

²⁶ It is difficult to classify industrial structure as an endogenous or as an exogenous factor. To some extent it can be considered endogenous: clearly it characterises a region. However, it can also be considered exogenous to the extent that its impact on the local economy is usually a result of demand that emanates from outside the locality. From a policy perspective industrial structures are difficult to modify since they result from structural trends and location preferences (Shearmur and Polèse, 2005 b)

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

size are large enough to internalise most, if not all, of the posited endogenous dynamics. However, the smaller the locality, the less likely it is to be able to generate and sustain the endogenous dynamics that are at the centre of endogenous growth theory (Shearmur and Bonnet, 2010). What these results are showing is that for small economic communities (which make up the vast majority of our observations), local growth factors are not connected in any systematic way with local growth outcomes. Their influence on growth is dependent on the nature of the local economy and upon its connection to wider markets.

Industrial structure: in the early 1990s and early 2000s, industrial structure explains a large proportion of the variance in employment growth that is not explained by regions, synthetic regions or local factors. It increases the variance explained by 0.14 in the early 1990s, and by over 0.12 in the early 2000s, making it the key dimensions (along with synthetic regions) for understanding differences in employment growth in this most recent period. In the late 1990s the effect remains large (it adds 0.045 to the variance explained), but other explanatory factors are stronger during this period.

We will not dwell in any great detail over which types of structure are connected with (or not connected with) employment growth. The important point is that a key factor in understanding why a particular locality grows or declines is, increasingly, the type of industry there. This may appear obvious, but has important policy implications. The growth or decline of particular industries is usually driven by global markets, technological factors and exchange rates. None of these can be controlled or influenced by local authorities, and most are beyond the power of influence of national governments (though these governments can, of course, influence the rules that govern the way in which these factors impact industries within the country). Furthermore, each locality has an industrial structure that only changes slowly over time (Shearmur and Polèse, 2005b) – it is difficult (though not impossible) to overcome an industrial heritage, but this can take generations. It is not a matter of simply switching industrial structures over a three year period.

In sum, what do these regression analyses tell us?

First localities in Ontario are now, all else being equal, the slowest growing localities in Canada (the situation is probably even more marked now, since the results in model C4 only extend to 2006). This is a medium term trend, since, after controlling for industrial structure and accessibility, Ontario's slower growth began to emerge in the 1990s.

Second, differences *within* provinces (i.e. synthetic regions) are becoming increasingly important for understanding local development, even as differences between provinces are losing their dominant role.

Third, notwithstanding straightforward correlations and initial regression results to the contrary, local factors seem to have little systematic connection with local growth. Their connection with

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

local growth is determined by the nature of the local economy and by its accessibility to outside markets. Localities, especially smaller ones, are a little like boats on the sea: although their captain, crew and rigging can make a difference, weather conditions will often determine the success or failure of their journey. The larger the ship, the more it is able to slice through the weather and determine its own course.

Perhaps the key result of this analysis is the increasing importance of industrial structure in determining local employment growth, which seems to have been particularly important in the early 2000s. Given the crisis in the financial and automobile sectors since 2008 – which have hit southern Ontario particularly hard – and given the continued role that oil and gas extraction, and mining, play in many parts of Canada, it is unlikely that the effect of industrial structure on local development outcomes will decline in the foreseeable future.

3.5 Accessibility and Employment Growth, from 1991 to 2006

Given the patterns of local employment growth described in section 3.4, and given the high – if fluctuating – integration of Canada into the North-American and world economies (see figure 1.1), it is legitimate to wonder to what extent having good access to markets increases or decreases a locality's level of employment growth. Indeed, in Canada distances are large, and accessibility plays a strategic, and indeed a political, role.

In this section the framework developed in the previous sections is used to assess whether or not different types of accessibility increase localities' employment growth over and above that already taken into account by the items in the model.

Accessibility is not a one dimensional concept. Accessibility by road is not the same as accessibility by air, and accessibility to ports is not to be confused with accessibility by railway. In this report, accessibility is estimated in four ways:

Road accessibility: The entire North American road network for 2006 (highways and regional roads) has been modelled, and speeds of 100km/h estimated along highways and 60km/h along regional roads. The accessibility of all localities to all other localities (excluding to themselves) is estimated along this network, and a market potential is calculated for locality i by dividing the population of each locality j by the time between j and i , and then summing all these weighted population figures²⁷. Two different potentials are calculated, one that puts more emphasis on local accessibility (the time between i and j is squared), and one that puts more emphasis on more distant locations (the time between i and j entered as is).

²⁷ The potentials are virtually identical if total income or total employment are used. For a more complete discussion of the methodology see Apparicio et al, 2007.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Air accessibility: The entire North American network of air connections for 2006 is modelled. Timetables are not used, but penalties are included in the model for flight connections and for boarding and disembarking from aeroplanes. These penalties tend to be larger for smaller airports reflecting the lower frequency of connections. The time between all pairs of locations in North America is calculated using a combination of road and air accessibility (air connections are modelled as 'superhighways' with restricted entry and exit points), and accessibility of a region to itself is not included in the model.

Clearly, given the use of the road networks in estimating air accessibility, road and air accessibility are correlated to some extent.

Rail accessibility: The entire railway system for North America is used to calculate the time, by rail, between all pairs of localities. Since all localities are not connected by rail, the road network is used to connect to the railway system. There is a penalty attached to being distant from a railway: the road time is included, but it is raised to the power of 1.25 ($t^{5/4}$). Thus 30 minutes of access time to the rail network is equivalent to 70 minutes of rail time, and 120 minutes is equivalent to 400 minutes. This weighting scheme is intended to capture the fact that localities distant from a railway will probably not use it, but also tries to make sure that all regions actually have a rail accessibility potential however small (otherwise this will lead to computational problems). A further restriction on rail accessibility is that, given that it is predominantly used, in North America, to transport freight, no rail connection of less than 120 minutes (excluding the road access time) is considered.

Accessibility to ports: We assume that, once freight is in a port, it has access to global markets irrespective of distance travelled by water. Thus, unlike for the other three accessibility measures, this one simply looks at the distance of each locality to the closest major port (we have retained the 50 largest ports in North America by tonnage²⁸), and to the closest five ports weighted by tonnage²⁹. Accessibility to ports is measured along the road network.

Local population size: Local population is also used as an accessibility measure. This is a measure of local market size. It was not included in the growth models in section 3.4 because it is highly correlated with the other explanatory variables.

²⁸ It has not been possible for us to find good data on the breakdown of tonnage between bulk and container. This is an important limitation to the port accessibility measure.

²⁹ Ports and tonnage are aggregated by locality since our road accessibility matrices are between localities and not between ports. Between 2001 and 2006 our geographic units in Canada have become more precise, leading to the 'disaggregation' of two previously geographically combined ports. Thus, the closest 6 ports weighted by tonnage are used in 2006, but this does not alter the results in any meaningful way.

3.5.1 The principal dimensions of accessibility

Given these five dimensions of accessibility (three of which are measured using distance and distance squared, with port accessibility also measured in two ways – accessibility to the closest port, accessibility to five closest ports weighted by tonnage), all correlated to some extent if only because they rely, in the background, on road accessibility, a factor analysis is performed. Three main dimensions of accessibility emerge for both periods analyzed, and these are summarised in table 3.6.

First, localities differ according to their accessibility to outside markets, whatever the type of accessibility (except to ports). In short, some localities are simply more accessible than others by land.

Second, certain localities are more accessible to major ports.

Finally, some localities are larger (have larger local markets) than others, and this should be distinguished from general accessibility. This is an important point: local size is *not the same thing* as good accessibility to markets. These two dimensions of accessibility are uncorrelated which means that some larger cities are not very accessible to outside markets (Sudbury or Saguenay may be examples of this), and some small localities are very accessible to outside markets (particularly peri-metropolitan areas which are, of course, very well located for access to the nearby metropolitan area).

3.5.2 The secondary dimensions of accessibility

The principal dimensions of accessibility summarise the basic geography of Canada. However, they do not distinguish between transport modes. This is because the differences in accessibility by air, road or train are relatively small when compared to the major differences in accessibility just described.

Since we are also interested in the more subtle differences in accessibility along different transport networks, a further analysis performed. Each of the accessibility potentials for airlines, road and rail is regressed against the three principal dimensions of accessibility. In doing this we take out of these variables all the variability that can be accounted for by the major differences in accessibility, leaving behind, in the regression residuals, the more subtle differences in accessibility attributable to the geography of the different networks.

A second factor analysis is then performed which includes the three principal dimensions, and the three sets of residuals for air accessibility, road accessibility and rail accessibility. By construction³⁰ the three major dimensions of accessibility emerge again as independent

³⁰ They are not correlated with the residuals and are nor correlated amongst themselves.

accessibility factors. But three further, secondary, dimensions of accessibility now emerge (Table 3.6):

- *high air accessibility accompanied by low train accessibility.* This probably corresponds to isolated communities with an airport.

- *high local road accessibility and low train accessibility.* This probably corresponds to localities relatively well located with respect to peripheral cities but distant from major networks of land communication along which rail lines tend to run.

- *high general train accessibility.* This is the only dimension of accessibility which differs between the 2001 and 2006 estimations³¹, since this high train accessibility is accompanied by high general road accessibility in 2001 and by high general air accessibility in 2006.

3.5.3 The connection between accessibility and growth

Returning to table 3.5, the last columns (models A6 – C6) illustrate the connection between accessibility and growth without any controls. The results are surprising. The six accessibility dimensions account for about 0.14 of all variance in employment growth in 1991-1996 and 2001-2006, but account for fully 0.44 of variance in the 1996-2001 period. There is clearly an *a priori* connection between accessibility and growth. However, what we really want to know is whether accessibility provides any incremental explanation of growth over and above the growth model presented in section 3.4, a model which is derived from our theoretical understanding of the geographic growth process.

The inclusion of accessibility measures in the full model (models A5-C5) improves our understanding of the employment growth process across localities in Canada. In 1991-1996 the improvement is marginal (0.011 of extra variance explained, i.e. the increase in adjusted r^2 between model A4 and A5), but it clarifies some of the processes at work. This improvement rises in the late 1990s (+0.033 of variance) and remains high in the early 2000s (+0.025 of variance), and it continues to clarify the processes.

First, its inclusion leads to the disappearance of Atlantic Canada's growth deficit in the 1990s. Thus, during that decade, slower growth in Atlantic Canada localities can be attributed to their lower accessibility. Not so in the early 2000s, when localities in Atlantic Canada grow more slowly even after taking their accessibility into account.

³¹ 2001 estimations are calculated using the 2001 population distribution and the 382 unit subdivision of Canadian territory. 2006 estimations are calculated using the 2006 population distribution and, more importantly, using the 421 unit subdivision of Canadian space which, in particular, includes 51 new urban areas. This increased geographic precision, particularly for urban areas, may explain the slight difference in the nature of the accessibility dimensions between 2001 and 2006.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Second, in the 1990s the inclusion of accessibility variables clarifies the effect of industrial structure. During this period, the impact on local growth of a particular structure varies depending on how accessible the locality with that structure is to markets. By the early 2000s industrial structure is playing a predominant role in understanding the growth in localities, and this role is not greatly modified by controls for accessibility.

Finally, the accessibility variables alter, but do not completely overshadow, the synthetic region effects. In particular they highlight the fast employment growth during the early 2000s in medium sized peripheral cities, and the fact that fast growth in central regions in the late 1990s was primarily attributable to their high market accessibility.

What types of accessibility are associated with employment growth?

In the early 1990s it is access to ports, local road accessibility, access to outside markets and large local markets that are associated with local employment growth. In the late 1990s local road accessibility, access to outside markets and access to ports are connected with employment growth.

In the early 2000s none of the three principal dimensions of accessibility play a role (after controlling for other factors), probably reflecting the resurgence of employment growth in resource industries located in peripheral (and hence not necessarily accessible) regions. Before controls, all three principal dimensions have a positive effect upon growth, so the former result does not mean that accessible regions are not growing faster, only that accessible regions also tend to possess some of the other attributes associated with growth in the base model.

3.5.4 Manufacturing employment

To conclude the results in this chapter we analyze the connection between manufacturing employment growth and accessibility. The entire series of models (identical in structure to those in table 3.5) is presented in table 3.7, but only the coefficients of the accessibility variables in models A5-C5 and A6-B6 will be discussed. In general, accessibility does not add much to the understanding of manufacturing employment growth except in the late 1990s where it accounts for 0.033 of variance over and above the basic growth model. Even if accessibility does not always add much to explanatory power, it does clarify certain relationships.

In the early 1990s accessibility does not add any explanatory power to the manufacturing employment growth model. In the late 1990s there is a strong connection between local road accessibility and manufacturing growth: this does not alter the basic model but adds to its explanatory power. In the early 2000s manufacturing growth is faster in localities with high air accessibility and with good accessibility to ports. The addition of accessibility to the model overcomes the negative Ontario effect: this suggests that the negative effect for Ontario has been driven by its least accessible localities. Indeed, manufacturing in Ontarian localities tends

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

to grow more slowly than in other provinces (model C4), but once we allow for the fact that some localities are more accessible than others, this negative effect disappears (model C5). Thus, the low level of manufacturing growth in Ontarian localities in the early 2000s is somehow connected to their accessibility. The positive effect, Canada-wide, of accessibility on manufacturing growth tells us that manufacturing employment tends to grow faster in more accessible locations, and slower in less accessible areas. Since Ontario's negative coefficient disappears, this tells us that what is true Canada-wide is also true in Ontario.

In contrast to Ontario, the negative coefficient for Atlantic Canada localities is intensified after taking into account the Canada-wide trend. By following the same reasoning as above, this tells us that, unlike most of Canada, it is the more accessible localities that have been driving the negative coefficient in Atlantic Canada. This may be an indication of the crowding-out of manufacturing in certain Atlantic Canadian cities by high-wage jobs connected with oil and resources.

Finally the faster growth of manufacturing in medium and small central cities – a profile that is very prevalent in Quebec - is entirely accounted for by their accessibility profile.

If the effect of accessibility to ports is examined before controls (models A6-C6) it can be seen that this is the only type of accessibility that is systematically connected with manufacturing employment growth across the entire period (though its effect is slightly weaker in 2001-2006 than in the 1990s). Thus, even though port accessibility is confounded with other effects in the model (and therefore does not always contribute to the full model), it is clear that access to ports – despite the fact that our measure does not distinguish container ports from the others – is important to understanding the geography of manufacturing employment growth in Canada.

3.6 Conclusion

Notwithstanding the fact that, all else being equal, well-managed and imaginative communities will do better than poorly managed and unimaginative ones, communities and localities are operating within a series of structures that have a large influence over their employment outcomes. Furthermore, the only dimension in our analysis that corresponds to administrative boundaries (provinces) seems to have a diminishing effect upon local employment outcomes, whereas those dimensions that are either aspatial (such as industrial structure) or which do not correspond to contiguous territories (such as synthetic regions) are gaining in importance.

It is often assumed that local characteristics, particularly those that are identified in endogenous growth theories, may to some extent overcome these structural factors. This no doubt occurs in some cases, but is more likely to occur in large relatively self-contained economies within which processes of specialization, knowledge spill-over and creative destruction can occur. However, most localities in Canada are too small for such endogenous processes to realistically occur. This is illustrated by the fact that local characteristics are not systematically connected with local

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

growth outcomes: their effect on local employment changes from period to period, and in any given period it is dependent on industrial structure. Furthermore, accessibility to outside markets plays an important role in understanding local employment growth outcomes, suggesting that, for the smaller regions that drive our model, it is resources outside the locality that can sometimes make a difference.

Of course, the nature of the locality itself plays a role in employment growth, but mainly through the structural factors mentioned above – region, synthetic region and, increasingly, industrial structure – over which the locality has little control.

This conclusion is not very different from the one reached in our previous research on the subject (Polèse and Shearmur, 2002). What has changed is the empirical reality on the ground: Ontario is no longer the eastern employment powerhouse, peripheral regions are no longer systematically declining, and rural central areas (possibly because of the way we have altered our classification system) are not necessarily growing. But these changes in what can be observed have not, apparently, altered the fact that the economies of small and medium sized localities in Canada are strongly driven by their relations, both geographical and industrial, with the world beyond their borders. Localities are not closed systems, and cannot even be approximated to closed economic systems: they are fundamentally interdependent, and it is with this in mind that regional and local development policies must be imagined.

Chapter 4 – Location and industrial Structure

4.1 Introduction

This chapter explores the locational dynamics of industry, focusing on manufacturing, with also a brief examination of wholesaling and distribution, and how these in turn affect overall growth patterns. Maps are frequently used as visual aids to interpret trends, supplemented by figures, tables, and statistical analysis.

Chapter 3 demonstrated the continuing importance of underlying geo-structural factors in shaping trends, but also that the weight and impact of various factors have changed over time. The relative explanatory power of (initial) industrial structure has grown compared to more traditional factors such as size and location. In this chapter, we shall further explore the role of industrial structure, specifically via possible indirect (and difficult to measure) effects of history and culture and, in turn, their possible impact on local labour markets and local competitiveness. We shall among other things be asking, particularly in light of the recent downturn in the southern Ontario economy, whether new vulnerabilities (and perhaps also new opportunities) are emerging among Canada's regional economies founded on the interplay between inherited industrial structure and location.

Our interpretations of the data are often speculative in nature, more in the line of asking the right questions than finding definite answers. Trends are at work that we do not fully comprehend. Recalling again the findings of chapter 3, interrelationships between factors such as market access, urban size, relative wages, and education are not only in constant flux, but can also vary between different places. We begin by a second look at the role of location and geography, starting with a map of population change in North America.

4.2 Geography, Growth Corridors and Trans-border Dynamics

Maps 4.1 and 4.2 illustrate the geography of population change in North America for the years, respectively, 1990 to 2000 (1991 and 2001 for Canada) and 2000 to 2006. At least two things stand out:

- a) The Canada-US border makes little difference; it would be difficult to identify did we not know it existed. Population trends reflect similar basics on both sides of the border; and
- b) The trends are essentially the same for the two time periods. Three broad swathes of territory in North America seem to be irremediably emptying out: 1) the great dry interior of the continent stretching from south Texas to central Saskatchewan; 2) the cold north-east (basically the Canadian Shield) stretching from Northern Ontario through Northern Quebec to Newfoundland and Labrador; and 3) the Appalachian spine stretching from eastern Kentucky to Upstate New York. Parts of the central Midwest and the Mississippi Valley also continue to lose

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

population. In all of these areas, some places (urban places notably) are growing, but the overall picture is one of systematic decline, driven by forces that are seemingly difficult to reverse. Without necessarily falling into the trap of geographic determinism, Maps 4.1 and 4.2 are evidence of the continuing power of geography. Some locations are simply more advantageous than others.

The (positive) flipside of declining populations in some parts is the continuing tendency of economic activities and populations to coalesce around given areas of growth, a manifestation not only of the power of agglomeration economies (recall chapter 2) but also of trade relationships. The impact of transport infrastructures is easily discernable on both maps. Accessibility, we saw, is an explanatory factor of regional growth in Canada (chapter 3); its impact on local growth, viewed from a continental perspective, is clearly visible on Maps 4.1 and 4.2. At least three major growth corridors stand out centered around U.S. Interstate Highways: 1) an eastern corridor – basically following I-95 and I-85 – stretching from New York to Atlanta; 2) a mid-continent corridor – along I-35 and I-44- stretching from the Mexico-Texas border to Chicago, a continuation of the principal trade route linking Mexico City and Monterrey, Mexico, to U.S. markets; 3) a northern Midwest corridor – via I-94 and I-29 – linking Chicago with Minneapolis-St Paul, but also with Winnipeg.

Seen in this light, it is impossible to totally divorce the evolution of Canada's regions from that of their U.S. neighbours. Who the neighbours are will not only influence growth trends but also industrial structure and trade relationships. Table 4.1 shows the share of merchandise exports in 2007 going to the five most important U.S. states by Canadian region³², as well as the five most important destination states measured in terms of the ratio between each state's export share and its share of U.S. GDP. Thus, some 30% of Ontario's exports to the U.S. go to a single state – Michigan – whose share is some 11 times greater than its GDP would predict. Five U.S. states account for some 60% of Ontario's trade. The comparison with Quebec is revealing. Quebec's first market, New York State, accounts for 12.8% of its exports; the state with which, proportionately, it has the closest links is Vermont, which imports some 27 times more from Quebec than the size of its economy would predict. The Ontario-Quebec comparison illustrates not only the difference in the regional (and industrial) orientation of trade of the two provinces, but also the importance of cross-border links in shaping that trade. The integration of the North American auto industry goes back to the 1965 Auto Pact. Need we note that Windsor is but a stone's throw – across the River – from Detroit?

³² Note, however, that the given destination isn't always or even often the point of final consumption. For Nova Scotia the biggest destination is Massachusetts, hardly surprising, but the second is South Carolina, because that is where Michelin has a major distribution centre for tires manufactured in Nova Scotia.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

NAFTA has since accelerated similar relationships along other parts of the border. Southern Quebec is an example. The strong ties with Vermont are no accident. Montreal-based firms such as Bombardier (aerospace and transportation equipment) have opened plants in Vermont and Upstate New York. By the same token, IBM Corporation, based in New York State, has plants in Burlington, Vermont, and in Bromont, Quebec, some fifty miles north, with a constant flow of trucks between the two plants. These are not necessarily isolated cases. Table 4.1 suggests that each region of Canada has a unique cross-border trade relationship, shaped by proximity and the nature of the goods traded. The Maritime Provinces trade first and foremost with New England while Minnesota and Montana are at the top of the list for the two Prairie Provinces, and Washington State for BC³³. For the two oil exporting provinces, Alberta and Newfoundland and Labrador, major oil refining and consuming states are on top, although, proportionally weighted, Alberta's closest links are with Wyoming and Montana.

The regionalized nature of cross-border relationship also sheds a different light on Toronto's role as a business service centre. Although indisputably number one – certainly in finance (recall chapter 2) – Toronto's strength is in part founded on its location at the centre of Canada's largest regional economy and also in its role as corporate intermediary with U.S.-based partner corporations. Toronto's integration into the Midwest U.S. economy, certainly more so than Montreal or Vancouver, probably goes some way in explaining its comparative underperformance in recent years. By the same token, a second look at Maps 4.1 and 4.2 (and also table 4.1.), provides elements of explanation for the relatively good performance in recent years of southern Manitoba (in and around Winnipeg) and parts of the Maritimes. The Maritime Provinces, although not located on a highly visible growth corridor, are linked to a neighbour – New England - which has witnessed a remarkable turn-around in recent years, fuelled by Boston's growing high-tech economy (see, for example, Glaeser 2005). In cases where cross-border cost or regulatory differences make it advantageous to produce certain products (or parts) in nearby Canadian locations, New England-based firms may be tempted to look to the Maritimes.

Similar reasoning can be applied to southern Quebec and to Lower Mainland B.C. (for Seattle-based firms). On Map 4.2, growth in southern British Columbia appears as a geographical extension of growth along the Pacific Coast corridor commencing in Oregon. Note also the apparent impact of the Trans Canada (Highway 1) in the BC interior. On the East Coast, the new dynamism of the New England economy seems to be driving the emergence of a corridor – along I-89 – linking Boston with northern Vermont, but also by the same token with Montreal

³³ The importance of New Hampshire as a destination of Maritime exports is explained by the presence in that state of Irving Oil American headquarters and it seems that that all of the company's exports to the U.S. are allocated to that state.

and surrounding areas, which puts a different perspective on the location advantages and possible evolution of southern Quebec's economy.

The presence of continental growth corridors alters the perception of Winnipeg and surrounding Manitoba as irremediably poor locations (weather notwithstanding, about which little can be done). From a continental perspective, Winnipeg is clearly "peripheral"; but it is located at the northern tail end of an apparently dynamic growth corridor. It is useful to point out that the greater Minneapolis – St. Paul urban region systematically comes out on top among U.S. cities on many measures of economic performance, whether measured in per capita income, education levels, high-tech start-ups or the density of corporate headquarters, the polar opposite of many "Rustbelt" Midwest cities, which continue systematically to underperform (McDonald 2008). The answer lies in part in its industrial structure, not tainted by a history of heavy industry and large plants. Winnipeg is considerably smaller than its southern sister, but the possible growth implications of the Manitoba-Minnesota-Wisconsin connection are a subject worthy of further consideration.

4.3 The Spatial Dynamics of Manufacturing and Wholesaling

Map 4.3 illustrates the location of manufacturing employment in North America³⁴. Here again, the U.S.-Canada border seems to make little difference, with however the notable exception of southeastern Quebec and the Maritimes (to which we shall return). Access to ports, waterways, and other manufacturing clusters are visibly major location factors. Almost no manufacturing takes place in the Great Plains and the Prairies (note again the southern Manitoba exception, which shows up as a geographical extension of manufacturing activity in northern Minnesota). The importance of access to ports, corroborated by the statistical analysis in chapter 3, is in part a reflection of the continuing role of differing costs (per ton-mile or other measures) between transport modes. Technological changes notwithstanding, water remains the most cost efficient transport mode, specifically for long-hauls and bulk, and necessarily so for cross-oceanic merchandise trade (except very high value-added, relatively light-weight goods, which can bear the extra costs of transport by air). All other things being equal, a producer dependent on overseas trade will seek to minimize the time and distance goods travel overland (at higher unit costs) and to maximize the distance by water.

Here, most probably, lies the principal explanation of why accessibility continues to matter despite the relative fall in Canadian exports, specifically to U.S. markets (recall figures 1.1 and 1.2). First, the greater the share of exports (or imports) to or from non-U.S. markets, the greater

³⁴ Map 4.3 is based on compatible census definitions and data. The year 2000 (2001 in Canada) is the most recent for which such information is available. 2010 US census data are not yet published. For Canada, it is impossible to know beforehand whether the 2011 census will provide reliable information, given recent government changes to census procedures.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

necessarily the importance of ports. Second, the continuing long-term trend of high fuel prices favours water transport over other modes, specifically over road and air³⁵. In this respect, high fuel prices are a mixed blessing for oil-producing regions lacking easy access to water transport. For Alberta and Saskatchewan, to take the most obvious examples, high oil prices bring in revenue and jobs; but also mean that they remain expensive locations for merchandise trade. Containerization has lessened the need to be located directly alongside a port – now simply a momentary stopover in an otherwise seamless logistics chain - but it has not reduced the cost advantage of locations within a reasonable trucking (or rail) distance of a port, generally within a 100 to 200km range (recall figure 2.8).

The implications of this for Canadian regions are not difficult to identify. Most manufacturing, unless directly tied to resources (and even then), will generally seek out locations within a reasonable distance of a port, preferably a container port. In eastern and central Canada, this naturally favours locations with easy access to Montreal or Halifax (or U.S. Atlantic ports). However, other factors need to be added to the equation. Map 4.3 tells a second story. In the U.S., the highest concentrations of manufacturing employment are no longer found exclusively in the industrial heartland of the Midwest, the so-called Rustbelt (basically, the Pittsburgh-Detroit-Chicago axis) and even less so in the old eastern industrial cores of New York and Philadelphia. Plants have moved south: textiles and clothing into the Carolinas; automobiles and other steel-based industries down the river and highway systems leading to the Gulf of Mexico. Interstate I-66 linking Chicago and Mobile is the classic corridor of delocalisation for auto plants. The reasons for this industrial exodus, beyond those already alluded to in chapter 2, essentially boil down to the desire to escape high labour costs and unionization. Southern States have historically lower labour costs and are traditionally less union-friendly. They also had the added advantage (besides good transportation infrastructure) of a fairly dense network of good-sized cities, able to provide the specialized services modern manufacturing has come to rely on. Note the concentrations of manufacturing around Atlanta, Birmingham, and Nashville.

Let us return to Map 4.3, focusing on Canada. One of the most striking results is the visible concentration of manufacturing employment in southeastern Quebec in a triangular region lodged between the St Lawrence River and the U.S. border, running approximately along a West-East line from Montréal to the smaller city of Rivière-du-Loup. This relative concentration of manufacturing is striking not only because it runs counter to the traditional image of southwestern Ontario as the industrial heartland of Canada, but also because it sets Quebec apart within North America with what appears to be the densest cluster of manufacturing employment outside the U.S. Rustbelt and its southern extensions. The presence of a Quebec-based manufacturing cluster is further confirmed by Maps 4.4 and 4.5, which show employment

³⁵ The impact on oil and gas exports is, however, minimal to the extent that these exports travel by pipeline.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

concentrations (again, using location quotients) within Canada for 1991 and 2006. The Quebec cluster has been steadily gaining ground on southwestern Ontario, although the latter remains more important in absolute employment terms (Figure 4.1). In 1987, the first year for the current Labour Force Survey Data, manufacturing employment in three southeastern Quebec Economic Regions (definitions in Appendix 4.1) was approximately a quarter that for three southwestern Ontario Economic Regions, but rose to over half some twenty years later.

Figure 4.1 suggests that this geographical shift in manufacturing employment is not cyclical, but rooted in deep-seated geo-structural and perhaps cultural factors (the curve rises progressively over the whole period). We shall consider what those factors are later in this chapter. But first let us consider other regional shifts. On Map 4.3, shadings are also discernibly different along the Maine / New Brunswick border, with concentrations systematically higher on the Canadian side, although rarely as high as in southeastern Quebec. A similar process seems to be at play, favouring places with superior access to U.S. markets. Maps 4.4 and 4.5 also confirm the presence of manufacturing concentrations in the Maritimes, but again not as dense as in southeastern Quebec. Note again the small “cluster” in southern Manitoba, which appears to be consolidating.

Figure 4.2 illustrates the relative evolution of manufacturing employment in southwestern Ontario, southeastern Quebec, southern Manitoba, and the Maritime Corridor between Halifax and Edmundston (basically following the Trans-Canada highway linking Halifax with Quebec³⁶) often in fairly small and “rural” places. In all cases, with the notable exception of southern Manitoba (outside Winnipeg), the effects of the post 2003 decline in manufacturing are visible as is the impact of the 2007-2009 recession. However, southwestern Ontario exhibits by far the poorest performance. Figure 4.2 shows results for the entire Maritime Corridor and for the New-Brunswick-PEI section only, the latter exhibiting stronger growth, suggesting again the advantages of accessibility to U.S. markets. The poorer showing of the Nova Scotia section may also in part be explained by cyclical swings in the North Shore region, which includes New Glasgow, with a history of heavy industry. The good showing of southern Manitoba (outside Winnipeg), suggests both a metropolitan expulsion (and proximity) effect, discussed in chapter 2, and again the advantages of locations on or near transport corridors.

Figures 4.3 (a) and (b) consider the same regions (or parts) looking at the evolution over time of relative concentrations of manufacturing employment as measured by location quotients (as on the maps). Two other “nascent” clusters, barely visible on the maps, have been added (Lower Mainland BC and the Alberta North-South Corridor), as well as the two Saskatchewan CMAs. The results confirm the continuing strength of the Ontario and Quebec clusters (no others come close) as well the shift towards the latter. The Maritime Cluster now appears far less impressive,

³⁶ Region definitions in Appendix 4.1

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

although its location quotient is gradually nudging up over time. More surprising is the comparatively lacklustre performance of Lower Mainland BC beyond Vancouver (data available only since 1995), all the more surprising when added to the equally lacklustre performance of Vancouver. Neither a metropolitan expulsion effect nor a transport corridor effect appears to be at work, despite the region's a priori advantages with both a major port and major metropolis. Vancouver's weakness (including that of its surrounding area) as a manufacturing centre (recall also Table 2.4) remains somewhat of a mystery, especially when set against the apparent success of Winnipeg and surrounding area in attracting manufacturing. Winnipeg and Southern Manitoba come closest to emulating central Canada, although we are talking about much smaller figures.

Neither Edmonton nor Calgary show an upwards trend (Figure 4.3b), and the trend is not systematic; the top value – location quotient - for the former was in 1999 and in 2001 for the latter. The sharp fluctuations suggest a manufacturing sector with frequent closures and openings, surprising for cities of this size, but is on the other hand indicative of boom and bust economies based more on one-shot projects than steady production streams.. The non-metropolitan parts of the Alberta Corridor have gradually improved their position (Figure 4.3a), but with still comparatively low location quotients. Both Saskatoon and Regina are attracting growing manufacturing shares, notably since 2002, although again with low location quotients, evidence nonetheless that even a priori poorly located places can attract specific manufacturing activities. In both cities, the highest location quotients were for manufacturing directly related to agriculture or the region's resource base³⁷.

Observed trends do not necessarily lend themselves to easy explanations. Thus, rising fuel costs may well produce a (manufacturing) dispersal effect for industries less amenable to scale economies and primarily aimed at regional markets. Many subsectors within the food and beverage industry fall in the category.

Maps 4.6 and 4.7 show relative concentrations of employment in wholesaling and distribution in 1991 and 2006, an industry traditionally sensitive to location, specifically, to market accessibility, but also highly sensitive to scale economies. The picture for 1991 confirms the importance of "centrality"; that is, the tendency to seek out a location as close as possible to the geographic centre (or transport hub centre) of the market to be served. Much like manufacturing, due to their space requirements (large warehouses, areas for trucks, etc.), marketing and wholesaling activities, although naturally drawn to large urban centres, will not necessarily locate directly in a large city, but rather in smaller places nearby with lower land costs, and with good road (and rail) connections. Thus, the visible concentrations around Toronto and Montreal. Three regional centres also stand out: Vancouver, Saskatoon, and Moncton, the latter two favoured by the

³⁷ Industry definitions are given in Appendix 4.2

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

centrality of their location, respectively in the centre of the Prairies and the Maritimes. Other concentrations are found around Calgary, Winnipeg, and Halifax.

The picture in 2006 is not all that different, with however an apparent strengthening of the greater Toronto/southern Ontario region compared to others, suggesting a growing centralization of distribution activity in Canada, the combined outcome most probably of technological change (bar codes, containerization, etc.) and organizational changes (Super stores) allowing for ever greater economies of scale. Map 4.7 also confirms the continuing presence of regional distribution centres, plus the emergence, apparently, of distribution points along the U.S. border (note southern Alberta) and centres to service northern resource economies. Rouyn-Noranda and Val-d'Or in the Abitibi region of Quebec are examples of entry and distribution points for exploration, mining and hydro power activities further north.

4.4 The Spatial Dynamics of High Tech Manufacturing

We would normally expect high-tech manufacturing (definition in Appendix 4.2) and knowledge-rich services to co-locate, with manufacturing often locating in small and mid-sized places close to large urban centres (recall figures 2.6 and 2.10). Knowledge-rich services, as was documented in chapter 2, are sensitive to city size, concentrated in the largest urban centres. Maps 4.8 and 4.9, which illustrate relative concentrations of employment in professional, scientific and technical services in 1991 and in 2006, simply confirm visually what we already know. The five largest CMAs consistently exhibit the highest location quotients (with Montreal the weakest: recall also Figure 2.22 and Table 2.3). Note, however, the emergence of Quebec City as a knowledge-rich service centre, which now joins the other three large urban centres on the Central Canadian Corridor. Note also the apparently footloose nature of knowledge-rich services in non-metropolitan resource areas (i.e. northern Alberta), with high quotients in one year, but not the other, indicative of service firms (consultants, engineers) that move in times of boom and out in times of bust.

Maps 4.10, 4.11 and 4.12 show, respectively, relative concentrations of high-tech (HT) manufacturing employment in 1991 and in 2006 for all of Canada, and in more detail for eastern Canada in 2006. The map for 1991 confirms visually the predominance of the area in and around the Toronto-Ottawa-Montreal triangle as the HT core of Canada, (recall Table 2.1). Smaller concentrations are also visible in the Maritimes and in and around Winnipeg. The map for 2006 shows little change; but with an apparent consolidation of the Maritime "cluster" and the emergence of new concentrations in and around the Quebec City area and a parallel expansion east of Montreal along the Quebec / U.S. border. In sum, the eastward shift of manufacturing in central/eastern Canada, noted earlier, is not limited to standardized or resource-based manufacturing, but also includes HT activities.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

In the West, the Winnipeg cluster continues to register location quotients above unity (recall: 1.00 = Canada average). This stands in sharp contrast to Edmonton and Calgary, which not only exhibit HT concentrations below the Canadian average in 2006 but have also seemingly failed to generate concentrations in nearby small and mid-sized places, the only urban centres (together with Vancouver) with populations over 500,000 which, apparently, have not spawned what we may call an HT manufacturing shadow. We may interpret this as further evidence that their respective strengths in knowledge-rich services is largely linked, notably in Calgary, to their role as service centres for the oil and mining sectors. Vancouver again appears surprisingly weak, although with quotients higher than for the two Alberta urban centres³⁸.

Figure 4.4 lists the twenty spatial units³⁹ with the highest employment figures for HT manufacturing in 2006, also showing HT as share of total manufacturing employment. As expected, larger cities have larger HT employment totals, with Montreal and Toronto towering above the rest. But, HT shares do not necessarily vary with size. Smaller places (again, often those close to large ones) also exhibit high HT shares. Examples are Granby in southeastern Quebec, "rural" townships near Ottawa, and Kitchener-Waterloo. In western Canada, Calgary and Winnipeg both register about the same number of HT jobs, but shares differ with HT employment relatively less important in Calgary. Edmonton's share is among the lowest on Figure 4.4. Both Edmonton and Calgary are fairly large urban areas, each with over one million inhabitants. Urban size and a strong modern service sector do not, in sum, ensure the emergence of a parallel strong HT sector; that is, not if other factors act as countervailing forces, another reason why it is difficult to model straightforward statistical relationships (recall chapter 3). Vancouver's relatively middling performance for HT manufacturing raises the same issue.

Figure 4.5 shows the evolution over twenty-five years of HT employment as a percentage of total manufacturing for the three large western CMAs. In all three cases, HT shares (as a share of manufacturing employment) have progressed little since 1991, falling in Calgary after 2001. In Vancouver, the HT share is slowly nudging up, but remains low, as noted above, by the standards of large metropolitan area. In all three metropolitan areas, countervailing forces are, it would appear, at work hampering the "normal" evolution of a HT manufacturing sector, though not necessarily the same in each.

³⁸ The isolated concentrations in more remote areas should not be taken too seriously. They refer to very small numbers, but which appear big because the local economy is small. Thus, the apparently high quotient in northern Alberta refers to some 10 jobs in the medical equipment class. Such are the pitfalls of percentages calculated for small totals.

³⁹ The same units (n= 421) as those used in chapter 3 in regressions for 2001-2006.

4.5 Labour Costs, Location, and Industrial Structure

In this section, we continue our exploration of why manufacturing in general and HT manufacturing in particular flourishes in some places and not in others, focusing on the interplay between industrial structure and the dynamics of local labour markets.

A Brief Parenthesis on the Intrusive Rentier Syndrome

Polèse and Shearmur (2002) introduced the Intrusive Rentier Syndrome concept to help explain why local resource-based economies, in particular those in peripheral regions, find it difficult to diversify into other sectors. The idea is fairly straightforward, a regional adaptation of what economists call the Dutch Disease. It derives from the time when the Dutch Guilder (this was before the Euro) was driven up following the discovery of natural gas in the late 1950s, which undermined the international competitiveness of Dutch manufacturing exports. Canada, it can be argued, is currently in the grips of the Dutch Disease with a dollar whose value is determined not so much by the competitiveness of its firms as by the price of oil, driving up its value beyond what objective productivity figures would warrant. The fall in Canadian merchandise exports after 2000 (recall chapter 1) was undoubtedly caused in part by upswings in the Canadian dollar, just as the growth in exports during the late 1990s was in part fuelled by its low value.

Our interest here is the regional version of the Dutch Disease. The term “rentier” refers to firms, generally large and highly capitalized, that are able to earn a premium (a “rent” in economic parlance) due to a particularly rich local resource, be it trees, hydro power, oil or something else. In Eastern Canada, large paper mills, aluminum plants, and smelters are typical examples. They are “intrusive” (no insult intended; this is economic shorthand) because they: a) drive up local wages; b) undermine the competitiveness of other sectors; c) create a mindset which is not necessarily conducive to business start-ups and innovation. Such “local” factors, as noted in chapter 3, are almost impossible to measure and, as such, difficult to model. Much of the evidence is admittedly impressionistic. However, high-cost resource-based economies have, as a rule, found it difficult to diversify into other sectors. As was pointed out in chapter 3, high wages can have two opposing effects, again making it difficult to model a simple statistical relationship. On the one hand, high wages generate local demand and attract talent and human capital; on the other, they can act as obstacles to diversification and growth; that is, if the wages paid are above what “normal” market conditions would warrant.

The idea we shall explore here is that the Intrusive Rentier Syndrome is not necessarily limited to peripheral resource-based economies, but that larger urban economies and regional economies not dependent on resources are also potentially vulnerable. The vulnerability of Alberta communities, including its two largest urban centres and resource-driven Canadian regional economies is, by this argument, fairly self-evident, requiring little further comment. More to the point is the possibility that variants of the Intrusive Rentier Syndrome may be taking

hold in other parts of Canada, specifically in southwestern Ontario, the traditional heart of the automobile industry. Evidence from other industrialized nations indicates that the syndrome can take hold in well-established industrial regions. In recent years, the most stubbornly problematic regional economies in western Europe and in the U.S. are those with histories of mining, heavy industry, and large plants, including the automobile industry. The exodus of manufacturing from the U.S. Rustbelt was noted earlier. In Europe, examples are French Lorraine, the German Ruhr, the English Midlands, and Belgian Wallonia, all of which share histories of large plants and (formally) high wages, but also of continuing high unemployment rates and out-migration. One of history's great industrial cities, Manchester, England (the birthplace of the Industrial Revolution), has consistently underperformed since the Second World War. The obstacles to growth go well beyond wages and are arguably in part sociological, subjects of continuing study and debate for academics and practitioners alike.

Local labour market distortions are difficult to measure, and in any case fall beyond the largely exploratory mandate of this study. Below, we examine some simple indicators.

4.6 Labour Cost and Local Labour Markets: Exploratory Analyses

Figure 4.6 shows the relationship between city size, location, and local wage rates. As expected, wages are a positive function of size. Wages are, as a rule, higher in larger cities, a reflection of the positive impact (on productivity) of agglomeration economies. Also, as expected, wages are generally higher in "central" cities, closer to large CMAs, than in more distant cities of a similar size. However, figure 4.6 also tells us that the relationship is not perfect, especially for smaller places. For the 25,000 to 50,000 population class, for example, earned incomes per worker are higher in peripheral than in central places. In other words, factors other than size and location also influence local wages.

A regression analysis of the relationship between wages and place size for all observations (big and small) across Canada (2006 data) yielded a significant positive relationship (0.001 confidence level), but with a fairly low R^2 (0.045). The R^2 improves somewhat (0.062) if the analysis is limited to the 144 Census Metropolitan Areas and Census Agglomerations⁴⁰. Table 4.2 lists those observations (cities) that deviate most from the relationship; that is, those whose wages are the least predicted by size. Among places with the highest negative residuals (wages below what size would predict), we find Thetford Mines, Summerside, Cape Breton (Sydney-Glace Bay), and Miramichi; but also Montreal, Lachute, Cowansville, and Victoriaville in southern Quebec, as well as Portage la Prairie, Manitoba, and Edmundston, NB. The relationship is clearly not straightforward; the presence in this group of two mining towns is a priori counter-intuitive. Many factors are visibly at work, pushing in different directions. However, the absence of

⁴⁰ We also found that the positive relationship between wages and place size is stronger for central ($R^2 = 0.094$) than for peripheral observations ($R^2 = 0.053$). All results are statistically significant.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

southern Ontario cities in the left-hand column of table 4.2 – with the notable exception of Hawkesbury (located on the Quebec border and over 90% Francophone) – suggest that the interplay between location, size, and wages can be “distorted” by local factors, among which are industrial structure and language.

The right-hand column of table 4.2 shows cities on the other extreme of the scale: those whose wages are “too high” given their size. Unsurprisingly, Wood Buffalo (Fort McMurray), Calgary, Kitimat (B.C.), and Estevan (SK) are in this group, as they represent “rentier” cities driven by resources. Note also the presence of Edmonton and five other Alberta cities. But southern Ontario cities are also strongly represented in this group, although not generally among the top: Oshawa, Guelph, Windsor, Hamilton, Kitchener-Waterloo, and Sarnia. Equally noteworthy is the absence of southern Quebec or Maritime cities. To explore the southern Ontario-southern Quebec dichotomy further, thirty-six cities were analyzed separately, based on the same regression model, which yielded a stronger relationship ($R^2 = 0.32$; confidence level: 0.003). The deviations from this regression are shown on figure 4.7. With the notable exception of Hawkesbury (again) and St Catharines-Niagara, all places with above average wages (given their size) are in Ontario, and all those on the other extreme are in Quebec.

On Figure 4.8, the relationship is illustrated in another manner, allowing for a direct comparison of similar-sized cities. Looking at the top cities, Hamilton and Quebec City are of similar size, but wages are proportionately lower in the latter. Farther down, Woodstock, ON, and St George-de-Beauce are of similar size (respectively 35,000 and 31,000 inhabitants), but wages are proportionately lower in the latter.

The obvious question is: Why are wages systematically lower in Quebec cities? Many factors influence wages; a satisfactory answer would require a more complete statistical analysis. In efficiently functioning labour markets wage differences are in principle perfect reflections of productivity differentials. Many factors, in turn, influence labour productivity, among which are education and the quality of the capital stock and of public infrastructure. However, wage differences at any given moment in time are also a reflection of the interplay between supply and demand. If supply is “sticky” (does not, in the case at hand, fall when wages are low) then wages may well stabilize at a level which is below what pure productivity differentials would warrant. Francophones are, as a rule, less geographically mobile than Anglophones, producing “stickier” labour markets. It may well be that small and mid-sized towns in southern Quebec enjoy a “productivity premium” for certain types of manufacturing; that is, labour costs are lower for comparable productivity levels, lower specifically than in Ontario and in neighbouring U.S. states.

Let us return to the Intrusive Rentier. Not only in several cases do southern Ontario firms face a more mobile labour supply, more prone to move out, but also a local industrial structure dominated by large, highly unionized, plants, producing an environment of high wage

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

expectations. Hamilton and Woodstock are cases in point, with historical concentrations, respectively, in steel and in the auto industry. The industrial specialization may have disappeared, but the legacy can linger on. It is difficult to precisely factor in all the elements that explain inter-city (or inter-regional) wage differences. It is as difficult to rigorously prove that wages in some Ontario labour markets are above what pure productivity indicators would allow as it is to prove that those in certain Quebec markets are below. However, the data suggests that the possibility cannot be excluded.

If wages or wage expectations are above what productivity and labour demand conditions warrant, such a “distortion” in local labour markets should show up in labour force behaviour. A set of regressions was carried for the relationship between employment rates⁴¹ and wages in 2006, producing an R^2 of 0.55 for the 144 CMAs and CAs. In other words, employment rates are a positive function of wages, which is consistent with what one would expect. Higher wages areas should, logically, attract more working-age populations and also motivate local working-age populations to enter the labour force. However, the relationship breaks down (is no longer significant) once all observations are considered, big and small, central and peripheral. This can be largely attributed to peripheral observations for which the adjusted R^2 is mildly negative, but not statistically significant⁴². In other words, once we enter the world of small and mid-sized peripheral communities, labour market behaviour does not necessarily conform to what economic theory would predict. In the extreme (hypothetical) case of a truly “distorted” local high wage economy - based say on one huge capital-intensive smelter and little else – the local economy might register both high wages and net out-migration, and apparent contradiction; but not so once one considers the mechanics of the Intrusive Rentier Syndrome.

Leaving such extreme cases behind, let us look at the CMAs and CAs that deviate from the model (Table 4.3). Let us first consider those with high negative residuals; that is, where labour force participation is below expectations. The presence of Parksville, BC, and Elliott Lake, ON, is not surprising; these are typical “residential economies” (see chapter 5) with significant proportions of retirees. More to the point is the presence of Kitimat and Wood Buffalo (which we met earlier), Powell River, BC, Dolbeau-Mistassini, QC, Grand Falls-Windsor, NL, and La Tuque, QC, single-industry resource communities, the latter four with large paper mills (that is, at the time of the 2006 census; the Grand Falls and Dolbeau-Mistassini paper mills have since closed and down-sized in Powell River). In these communities, high wages (for those who work) do not necessarily translate, it would appear, into job opportunities for the labour force at large.

⁴¹ Employment rate = (total employment / population aged 15 and over), generally considered a good measure of labour market conditions as it includes (in the denominator) populations that have withdrawn from the labour force.

⁴² For all central observations, the relationship is mildly positive ($R^2 = 0.05$) and close to being statistically non-significant (confidence level: 0.011).

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

In other words, these are examples of the Intrusive Rentier Syndrome founded on resource rents.

We also find several Southern Ontario cities in the left-hand column of table 4.3 (Sarnia; Hamilton; Windsor, Coburg) a signal that a similar process is possibly at work here. Even in Toronto, also in this group, the number of jobs (available or occupied) is below what wages would predict. Noteworthy also is that the other places on the left-hand side of table 4.3 are either mining towns or mid-sized cities with a history of heavy industry⁴³: Shawinigan; Sorel-Tracy; Sudbury; Cape Breton. In some cases, comparatively low wages (recall table 4.2) are not necessarily associated with more jobs, a sign that the Intrusive Rentier is not simply a matter of wages, but also in some cases of legacies left behind by industrial structure, whether sociological, aesthetic or other, long after the plants or mines closed and wages fallen. In cases such as Cape Breton and Sudbury distance (from markets) also comes into play, meaning that even a fall in wages, unless very sharp, may not be sufficient to re-establish competitiveness.

The right-hand column of table 4.3 lists the opposite set places; that is, those where jobs are more plentiful (or more willing to be taken) than wage rates would predict. The picture here is less clear-cut; we find both several Albertan and BC (high wage) communities as well as low-wage communities in southern Quebec, Manitoba, and the Maritimes, an additional sign that wages are not the only consideration. However, one aspect stands out: the absence of Ontario communities. Although this is not necessarily a sufficient indicator of labour market distortions, it does suggest that jobs are, as a rule, proportionally less available (or less willing to be taken) in Ontario communities where wages are proportionally lower.

4.7 Successful Small Manufacturing Centres: A Conjunction of Factors

Let us return to southeastern Quebec and other manufacturing concentrations outside Ontario, focusing on small and mid-sized cities. Several places have visibly succeeded in creating vibrant labour markets founded on manufacturing. For this to happen, putting location aside for the moment, at least two preconditions need to be in place: wage expectations are consistent with the community's "true" competitive standing; and job opportunities are sufficiently diverse – in differing industries - for all sectors of the work force to be able to fit in. As was suggested earlier, the two often go together. Table 4.4 shows the highest location quotients (industrial specialisations) in 2006 for eight small and mid-sized cities, four in southeastern Quebec, three in the Maritimes, and two in southern Manitoba⁴⁴. Two aspects stand out: 1), all are primarily specialized in manufacturing, with the notable exception of Moncton; and 2) the diversified

⁴³ Bay Roberts, NL, is the exception, for which we have no evident explanation.

⁴⁴ The reader may wish to compare this table with table 2.4 in chapter 2, which gives similar information for the five largest CMAs.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

nature of their manufacturing base, especially for Quebec cities, with high location quotients (2.0 or above) in a wide range of industries.

Diversity and small size are not generally thought of as going together, but table 4.4 demonstrates that they are not necessarily incompatible; that is if the right conditions are in place. The star performer is Granby, which we met earlier under the high tech heading, with some 19 manufacturing industries with location quotients above 2.0, followed by Victoriaville (13 industries) and Cowansville (10 industry classes). Note also the presence in the latter two of the "Other Manufacturing" class, which covers firms that defy easy classification, and as such is an indicator of industries in emerging sectors not yet classified. These are fairly small urban areas with populations, respectively, of 68,000, 48,000, and 12,000. The explanation of their apparent success, as well as that of nearby places (recall Maps 4.3 and 4.4), in attracting a broad range of manufacturing establishments cannot be reduced to one or two factors. Interrelations and feedback effects are complex, as we saw in the statistical analysis in chapter 3. Many stars need to be correctly aligned for manufacturing to take-off in smaller places.

Each case is, by definition, unique. The small and mid-sized cities of southeastern Quebec are an instructive example of a number of factors coming together, facilitating the development of diversified manufacturing. The small and mid-sized cities of southeastern Quebec are, we suggest, favoured on various counts:

Labour costs I: Wages are, as noted earlier, comparatively lower for similarly-sized cities, an outcome in part of the reduced geographic mobility of Francophone workers;

Labour costs II: A more stable (less mobile) labour force means a lower employee turn-over and, in turn, lower recruitment and training costs;

Location I: Proximity to a major urban centre, Montreal in this case (rarely more than two hours away) but also Quebec City, providing not only access to customers and suppliers, but also to a broad range of knowledge-intensive business services on which modern manufacturing, especially HT manufacturing, increasingly relies. Recall the discussion in chapter 2 of the complementary relationship between large urban (service) centres and nearby manufacturing centres;

Location II: Proximity to a major container port. As noted earlier, the combined effect of rising fuel prices and of increasing intercontinental trade should increase the weight of this factor.

Location III: Comparatively easy road and rail access to U.S. trading partners and markets. The southern Quebec border is criss-crossed by numerous road and rail links. By comparison, southern Ontario has only a limited number of cross-over points to the U.S, all involving either a tunnel or a bridge;

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Location IV: Fairly dynamic U.S. neighbours, especially on the New England side. As noted earlier, evidence exists of an emerging cross-border economy and a budding Montreal-Boston growth corridor.

Industrial Structure: a historical legacy of low wage industries, founded (in the past) on textiles, clothing, and leather (shoes). In this respect, southern Quebec – basically the old historical region of the Eastern Townships first settled by Loyalist and then by Francophones – is an example of a successful industrial reconversion, not unlike that of its New England neighbour to the south.

Several of the factors named above, by analogy, also favour locations in the Maritimes, southern Manitoba, and Ontario (notably, locations within easy reach of Ottawa and Toronto). The two Manitoba communities on table 4.4 are both within easy reach of Winnipeg. However, the apparent success of southern Manitoba in attracting manufacturing is less easy to explain than that of southeastern Quebec. By the same token, the apparent weakness of the Lower BC Mainland, favoured on several counts, remains somewhat of a mystery.

Southwestern Ontario – notably what we have called Peninsular Ontario – is challenged, we have suggested, on several counts, a signal, perhaps, of a difficult period of industrial reconversion ahead. However, the handicaps of southern Ontario in general, Toronto included, should not be overstated. Southern Ontario remains home by far to the densest concentration of urban centres and human capital in the nation (recall chapter 2). Greater Toronto is the undisputed business service and financial centre of Canada, its preeminent air transport hub and distribution centre. Knowledge-intensive services are increasingly the drivers of modern regional economies. This chapter has focused on manufacturing. The question to which we have no answer is whether southern Ontario's modern service economy can continue to grow in the face of a shifting manufacturing base.

Returning to table 4.4, Moncton stands out as an example of a mid-sized urban economy founded on services rather than manufacturing. The table confirms Moncton's role as a regional hub and distribution centre, exhibiting high location quotients in rail, air, and courier services; but also in professional and scientific services and in broadcasting and insurance, the latter two in part a reflection of its role as the cultural and (mini) corporate centre for the Acadian community. Moncton is also an example (not unlike the Eastern Townships) of a local economy that has managed a successful reconversion, in this case following the collapse – beginning in the 1960s – of the rail rolling stock maintenance industry. Like southeastern Quebec, its success is in part founded on a unique combination of location and local dynamics. Table 4.3 suggests that Moncton's workforce has "successfully" adjusted to changing wage and work conditions⁴⁵,

⁴⁵ Moncton is today (2006) a comparatively low wage economy. Although not identified on table 4.2, Moncton falls below the regression line with a standardized residual of -0.447.

although this remains an admittedly very impressionistic reading of the evidence. Another question to which we have no answer is whether the experience of Moncton and perhaps also of the Eastern Townships contains useful lessons for Peninsular Ontario.

The relationship between manufacturing and the overall performance of regional economies is not the same everywhere, a marginal factor, necessarily, in regional economies founded on resource exports. Figure 4.9 shows the evolution over time of unemployment rates (relative to the Canadian average) in southwestern Ontario, southeastern Quebec, and the Maritime Corridor. The comparison between the three regions is revealing. Since 1998, the unemployment rate in southwestern Ontario has nudged steadily upward, overtaking southeastern Quebec in 2007. The link with the relative evolution of manufacturing employment is not difficult to make, although difficult to prove. Equally revealing is the evolution of the unemployment rate in the Maritime Corridor, which we saw witnessed a relative inward shift in manufacturing employment analogous to that of southeastern Quebec (but with considerably lower absolute numbers⁴⁶). The general trend, although with numerous fluctuations, is in the direction of a declining unemployment rate, which is good news. However, the unemployment rate stays stubbornly above the Canadian average, a sign that several of the necessary conditions for attracting (or nurturing) a diversified manufacturing base are missing.

4.8 On Volatility and the Difficulties of Analyzing Change

We end this chapter with three maps (Maps 4.13, 4.14, and 4.15) to bring home the disparate and often volatile nature of Canada's regional economies, but also as a warning of the pitfalls of conclusions drawn from maps and from small populations, specifically when examining change.

The three maps illustrate employment change (expressed in percentages) for three successive periods since 2001. The information is drawn from the Statistics Canada Labour Force Survey (LFS), the principal - indeed, only - source for measuring regional employment change outside census years. The geography has been adapted, allowing for a greater number of regions, notably in Ontario (with 10 new regions), raising the total number of observations from the 69 original Statistics Canada defined Economic Regions to 83 regions, excluding the Yukon and Territories. In most cases, the method consisted of taking out CMAs, wholly included in an Economic Region, and treating them separately. Thus, the "old" Northeast Ontario Economic Region becomes two regions: Greater Sudbury and the remaining northeast. By the same token, the old Lower Mainland-Southwest Economic Region in BC becomes three, once the two CMAs of Vancouver and Abbotsford are factored out and treated as separate observations. To reduce problems caused by small sample size (see next paragraph), new regions were only added if total employment in exceeded 40,000 in 1995, with only one unavoidable exception (the

⁴⁶ In both regions, the peak years for manufacturing employment were 2003-2004, with a total of about 120,000 in southeastern Quebec and 60,000 in the Maritime Corridor.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Outaouais region in Quebec, outside Gatineau). The principal changes are in Ontario, Quebec, and B.C. No boundary changes were made in Atlantic Canada, Alberta, and Manitoba.

The maps illustrate percentage changes in total employment rather than in manufacturing employment because low employment figures in sparsely populated regions (recall the general absence of manufacturing in the Prairies) can translate into wild fluctuations that are essentially meaningless, a problem compounded by the survey nature of the data, whose validity depends on sample size. Even for total employment figures, fluctuations can be overstated due to small sample size. This is why, when using LFS data elsewhere in this document, we have generally grouped spatial units when employing graphics, except for CMAs where population size is sufficient to allow for stand-alone presentations of data. Maps further compound the problem because of the visual effect projected by large, sparsely settled, areas. Thus, looking back to Map 4.1, impressive population growth appears to have occurred in the American West, most notably in Nevada and surrounding states. True, populations have grown rapidly, but in general starting from very small numbers. Counties and Census Divisions are, as a rule, bigger in the West, giving the impression of large swathes of territory with rapid population growth, when in truth population growth is concentrated in a limited number of places. With these caveats in mind, let us now turn to our three maps of employment change since 2001 (Maps 4.13, 4.14, and 4.15).

The first visual impact is of great variability between the three maps. To the naked eye at least, it is difficult to discern consistent patterns over the three time periods. The overall impression is high volatility over time and almost random growth patterns over space. This impression is not totally wrong. Table 4.5 gives the correlation results between the three periods, as well as with two preceding periods going back to 1995, the earliest year for which full data is available⁴⁷. Correlation coefficients between growth rates are very low, especially since 2004 when compared with preceding periods (bottom row), suggesting increasingly chaotic, unpredictable, patterns of growth, consistent with our findings in chapter 3 (recall that the explanatory power of the model falls for 2001-2006). Equally revealing are the highest coefficients (though still low); that is, between 1995-1998 and, respectively, 2001-2004 (coefficient = 0.307), and 2004-2007 (0.363); in other words, between periods of relatively high growth, which again mirrors chapter 3; the geo-economic model performs best during periods of growth. Recall also the relation between urban concentration and growth (Figure 2.1). In sum, unanticipated patterns (or reversals) are more likely to emerge during recessions or periods of slow growth, not entirely surprising since recessions are generally the outcome of unforeseen outside shocks.

⁴⁷ For BC, regionalized LFS data are only available after 1995. Considering the large number of maps already in this chapter, we have chosen not to include maps for periods prior to 2001. They are available upon request.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

The observed volatility is largely a consequence of the short time periods (three years or less in this case). The shorter the period, the less general explanations apply and the less predictable growth is. The distinction between geo-structural factors (the subject of chapter 2 and 3) and purely cyclical factors is not always easy to make. Size, as we have repeatedly noted, also matters. Small places are by definition more volatile than big ones and small places are, again by definition, more numerous than big ones (but all observations carry equal weight in a correlation or regression analysis). To test for the effects of size, standard deviations of growth rates (over the five periods) were calculated for each of the 83 spatial units, used as indicators of volatility. Taking these as the dependant variable, these were then regressed against total employment, a measure of size. No statistically significant relationship was found. Baffling at first, the results are less so once we look at the places with the highest standard deviations, in principle the most volatile (Table 4.6). At the top of the list is South Coast, NL, the smallest place in our set. Other examples of largely rural sparsely settled regions are the Lac-St-Jean Region, QC, Northwest Ontario, and Central Newfoundland. But, the list also includes Calgary, Windsor, Barrie (Region), and the Stratford-Bruce Peninsula of Southern Ontario. The answer to the puzzle is, we suggest, industrial structure, whether resource specialization (Calgary) or specialization in threatened industries (Windsor). Both are sources of erratic growth, making the regional geography of growth in Canada increasingly idiosyncratic.

Behind the apparent disorder a number of patterns nonetheless stand out on maps 4.13, 4.14, and 4.15. No spatial unit in Canada's central corridor (i.e. Toronto – Ottawa – Montreal- Quebec City) ever falls in the worst performer class (bright red), with the minor exception of the rural Outaouais region, northwest of Ottawa-Gatineau. Fluctuations in relative growth rates do occur, but no major cluster of high negative growth emerges. This is consistent with map 4.2 (population growth 2001-2006), presented at the outset of this chapter, revealing that Canada's central corridor performed fairly well viewed from a continental perspective. However, west of Toronto the number of bright red spots expands steadily from map to map, coming closer and closer together. In the most recent map (2007-2009), Toronto finds itself completely surrounded by spatial units with either weakly growing or declining employment levels.

Outside Canada's central corridor (and outside large CMAs) fluctuations and red patches are more common. Northern Ontario and most of northern Quebec continue as a whole to underperform. Northeast New Brunswick and Cape Breton are bright red in two out of the three periods. PEI stands out among "peripheral" locations for the lack of fluctuation (always in the middle category). The majority of western spatial units – again outside CMAs – exhibit marked fluctuations in growth rates, some moving back and forth between bright red (worst) and bright green (best). The BC interior projects an image of constantly contrasting fortunes, mirroring its varied geography. Finally, in Newfoundland the contrast on the last map between the Avalon Peninsula (bright green) and the remainder of the Island (mostly bright red) is striking, a reminder that intra-provincial differences are often more marked than between provinces.

4.9 Conclusion

In this chapter, we considered factors underlying the location of manufacturing industries, in particular high-tech and diversified (non-resource based) manufacturing, and the implications for the evolution of Canadian regional economies. We began with a continental perspective, then proceeding to examinations of particular situations. Particular attention was paid to the impact of industrial structure local labour markets.

Our findings are summarized in seven points, each in turn raising new issues and new research questions:

1. There is little evidence that geography is less important today than in the past in shaping the location of manufacturing. Specifically, access to water, waterways, and ports continues to influence location choices. Most places in the vast Canadian interior (i.e. the Prairies, northern Ontario, northern Quebec) continue to exhibit manufacturing concentrations well below the Canadian average. For merchandise trade, notably for long-hauls and trans-oceanic trade, the relative lower cost of water-based transport over other transport modes continues to drive firms towards locations that minimize overland hauls. The combined probable impacts of rising fuel costs, increasing trans-continental trade, and technological change (i.e. containerization) suggest that locations with good access to major port cities will continue to command a premium for most manufacturing. However, this makes the relatively weak manufacturing performance of Vancouver and nearby Lower BC Mainland the more surprising. By the same token, the relatively strong performance of southern Manitoba continues to surprise.

An examination of the geography of manufacturing and of population change in North America reveals the growing importance of growth corridors, generally centred around Interstate Highways (in the U.S) and transport routes in general. Viewed from a continental perspective, several locations in Canada appear less “peripheral” than is generally thought. Winnipeg and surrounding southern Manitoba appear as the northern extension of a growth corridor linking Minneapolis – St. Paul and Chicago. The resurgence of the New England economy appears to be fuelling the emergence of corridors linking it with southern Quebec and, to a lesser extent, with neighbouring Maritime locations.

2. Within Canada, the traditional central Canadian manufacturing corridor (Toronto-Ottawa-Montreal-Quebec City) shows little signs of weakening. However, the internal dynamics of the corridor is undergoing a change, with a shift of the centre of gravity of manufacturing out of southwestern Ontario and into southeastern Quebec. The most visible shift has been out of “Peninsular Ontario” (the area, roughly, between Buffalo and Detroit) and towards small and mid-sized towns east of Montréal and south of

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

- Quebec City. Both shifts suggest causal links between the fortunes of Canadian regional economies and the fortunes of neighbouring U.S. regional economies. .
3. Comparative labour costs are visibly a factor in the location of manufacturing, specifically for mid-tech (non resource based) manufacturing. For similarly sized cities, wages are systematically higher in southern Ontario than in southern Quebec, which may in part underlie the shift of manufacturing towards the latter. Although the evidence is exploratory, "high" wages in Peninsular Ontario cities are possibly undermining local competitiveness. The danger signals of a possible Rustbelt type situation evolving cannot be ignored. The possible indirect implications for the Toronto economy remain an open question.
 4. High-tech manufacturing remains strongly concentrated in the Toronto-Ottawa-Montreal triangle and surrounding areas. Manufacturing in general and high-tech manufacturing particular continue to cluster in and around large urban centres with high concentrations of human capital and knowledge-rich services. A smaller cluster is visible in and around Winnipeg. Quebec City and its surrounding area is emerging as a new player. The most striking exceptions are Calgary and Edmonton, which despite high concentrations of knowledge-rich services have seemingly failed to nurture a parallel strong high-tech manufacturing sector. The two are, we suggest, handicapped by: a) location, far from markets and ports; b) high wages, "artificially" fuelled by high resource rents, the latter condition dubbed the "Intrusive Rentier Syndrome", a regional variant of the Dutch Disease.
 5. The Intrusive Rentier Syndrome remains a major challenge for local economies dependant on resources (at the time in high demand), making them less competitive for (non-resource based) manufacturing than location and labour productivity would "normally" warrant. The challenge is compounded where small size and distance act as added obstacles to industrial diversification. Many locations are simply too costly to attract or nurture manufacturing activities (other than those rare cases where local demand is sufficient to justify a plant). The problem is well-known, all too common among Canada's regional economies, but to which we have yet to discover an effective policy response.
 6. Four fundamental conditions for attracting manufacturing to small and mid-sized cities, high-tech manufacturing included, are: a) location within easy reach (by road and / or rail) of a large metropolitan area with a population of at least 500,000; b) competitively priced land and infrastructures; c) a readily available labour force, disposed to work at competitive wages; and d) skill and education levels concomitant with industry needs. Location on a transport corridor is an added plus. The only visible concentration of

- manufacturing that does not meet condition (a) is in the Maritimes, roughly along the Trans Canada Highway (PEI included) linking Halifax and Edmundston. Transport and labour cost advantages (and perhaps other cost advantages as well) have, it would seem, offset the disadvantage of the absence of a major metropolis. However, unemployment has remained above the Canadian average, a sign that more is required.
7. Finally, the dichotomy between Canada's western regional economies driven largely by resources and related services and eastern regional economies driven more by manufacturing (in this respect, Newfoundland and Labrador adheres to the West and Manitoba to the East) raise fundamental issues not been deal with here, among which the interaction between the two. The implications for manufacturing of a strong resource-driven dollar are fairly obvious. But, what for example of the relationship between Canada's modern service sector, a mainstay of its large metropolitan economies, and resource sectors?

Chapter 5: Amenities and the Residential economy

In this chapter we turn our attention to a phenomenon that has not been studied very much in Canada, one that Davezies (2009) has called the residential economy. By this he means an economy that survives not because it trades goods or services, but merely because people live and spend money there that has been earned elsewhere. His studies of France have revealed that a number of regions, particularly in Southern France where the weather is warm, have functioning economies - with local services, construction companies and retail – that lack any export or trade base. He has shown that, at least in certain places, this type of economy can function because there is an increasing spatial disconnection between the locations where incomes are generated and the locations where these incomes are spent. This disconnect can occur because of three different mechanisms, which will each be briefly discussed below.

5.1 The rentier economy

Rentiers, who live off investment income, can choose to live in locations that are far from the place where their money is invested. It is easy to forget that, Wall Street and wire transfers notwithstanding, investment generates incomes because someone somewhere is producing a tradable service or good (often assisted by capital which is also physically located in a place, such as a building, a machine, a warehouse or a computer). The 'economy' as it is usually understood is located where this *production* takes place. If rentiers systematically live away from production, and if the number of rentiers becomes significant relative to the working population, then residential economies of the type described by Davezies will begin to emerge.

The term 'rentier' often connotes 17th century administrators who purchased the right to collect taxes or, more recently, the sons and daughters of wealthy parents. These people often lived in different locations from where wealth was generated, but they represented such a small proportion of the population that their effect on the geographical distribution of economic activity was usually limited to a small number of well identified places. Versailles, in France, is such an example: the French king and his court resided there, thus stimulating local craftsmen and services, with French court expenses representing between 10 and 35% of the entire French budget⁴⁸ (Duindam, 2005).

However, this aristocratic image of rentiers needs to be re-evaluated in the light of an aging population. Indeed, *each person living off retirement income is a rentier*. Therefore, the number of rentiers in Canada is dramatically increasing. And whereas this has not, historically, had much effect on local economies in Canada (except for the southern parts of Vancouver Island and places near Kelowna in BC), the hypothesis that is being explored in this chapter is that many more local economies are now being influenced by an influx of retired people, i.e. of rentiers

⁴⁸ Of course some of this budget was the cost of government.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

who derive an income from elsewhere but who spend it locally, thus generating local service jobs.

Figure 5.1 indicates that, in 2006, 11.6% of Canada's population was on the point of retiring or just retired (in the 55 to 64 age cohort), and, simply by observing the number of 50 to 59 year olds in 2006 we can estimate that 14.1% of Canada's population is retiring or will have just retired in 2011. If some of these people migrate, and if they tend to migrate to the same areas, then they will have a considerable economic impact, particularly on smaller communities in which it does not take much to keep the local store open and the local services functioning.

Why would these people migrate? On retirement people may migrate for a variety of reasons, of which four will be considered. First, they may migrate to be closer to children and grandchildren. This type of migration is unlikely to be focused upon specific regions, and, if it is, will tend to focus on cities and regions where the production of tradable goods and services is occurring (usually places where the younger people have work). Second, they may migrate to be closer to hospitals and medical services. However, young retirees are generally fairly healthy, and previous analysis of Quebec suggests that this type of migration will occur later, probably in cohorts above the age of 75 (Shearmur, 2006). It is focused upon larger cities and regional service centres with health facilities. These two types of migration will not be considered further in this study.

A third reason for migrating is to move back to a previous place of residence, often to the region from which the person migrated in order to pursue a career. This type of migration may have a significant effect on certain localities and on their local economies, particularly those that meet the criteria for the fourth type of retirement migration.

Indeed, the final motivation that will be considered for retirement migration is to live in a pleasant and affordable location (Breuer, 2005; Brown and Glasgow, 2008; Urbain, 2002). This often implies finding an area with natural amenities, basic services, affordable housing and reasonable access to larger cities so that higher-order services, entertainment and travel are still possible. Previous studies of income composition (Shearmur and Polèse, 2005) suggest that there are certain locations in Canada, about 100 to 200km from large cities (within an easy drive but beyond commuting or regular interaction distance) that are particularly attractive to retirees. Areas around Victoria (BC), Kelowna (BC), Georgian Bay (ON) and the Laurentians (QC) stand out as examples, as do Florida and other southern states (Brown and Glasgow, 2008). However, unlike the U.S., Canada has few locations where climate can be considered a driving force in amenity-led migration, and in this chapter we seek to explore whether there are other Canadian areas that appear to attract young retirees and develop a service economy.

A note of caution must be sounded about retirement-driven residential economies. Given the demographics displayed in figure 5.1, it is probable that the rentier phenomenon can drive

certain local economies for the next 20 years or so, provided, of course, that retirement pensions (economic rents) are still being paid out. Indeed, 15.3% of the population was in the 35 to 44 age bracket in 2006, suggesting that about 15% of the population will be retiring around 2026-2031. From then on, the number of young retirees will begin to decline. Furthermore, retirees who are young and mobile today (in 2011) will, by then (and for those still alive) be requiring intensive services, whether for everyday mobility or health. From an economic perspective retired renters may, today, provide a boost to the local economy, but in the medium to long term they may be a factor that weighs it down unless the activity induced by retirees leads to dynamic processes that are less dependent upon retirees (Brown and Glasgow, 2008).

5.2 Long-distance commuters

To some extent, the residential economy, which is premised upon the geographic separation of where money is earned and where it is spent, is as old as suburbs. Indeed, to the extent that residential suburbs are locations where people spend their money on housing and services but where production does not take place, they apparently meet Davezies's (2009) definition of a residential economy. It is therefore necessary to qualify the notion of residential economy by introducing the idea of scale. It is not sufficient to identify locations that do not produce tradable goods and services yet possess a personal service base and inhabitants who earn an income. The residents who derive their income elsewhere and spend some of it locally must derive it from sufficiently far away so that the location of production and that of consumption are not strongly connected other than by the consumption process. Suburbs are part of a particular metropolitan labour market, and from an economic perspective the central city and its suburbs form a coherent functional unit (Karlsson and Olsson, 2006).

However, long-distance commuters can have a strong influence on small local economies. There are two ways that this can occur. First, there is an increasing number of people, particularly professionals and creative people, who do not need to go to a central place to work every day. These people can often work from home at least part of the week, even if their workplace is in a city and they need to get to the city (or at least to the international airport) regularly (Mokhtarian et al, 2004). Given their lower frequency of commutes, these commutes can be longer (Bruegman, 2006; Mokhtarian et al, 2004), so it is increasingly possible for people who work in cities to live 100km or more away from the city. The localities where they live usually have their own economy, so these long-distance commuters are rarely the only market for local services and retail. But their presence may have an important marginal effect on localities where local demand for personal services, retail and construction may not otherwise be high enough to sustain the supply (and hence the jobs) in these sectors (Mylott, 2009).

Second, there are even longer 'commutes' across provinces and across the country (Button and Vega, 2008). Mines, logging and oil extraction are increasingly being organised on a fly-in, fly-out

basis, or, as often in Alberta, with a mobile workforce that is only there temporarily for the construction phase. Such very long-distance commutes are not, of course, done on a daily basis. However, the key factor that links them to the idea of the residential economy is that these workers often live, and have families, at a location different from where they work. Although their income is derived from productive activity occurring, for example, in Alberta's oil-sands, most of it is spent at their place of residence, which may, for instance, be Rouyn-Noranda or Corner Brook (CBC, 2007).

It is thus hypothesized in this chapter that some localities have a high percentage of residents who declare a place of work that is distant from where they live, and this will be taken as a sign that at least some of the local economy (at the place of residence) depends upon economic activity that takes place elsewhere.

5.3 Second homes and cottages

A final driver of residential economies is second homes and cottages (Urbain, 2002). In Canada the expression 'cottage country' denotes localities that usually rely on temporary residents for their service industries to survive. This must be distinguished from places that rely on tourism: tourists do not invest locally. Rather, it is businesses and local governments that invest, create a tourist product, which is then exported (although a tourism 'export' is in fact the 'import' of a tourist). Second homes do not function in this way. In this case it is individuals who choose to purchase a home, who spend money on maintaining it and who visit it on a regular basis, often over extended periods. There is no tourist product being sold, rather just day-to-day services necessary for the second-homers to eat, have their hair cut and run their (second) home.

The second-home phenomenon is extremely difficult to capture in Canada. Unlike in France, for instance, the status of a residence as a main or secondary one is not recorded. Although there are certain localities in the Laurentians and in the Eastern Townships, for instance, where the local economy relies strongly on the money spent by Montrealers on their cottages, it is extremely difficult to substantiate this impression by way of direct data. Furthermore, the extent to which these people actually purchase supplies and services locally, as opposed to importing them from their city of residence, is a moot point that cannot be deduced from merely observing the location of second homes.

It should be noted that the second home, retirement and long-distance commute effects may to some extent overlap (Brown and Glasgow, 2008), particularly in areas from about 50 to 200km from major metropolitan areas. Whilst it is possible that some retirement locations are not connected to metropolitan proximity and that certain trans-continental 'commutes' can originate anywhere, it is clear that long-distance commutes by professionals, retirement locations and cottage country can all be focused on amenity-rich and relatively accessible zones around Canada's major cities.

5.4 Is there any evidence of residential economies in Canada?

It is not possible to measure directly or identify 'residential economies' for two reasons. First, the concept is still new, especially in the Canadian context, and there are no agreed-upon metrics that can identify the geographic source of incomes spent in a locality. Second, it is more than likely that the 'residential economy' is not the sole driver of any locality's economy. Rather, the residential economy is probably superimposed on other, more traditional, types of economy such as manufacturing, resources, or tourism.

The purpose of this analysis is not, therefore, to verify that there are localities where the local economy is surviving because of incomes earned from productive activities taking place elsewhere. Rather, its purpose is to see if such an idea is plausible in the Canadian context and, if so, to identify where the residential economy may be most strongly present. As already mentioned, the 'cottage country' economy, whilst we expect that few Canadians doubt its plausibility, cannot be studied further because of lack of data. Only the retirement economy and the long distance commute economies can be explored empirically by way of data analysis in this report.

Studying the retirement economy

The retirement economy can be explored by examining the migration behaviour of young retirees, which, in the context of this study, will be defined as people who are in the 55 to 64 age bracket in 2001, and who are thus 60 to 69 in 2006. This age group comprises almost all the people who will have retired over the 2001 to 2006 period, and will predominantly include retirees who are still in good health and physically autonomous. Mortality rates (which are increasingly rectangular, i.e. survival rates remain high for people below the age of about 75 or so, at which point they decrease fast, Canada-Romo, 2008) for this age group are low enough for the net change in the number of people to be taken as a good approximation of net in- or out-migration. Furthermore, migration events will tend not to be for health reasons (though this can happen at any age).

Of course, it is not enough to observe net migration rates, and then identify all those localities where the 55 to 64 cohort grows as 'residential economies': at best these are 'potential residential economies'. Other conditions must be set. In this study, we have chosen to be quite restrictive. A residential economy that relies (at least in part) on retirement must have the following characteristics:

The 55 to 64 age cohort must increase between 2001 to 2006; and

The 55 to 64 age cohort must increase more rapidly than the 0 to 54 age cohort. In other words, if the rest of the (younger) population is increasing faster than the retirement cohort then we will assume that there are other drivers of the local economy which are significantly more important than the new retirees.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

The localities thus identified are attractive to young retirees. A further filter will then be applied, which will serve to identify particularly dynamic retirement-driven residential economies. This filter will highlight those locations where employment in personal services (defined as the retail, finance, real-estate, leisure, and hospitality sectors) is growing more rapidly than employment in the rest of the economy. The location of these dynamic retirement-driven⁴⁹ economies will then be described.

As a by-product of this analysis, we will also identify localities where the 55 to 64 age cohort is declining more slowly than the younger population. This can be interpreted as a sign of potential problems since these locations, clearly in decline, are on course towards having a population of elderly, immobile and probably quite poor people (the wealthier ones will probably have moved).

Studying long-distance commutes

Long-distance commutes will be studied more directly by analysing the number of people who live in one census sub-division (a municipality or unincorporated territory – henceforth we will refer to these as municipalities) and work in another one which is over 100km away. Although commute distances are measured centroid to centroid between each *municipality*, the total of people commuting over 100km is then summed up over the 421 spatial units that correspond to urban agglomerations and census divisions across Canada (see chapter 3).

Locations will then be classified according to percentage of employed residents who 'commute' over 100km to their workplace. The term 'commute' must be used carefully here. In this context it means that a person has identified a place of work which is over 100km from his/her place of residence, and does not imply *daily* travel to and from this place of work.

One of the problems associated with this analysis is the measure of distance. We use straight line distance, which is not in itself a major problem for our purposes. What is more problematic is the fact that commutes are measured from the centroid of each municipality. In most regions within about 200-300km of the US border this does not pose a problem since municipalities are fairly small, and rarely over 20 to 30km from one side to the other (i.e. the centroid is usually 10-15km from the municipality's border). Thus, commutes of over 100km will, in most parts of southern Canada, imply a minimum commute of 70km (if the person lives on the edge of his/her municipality of residence and works on the closest edge of his/her municipality of work). However, the further north one moves, the larger municipalities get. Therefore, for regions over about 200-300km from the US border, the 100km centroid to centroid distance can potentially

⁴⁹ Of course, the evidence that these economies are driven by retirees will be circumstantial since the connection between service growth and retiree spending will not have been established, only deduced from their geographic coincidence.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

become meaningless. In order to limit this problem, people living in municipalities with a radius of over 50km have been excluded from this analysis. However, we have not applied this exclusion to people who work in large municipalities, so results in northern parts, where municipalities are very large, must be interpreted with caution.

Another limit of this analysis is the data themselves. These only record people who declare a place of work. However, especially in smaller and rural areas many people do not have a regular place of work - they may work in transport, forests, on ships etc - and may therefore be excluded from the population under study. Finally, in small municipalities data are sometimes suppressed, as are all inter-municipal flows that are below 20. Thus our analysis is of a very large sample of workers, but not of the whole population of workers in Canada.

These caveats do not invalidate the study, but imply that the results can only be suggestive. They will provide some idea as to the extent of long-distance commutes in Canada and of the regions where high proportions of workers derive their incomes from distant locations. They will not be a solid basis upon which to draw precise conclusions about specific regions.

5.4.1 Retirement driven residential economies

The overall picture

In 2001 there were 2.85 million Canadians between the ages of 55 and 64 (Table 5.1). Between 2001 and 2006 this cohort lost 50 000 people (1.7%), some of whom may have left the country and others who may have died. Internal migration of young retirees led to a net shift of about 40 000 of these people (1.4%) across the borders of one of the 421 spatial units analysed in this study.

By contrast the 0 to 54 age group increased by 733 000 during this five year period⁵⁰ (an increase of 3.1%, the positive balance of immigration over emigration) and the net increase/shift in population across the borders of our spatial units was 926 000. However, this figure includes new immigrants: the shift in population due to internal migration alone is estimated to be 193 000 (0.8%), a number that is relatively lower, given the size of the cohort, than that for young retirees. Excluding new arrivals, young retirees seem to be more mobile⁵¹ *between our spatial units* than those in the 0 to 54 age category.

⁵⁰ 0 to 4 year olds are excluded from the 2006 numbers

⁵¹ Strictly speaking we are not measuring mobility but net population shifts due to mobility across the boundaries of our 421 spatial units. Thus, if 1000 people move from A to B and 1000 move from B to A there is high mobility – 2000 people have moved! – but no net shift. If 1000 people move from A to B and 200 move from B to A there is a net shift of 800.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Despite young retirees' slightly higher net mobility, these figures put the retirement effect into perspective. The effect is small, on average 100 migrant retirees per spatial unit, but these modest figures should not lead us to dismiss their importance. Indeed, if these migrants tend to concentrate in particular areas, and if some of these areas have low population, then, locally, their effect could be quite large. Even if, at the scale of Canada, they cannot be said to (yet) be a driving force, the net shifts in residential location caused by the migration of young retirees represents 17% of all residential shifts in the 0 to 64 age cohort. As already mentioned, the retiree effect will be a relatively marginal one in most places in Canada, but such marginal effects, particularly in small localities, can make a considerable difference.

Retirement migration and synthetic regions

In Table 5.2, the 421 regions that we analyze are classified according to the growth rates of the 55 to 64 cohort relative to the 0 to 54 cohort. Localities where it is possible that retirees may have a significant effect on the local economy are those where their growth rates are more rapid than the rest of the under 65 year old population.

There are 77 localities (those in the top row of Table 5.2) where the retiree cohort is growing and the young cohort declining. These localities are the most likely to be benefitting from their capacity to attract retirees, since they are otherwise losing population. Fifty-five of these 77 localities are peripheral, and thirty-nine of these, well over half the peripheral ones, are in localities that have no town larger than 10 000 people. A further 11 are in small peripheral towns. Thus, the majority of these potential 'residential economies' are in peripheral areas, areas that are usually losing population to out-migration. Despite the relatively small numbers, migration flows of retirees may have a marked effect on their destinations.

A further 79 localities have a retiree cohort that is growing more rapidly than the cohort of younger people. Clearly, although these localities are particularly attractive to retirees, they are also attractive to the younger population (some of whom may indeed be attracted by the employment opportunities generated by the retirees themselves, Brown and Glasgow, 2008). Not surprisingly, these localities tend to be closer to metropolitan areas: 51 of the 79 are in central areas, but again most are in rural areas or small cities (37 of the 79 are in small central localities, a further 18 in small rural localities).

In short, retirees seem to migrate towards small towns (less than 25 000 inhabitants) and rural areas. The further away these localities are from major metropolitan areas, the more retiree in-migration dominates total in-migration to the localities.

In terms of actual numbers, peripheral regions are at least as attractive to retirees as more central ones. Focusing only on the 156 possible 'residential economies' just described (those shaded in Table 5.2), 17 000 young retirees moved to peripheral areas and 14 500 to central areas. Only 8 800 retirees moved into areas where the young population is growing faster, of

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

which 7 500 towards central areas. On the whole then, although slightly more retirees migrate to central areas than to peripheral ones, the areas towards which retirees move in a more exclusive fashion tend to be small and tend to be towards the periphery. This is in keeping with our expectations.

It should also be noted that areas in which there are likely to be problems associated with an 'abandoned' population of immobile older people are principally small towns and rural areas in the periphery. Of the 75 localities in this category (where the older population is declining more slowly than the younger one), 51 are rural peripheral areas and 11 are small peripheral towns.

Retirement migration and Canadian regions

In Atlantic Canada, Quebec and Ontario about 36 to 40% of all spatial units tend to be attractive to retirees (Table 5.3). However, whereas in Atlantic Canada decline of the younger cohort seems to be the norm (a full 36% of spatial units there attract retirees but are losing their younger population), only 7% of localities are in this situation in Ontario. Only about 20% of spatial units in both the Prairies and Alberta are more attractive to retirees than to young people, but in Alberta most of these are also experiencing growth in the younger cohort; in the Prairies most are losing young people. Finally, in British Columbia, 55% of all spatial units in our study are attracting retirees faster than they are attracting younger people.

This regional distribution comes as no surprise. Overall Atlantic Canada is still tending to lose population to out-migration. However, it appears from this analysis that some of the Atlantic diaspora may be returning home upon retirement. Atlantic Canada seems to have a particularly high proportion of regions where an 'abandoned' population of older people may appear. Quebec also has many regions where this seems to be happening, but, reflecting the dichotomy between its peripheral regions (many of which are suffering from out-migration) and its metropolitan areas, it also has more areas in which young and old populations are growing concurrently. Ontario resembles Quebec but – at least from 2001 to 2006 – has fewer regions that are exclusively attractive to retirees. The Prairies pattern seems to resemble the Atlantic one except that fewer areas are exclusively attractive to retirees and more are witnessing a rapid decline of old people.

Alberta, not surprisingly, has fast growth amongst its younger population, and therefore only a small proportion of regions that are exclusively attractive to older people, and very few localities at risk of an 'abandoned' aging population, at least for the time being. This may change if Alberta ceases to be attractive to younger migrants. Finally British Columbia has always been recognised as one of Canada's principle retirement destinations, and this trend is not belied by the figures in Table 5.3.

Refining the Analysis: Growth in Personal and Leisure Services

So far we have summarised the geography of retiree migration. The results conform to expectations to the extent that retirees seem to be moving to smaller cities and villages in both central and peripheral areas, but their influence (as measured by differential growth rates between the young retiree and the less than 55 cohorts) seems to be stronger in the periphery. Furthermore, British Columbia, and to some extent Atlantic Canada, stand out as having larger proportions of localities that are particularly attractive to retirees, although some attractive localities are found in all regions of Canada.

If we are to identify 'retirement economies', however, it is not enough to identify places that attract retirees. It is also useful to identify places that generate employment possibly connected with retirees, particularly if they do not generate other types of employment. Thus, in this section we seek to isolate those localities that both attract young retirees faster than they attract under 55's *and* that generate more jobs in the personal services sector than in the rest of the economy. We are not suggesting that the migration of young retirees is the only possible cause of faster personal service growth. Such services can grow faster than the rest of the economy in central places or in tourist destinations, for example. However, those localities that are *both* highly attractive to retirees *and* fast growth service locations are good places to start looking for economies that are at least partly dependent on the rentier income derived from retirees. These will be called dynamic retirement economies.

About half of the 156 localities identified as particularly attractive to retirees also have faster growth in their personal service employment than in the rest of their economy, and these dynamic retirement economies are distributed almost equally between central and peripheral areas (Table 5.4). However, whereas in peripheral areas they are predominantly rural (with only eight urban areas identified as retirement economies), in central areas they are equally rural (15 areas) and urban (19 areas).

Quebec has the highest number of localities that meet the dynamic retirement economy criteria followed by Ontario and Atlantic Canada (Table 5.5). Alberta and the Prairies have very few localities of this nature, and this may reflect the larger size of their spatial units, but also the relative dynamism of their non-retirement economy during this period.

These 71 localities, however, only attract, between them, 10 500 of the 31 500 retirees that moved towards the 156 retirement economies. Thus, more retirees move to retirement areas that do not seem to benefit very much if we assume that economic dynamism shows up as faster personal service growth. This is not, however, as surprising as it may seem. These results suggest that the service employment generated by retirement migration is concentrated in a few places, towards which retirees will travel to obtain their services.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Maps 5.1 and 5.2 display all the information so far presented in this chapter. Map 5.1 presents the results for eastern Canada, and Map 5.2 for western Canada. Localities attractive to retirees are indicated in orange and red, and those that meet the criteria for 'dynamic retirement economies' are hatched in gray. Areas in light blue are those where there is a danger of an 'abandoned' older cohort, since these regions are in decline (out-migration of under 55s *and* of young retirees), with the younger cohort leaving faster than the older one.

In eastern Canada (Map 5.1) areas that attract retirees are located in certain parts of Quebec's Eastern Townships, in Charlevoix, around Saguenay, along the coast of the Lower St. Lawrence, in the Laurentians and in an arc that extends about 200km around Toronto. In Atlantic Canada the Avalon Peninsula, PEI, areas around Gander and Corner Brook, and most areas around greater Halifax, Moncton and Saint John are attractive to retirees.

This geography partly explains why many retirees do not seem to be moving towards dynamic retirement economies. Indeed, since many areas towards which retirees are migrating are located around large metropolitan areas or close to large regional cities, then it is understandable that these areas do not develop their own personal service economy. Retirees have relatively easy access to the larger urban centres, albeit not immediate access, especially around the larger cities of Montreal and Toronto. 'Dynamic residential economies' can be found scattered amongst the areas that attract retirees, and very few retirement areas are distant from both an urban area *and* from a 'dynamic residential economy'.

In the West (Map 5.2), similar patterns emerge. Areas around Winnipeg, Saskatoon, Brandon, Regina, and of course Kelowna, Kamloops and Victoria are all attractive to retirees and many, but not all, display the characteristics of 'dynamic retirement economies', particularly in the Rockies and on Vancouver Island.

Alberta stands out as having very few localities that are particularly attractive to retirees, but has quite a few areas around Calgary and Lethbridge that attract retirees but at a slower rate than younger people. This may reflect Alberta's changing economy, as the influence of its rapidly growing cities extends into what may have previously been cottage or retirement country. In eastern Canada this type of overlap between retirement growth and the growth of younger cohorts is also visible around all large cities (Montreal, Quebec, Ottawa, Toronto), though Eastern Canada – perhaps because of its finer geographic subdivisions – also has more clearly defined retirement destinations.

Retirement economies: summing up

It has not been possible, in this section, to verify directly the existence of retirement economies. However, there is substantial evidence that supports the hypothesis that retirees are moving to smaller cities and rural areas within easy reach of larger regional cities and metropolitan areas. Some of these retirement destinations seem to be developing a service-oriented economy,

others seem to rely on the nearby larger city. Around the larger and faster growing cities there is evidence of overlap between growth of the younger, working age, cohort and growth of the retiree cohort.

Our analysis pinpoints well-known retirement destinations such as the Okanagan valley, the southern parts of Victoria Island and Canmore, west of Calgary. This validates our approach, notwithstanding the approximations that have been made, and provides evidence that the method is quite robust. Since we discover other similar areas, this suggests that the type of retirement and economic dynamics that are observed in areas traditionally associated with retirement in Canada are not limited to them. These dynamics can be observed across Canada, particularly in scenic locations an hour or two from metropolitan areas. It is telling that areas such as central Newfoundland, most of the Gaspésie (in stark contrast to the more accessible Lower North Shore) and most of the Prairies do not emerge as retirement destinations, and neither do most large cities.

It should be noted that the actual destinations of retirees are probably much smaller than the large regions which we analyse. Within central and peripheral rural areas, it is no doubt particular communities that attract retirees. These communities may benefit quite substantially from the influx of retirees, and economic changes may not show up at the scale of the region. Our analysis lends credence to the idea that, in some regions, retirees may be having an impact on local economic dynamics. However, more detailed qualitative work and possibly recourse to alternative databases will be necessary to better understand the location and nature of this impact.

5.4.2 Long distance commutes

This section's main purpose is to identify regions where a substantial proportion of the workforce declares a place of work over 100km away. The limitations of our methodology have already been discussed, and should be borne in mind whilst reading this section.

Of the 10.6 million working people included in the data and who live in a municipality with a radius of less than 50km⁵², 1% declare a place of work that is over 100km from their place of residence (Table 5.6). This proportion tends to rise the smaller the urban population, and in central areas it tends to be lower than peripheral areas. Thus, 0.4% of the resident workforce of Canada's largest metropolitan areas work over 100km from where they live, about 1% for large and medium sized central cities, 1.8% for the smallest central cities and fully 3.7% of the workers in central rural areas. In peripheral areas about 1.5% of the urban workforce commutes over 100km, and 4.5% of the rural workforce.

⁵² The radius is calculated for a circle of the same area as the municipality.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Thus, even if long distance commutes are rare for metropolitan workers, and unusual across Canada as a whole, almost one worker in 20 commutes this sort of distance (or further) in peripheral rural areas. This is a very large proportion, and suggests two things:

1. about one out of every \$20 of work income spent by *residents* in rural peripheral areas (and 1 out of every \$30 spent by residents in central rural areas) is derived from work activity that takes place over 100km away⁵³.
2. For some rural area this proportion may be much higher.

The highest proportion of long distance commuters can be found in Atlantic Canada, where 1.8% of all workers commute over 100km (Table 5.7). In fact, in our Newfoundland sample, we find that 3.5% of all resident workers commute more than 100km (whereas the proportion is 1.8% in Nova Scotia, and about 1% in New Brunswick and PEI). The Prairies, Saskatchewan in particular (2.2%), and Alberta also have high levels of long distance commuting, whereas British Columbia has the lowest levels.

Maps 5.3 and 5.4 illustrate the distribution of these proportions across Canada. Grey areas are those for which data are lacking, which have been excluded because the municipalities are too large, or for which the proportion of long distance commutes is at or below the national average (a cut-off of 1.2% is taken to allow for minor deviations above the global rate of 1%). As a rule, grey areas to the south and around large cities are not suppressed, whereas larger northern areas are.

The high levels of long distance commuting from peripheral rural areas, and indeed from rural areas in general, are evident from both these maps. Particularly around Montreal, Toronto and Quebec (and to some extent Halifax, Saint John and Winnipeg) there is an arc of long distance commutes at or around 100km to 150km from the city. It is probable that these are areas from which professionals, creative people and other workers who can do so, commute towards the nearby metropolitan area on an intermittent basis. Many of these areas correspond to those identified on Maps 5.1 and 5.2 as localities that are attractive to young retirees. Indeed, given the nature of our data, it is possible that some of these intermittent long distance commuters are semi-retired professionals who are maintaining contacts (through consultancy or other similar work) with their profession.

However, the maps are very different when peripheral rural areas are considered. Many peripheral rural areas have larger proportions of their local workforce that commute over

⁵³ This is of course a rough estimate intended to illustrate the possible impact of these commutes. It may be an over-estimation, since the worker clearly spends some income whilst he/she is away. However, if we assume that the worker's main residence and family are at the place of residence, and if we further assume that the long distance commute is compensated for by a higher than average income, then this rough and ready estimation may not be far off the mark.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

100km, whereas these are not attractive to retirees. Some of these high percentages may be attributable to the large municipalities being analysed, and may actually be picking up short commutes between communities at the edge of geographically large municipalities. However, it should be borne in mind that the geographic contours shown on Maps 5.3 and 5.4 are not those that have served to measure distances. Census sub-divisions, of which there are over 5000 in Canada, have been used, and our distance measures are therefore in most cases relatively precise. Furthermore, very large municipalities of residence have been deliberately suppressed. Therefore, whilst there may be some over-estimation of long distance commutes in a few large peripheral rural areas, we have attempted to limit this bias and feel that the overall picture we present is accurate (though our data may be imprecise for a small number of specific areas).

Basically, many workers in peripheral Canada are travelling long distances to work, some maybe to a nearby metropolitan area or large city (for example people from areas around Gander may be commuting to St. John's), but others no doubt far further afield (for example workers on Newfoundland's North Shore may be working in Alberta oil fields).

In this study we will not analyse the commuting flows between localities: this would require a separate report, and is not the purpose of this chapter. What this evidence illustrates is that in many localities in Canada, particularly rural ones, resident workers commute very long distances (not necessarily on a daily basis) for their work.

Long distance commutes: summing up

The analysis in this section is based on imperfect data. This is the nature of all data that sets out to measure small flows between small localities, even if they are collected rigorously through a well designed census. Such detailed analysis of commute flows, notwithstanding our caveats, will quite simply not be possible from 2011 onwards because of changes in the way the census data are collected. Given that we can assume there is no particular bias in these data, however, the biggest limit to our analysis is the calculation of commute distances, which is inherently limited, not by our use of straight-line distance, but rather by our inability to locate each worker and workplace precisely within the census subdivision of residence.

Nevertheless, our results show that, especially in small cities and in rural areas, a high proportion of resident workers, above 3% in rural areas, commute over 100km to their place of work. In the context of this analysis, this means that roughly 3% of the work income that enters the economy of these rural areas is generated by employment that takes place over 100km away. This does not mean that these rural economies fully depend upon long distance income transfers to survive. It does show, however, that a sizeable segment of their local economy – particularly of their local service economy – is being directly driven by work incomes generated elsewhere.

5.5 Conclusion

There is little evidence, in Canada, that complete dependence on market transfers⁵⁴ from the outside, whether by way of retirement rents (pensions) or direct wage transfers from one place to another, is widespread. Most localities still depend upon a tradable economic base to survive, be it tourism, resources, tradable services or government services. Of course, other types of income transfers, such as employment insurance, are also important, but we have considered these to be non-market incomes and therefore beyond the scope of the 'residential economy' idea.

There is considerable evidence, however, that many localities benefit, at the margin – and probably well beyond the margin in some cases – from market transfers that occur solely because of the distance that separates the place where income is generated from the place of residence of the person who receives the income. The evidence presented in this chapter, although largely descriptive and circumstantial, has highlighted the fact that it is the most vulnerable economies, those that are rural and with low levels of population, that are most attractive to retirees and that send their workers the furthest afield. Thus, even if 'residential economies' are no panacea for local development woes, it is highly probable that in many of the remote areas highlighted in this study they play a role far greater than the absolute numbers suggest. Indeed, it may only take a small number of relatively well-off residents who derive their incomes from elsewhere to tip the balance when it comes to keeping a local shop, contractor or garage in business, and the existence of these businesses may, in turn, make these marginal localities more attractive to other potential long distance commuters, retirees or second-home owners (Brown and Glasgow, 2008).

In short, it would be an error to suggest that "retirees are the next creative class" or that "long distance wage transfers are the next equalization payments!" However, it is entirely reasonable to suggest that these long distance income transfers can, in some cases, be of critical importance to local economies, particularly to the smaller, rural or more remote ones.

⁵⁴ By market transfer we mean money generated by investments (including pensions) pensions or work in one location and spent in another. Other sources of income, such as unemployment insurance, are also generated in different location from those where it is spent, but we have not analyzed unemployment in this section,

Chapter 6: The Geography of Economic Inequality in Canada

6.1 Introduction

Economic inequality is a vast topic that draws upon notions of justice, in itself rather philosophical and based upon fundamental ideas regarding what society is, and the tension between individualism and community (Sen, 1992; Rawls, 1971; Nussbaum, 2000).

In this chapter economic inequality will be considered in a far more limited way, and two dimensions will be examined:

First, income distribution across Canadian cities and its evolution during the 2001-2006 period.

Second, income, employment and education differences between men and women.

6.2 Income distribution

The purpose of examining the geography and evolution of income distribution in the context of this report is to see whether, in certain parts of Canada, income differences between the wealthy and the poor are substantially larger than in others. It is well established that low incomes (particularly in the context of Canada where the variation in mean incomes across geographic space is relatively small, Shearmur and Polèse, 2005) induce stronger feelings of unhappiness and social dissatisfaction in a context where neighbours are earning a lot more. This is connected to the 'Easterlin paradox' that levels of satisfaction and happiness do not rise with GDP levels (Easterlin, 2001; Clark et al 2007). Thus, if the purpose of studying regional economies across Canada is to obtain some idea of the local well-being of populations, and given that extremely few regions deviate more than 20% from the Canadian average⁵⁵ (and that, therefore, mean incomes are nowhere so low that subsistence causes a problem), analyzing local levels of inequality will provide some additional information.

To study local income distributions a simple indicator is constructed, which is the ratio of mean total income to median total income (for individuals over 15 years of age). Mean income is calculated by pooling all individual income from all sources in a city, and dividing it by the number of people over 15 years of age in the city. It is strongly affected by very high income earners, which will tend to pull the mean higher, even if only a few people benefit. Median income is the income level that separates the 50% of people with the lowest incomes from the 50% of people with the highest incomes, and is not influenced by very high earners. Thus, the higher the ratio of mean to median incomes, the more high earners there are, and the more

⁵⁵ Though some localities *within* the regions that we study do have very low levels of income (Chokie and Partridge, 2008).

'unequal' the income distribution. This indicator, without being very refined, has the advantage of being available for the 203 urban areas in our data base.

Income and employment differences between men and women

Since the 1970s there have been some major changes in economic structure, with a decline of manufacturing and resource extraction jobs in many areas and a concomitant rise of service sector jobs (Coffey and Shearmur, 1996). Women have massively entered the workforce (Krahn and Lowe, 1998), and in a context where women's capacity to participate fully in economic activity was initially very limited (Friedan, 1963) this has generally been perceived as a progressive development. However, over the past 10 to 15 years it has become evident that the push towards equality between men and women has led to university enrolment and graduation that is now highly skewed towards young women (Statistics Canada, 2010). Given that university degrees are an important entry requirement into higher paying service sector jobs (Wolff, 2002), as the current generation of young women enter the workforce they will be at an advantage relative to young men (McDowell, 2003).

Furthermore, in certain communities hard hit by manufacturing and resource decline, women have become the prime wage earners (Faludi, 1998; Rosin, 2010): and whilst this can be viewed positively to the extent that there is no reason why women should not be the prime earners, it also brings with it problems associated with male identity and role in the family and society (Bye, 2010). These problems are not always recognised, partly because the onus is still put on the need to promote women's participation in the economy (Silberschmidt, 2001; Robinson, 2000; Hite and Viterna, 2005). However, as McCall (2001) points out, the situation can vary dramatically across geographic space and across different industries. For example, it is probably quite reasonable to hypothesize that, in certain contexts, women face barriers not faced by some men (or an example see McDowell (1997, 2010) who analyses the banking industry in London - though some men also face barriers in this industry (McDowell, 2001)). It is maybe not quite so reasonable to make the same hypothesis for women in a small city where the lumber mill has closed (Smith and Parkins, 2011).

McCall (2001), in her detailed analysis of the sources of economic inequality between men and women across 3000 U.S. counties concludes that apparent inequality (differences in income levels and employment) is not always present. Where it is, it can be attributed to a variety of factors, such as differences in hours worked, in education levels, in occupations etc., and, in some places, unfortunately, to discriminatory wage and employment policies.

The fact that women and men often occupy different occupations may itself be evidence of a certain type of discrimination. It is often assumed that earned income levels are associated with an individual's productivity level (Crépon et al, 2003). This idea, whilst it may to some extent be valid *within* professions (e.g. if banker A earns more than banker B, he/she is probably more

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

productive, in the sense that he/she earns more money for the bank), is clearly not valid *between* different professions (is banker A, who earns say \$10 000 000, two hundred times more productive than nurse A' who earns \$50 000?). The earning levels associated with different professional groups reflect their social status and power within society. Thus, it is argued that the lower wages in female dominated occupations (such as nursing, primary school teaching, and cash register clerks) when compared with traditionally male dominated professions (doctors, university professors and truck drivers) are attributable to the (historically) greater economic power wielded by men (Wright, 1997). If women increasingly enter these higher earning professions, their economic power (and earnings) should rise.

Thus, when looking at the distribution of inequality between men and women across Canada, three different metrics will be used. These indicators are constrained by the fact that our data are not cross-tabulations and do not therefore report all information for men and women separately.

i) *The male/female difference in work income derived from full-year full-time employment.* This is an indicator of the extent to which women and men *in full employment* have jobs of similar economic status and power.

ii) *The male/female difference in participation rate.* This is an indicator of the extent to which women over the age of 15 are participating in the workforce. The unemployment rate is more difficult to interpret, particularly with five-year snap-shots, because it only measures the proportion of people actively looking for work at the date of the census, and is dependent on the choice of whether or not actively to seek work.

iii) *The male/female difference in post-secondary qualification holders.*

Local income inequality, 2001-2006

There is no absolute criterion by which to determine whether one locality's income distribution is more or less unequal than another's. For this reason, the criterion used is relative. The ratio of mean to median incomes has been standardised (i.e. its mean has been set at 0, and its standard deviation at 1), and the following classification has been defined:

High inequality: the standardised ratio has a value greater than 0.5.

Average inequality: the standardised ratio has a value of between -0.5 and 0.5.

Low inequality: the standardised ratio has a value lower than -0.5.

Changes in this ratio, measured simply as the arithmetical difference between the 2006 ratio and the 2001 ratio, have been treated in the same way. Thus, we have the following classification:

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Increasing inequality: standardized change greater than 0.5.

Little change: standardised change between -0.5 and 0.5.

Decreasing inequality: standardised change lower than -0.5.

The position of each of the 203 urban areas according to these two classifications is recorded in table 6.1. This table is provided because, unlike for the study of employment growth or of residential economies, where our analysis can test some clear hypotheses, we have very few *a priori* ideas as to how inequality will be distributed or will change across space in Canada. Thus, even though more straightforward tables will be commented upon below, it is felt that the complete information may be useful to the reader.

Table 6.2 is a summary of table 6.1, with the column percentage of observations in each cell rather than the names of each city. The patterns that emerge are not clear. Metropolitan regions (AM) tend to be high inequality locations, with inequality rising in Toronto, Calgary, Edmonton and Vancouver (Table 6.1). Though these are only four cities amongst the 203 analysed, they contain about 9 million people – thus, a large number of Canadians are living in cities with polarised income distributions that were becoming increasingly polarised between 2001 and 2006.

In contrast to this polarisation of incomes in metropolitan areas, unequal income distributions are becoming more equal in smaller cities. Of the 59 non metropolitan cities classified as highly unequal in 2001, 25 display decreasing levels of inequality and only ten have increasing inequality levels.

Amongst the 88 cities with average income inequality in 2001, 20 are becoming more unequal and 22 less so, whereas of the 56 least unequal cities, 13 are becoming more unequal and nine less so. Thus, except in metropolitan areas there appears to be a tendency for inequality to revert to the mean – the more unequal cities are becoming less so, and the least unequal are becoming more so.

This is not true in all places, however. Collingwood (ON), Ste-Adele (QC), Medicine-Hat (AL), Bay Roberts (AT), Estevan (PR) and Saugeen-Shores (ON) are all displaying accelerating rates of inequality. This group comprises sought after peri-metropolitan suburbs (which could be retirement and/or cottage-country destinations), and a few oil-dependent Albertan cities. At the other end of the scale, accelerating rates of equality can be found in a variety of locations, both in peri-metropolitan places such as Woodstock (ON) and North-Grenville (ON) and in peripheral cities (Rivière-du-Loup, QC; Grand-Centre, AL).

Overall, small to medium-sized central cities have the most equal income distributions (36 to 40% of them had low inequality in 2001), and small to medium sized peripheral cities display the highest levels of inequality (37 to 38% had highly polarised income distributions), except metropolitan areas of which a full 63% (five out of eight) have polarised income distributions.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Large non-metropolitan cities, both central (73%) and peripheral (61%), tend to have fairly average levels of income polarisation.

Alberta stands out as having the highest proportion of cities that are rapidly polarising, with 67% of its cities in this category (Table 6.3). British Columbia (38%) and Atlantic Canada (47%) both had, in 2001, very high proportions of cities with polarised income distributions. Quebec, at the other extreme, has the highest proportion of cities with low levels of inequality (49%) and a high proportion of cities where the income distribution is becoming more even (32%), similar to Atlantic Canada (36%), Ontario (31%) and the Prairies (33%).

This result is particularly interesting because it suggests that there is something specific about Quebec's economy, not so much in its capacity to grow fast or generate high incomes, but in its capacity to ensure a relatively more equal distribution of the economy's benefits. The 'Quebec model', often criticised by economists on the grounds that it may be limiting the province's absolute level of GDP (Gill, 2005), appears nevertheless to be distributing the economy's benefits more equally, at least within each city. If it is true, as Easterlin (2001) argues, that in affluent societies it is *relative* and not *absolute* incomes that determine satisfaction levels, then Quebecers may have good reason to be satisfied with their economic performance, and this may explain the difficulties encountered by those who wish to modify the system.

Table 6.4 sets out a series of regression analyses. The two first columns repeat tables 6.2 and 6.1 in a more formal way. They show that the differences of inequality levels between cities in different regions are very marked, and that inequality is indeed lower in medium-sized central cities than elsewhere. The next column reveals, however, that inequality is more strongly connected with city size than with synthetic regions. Inequality tends to rise with city size, rapidly amongst smaller cities, then more slowly as city size increases further. The final column shows, however, that the strongest determinant of inequality, apart from Canadian regions, is industrial structure. Inequality is higher in cities with structures CL11 (service and primary sector centres), and CL7 (cities associated with construction, services and leisure). Inequality is markedly lower in cities dominated by public administration employment (CL8). Furthermore, after controlling for these industrial structures, it emerges that cities with a higher proportion of graduates – those with high proportions of creative people? – have higher levels of income inequality.

Table 6.5 performs the same exercise for *changes* in income inequality between 2001 and 2006. Alberta clearly stands out as the region in which incomes were polarising the fastest during this period, and, to a lesser extent (and only after all the controls are introduced) British-Columbia. The rate of change in the equality of income distributions is not connected to synthetic regions. However, inequality rises faster in cities with a high proportion of graduates and in cities with high mean income levels. Thus, in high income and high status places, high incomes are getting even higher. However, this is mitigated by the fact that if initial inequality levels are high in 2001

then income inequality tends to diminish between 2001 and 2006. It must be remembered that high inequality does not mean high mean incomes (there can be high inequality in poorer areas as well). There is virtually no correlation between any of these explanatory variables. Thus, these results show that the higher the incomes (economic power?) and education levels (social power?) in a city, the faster inequality grew there in the early 2000s. Across all types of city, though, irrespective of income or education levels, the extremes of inequality tended to revert towards the average. Thus very low levels of inequality tended to increase, and very high ones to decrease.

6.3 Income and employment differences between men and women

In this section we present some general results, derived from regression analyses similar to those already presented. They describe average trends concerning similarities and differences between economic outcomes for men and women, but do not highlight individual localities where the situation may be different.

Differences in terms of full-time salaries between men and women

In this section the ratio of male to female salaries (MFS) for full time employment will be analysed (Tables 6.6 and 6.6bis). Overall, between 1991 and 2006, women's full time salaries have increased faster than men's, but still remain, on average, lower: in 1991 MFS was 1.50, and in 2006 it was, on average, 1.38.

In 1991, the local gaps between male and female salaries were lowest in the Prairies and highest in British Columbia. By 2006 this gap was even lower (relative to other regions) in the Prairies, and substantially higher in Alberta, with all of eastern Canada at similar levels between these two extremes.

These observations remain similar if synthetic regions are added to the model. There is a tendency for salaries to be more unequal in peripheral cities than elsewhere in Canada (including rural areas in the periphery), and this has strengthened over the 15 year period. Central rural areas, however, have a more equal distribution of salaries between men and women.

In 1991 the salary gap between men and women was greater in localities where relatively more men had university degrees, and was also greater in areas that had higher industrial specialisation. This also held in 2006, but was then conditional upon the industrial structure. Not altogether surprisingly, the salary gap is lower in localities where women earn higher salaries, though this is not a foregone conclusion because it is conceivable that in places where women's salaries are high, men's are even higher. However, the salary gap is higher the larger the city.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Finally, whereas industrial structure only played a minor role in determining the MFS gap in 1991 (the inclusion of industrial structures only added 0.02 to the adjusted r^2 , or 0.445 minus 0.429), it is a major explanatory factor in salary gaps in 2006 (adding 0.21 to the adjusted r^2 , 0.525 minus 0.316). In 2006, the salary gap between men and women is substantially lower in cities dominated by public administration (CL11) and in cities with a combination of primary and warehousing employment (CL47). The lower gap between men and women in public-administration dominated locations is also evident in 1991 (CL10). Finally, in 2006, the inclusion of industrial structure also brings out the more equal distribution of incomes between men and women in metropolitan areas.

Table 6.6 presents two static analyses, one for 1991 and one for 2006. Table 6.7 shows how *rates of change* have been distributed across various types of locality. First, although the male to female salary gap is closing across the entire period, it only closed very slowly during between 1996 and 2001, an average rate of -0.9%, but did so more rapidly from 1991 to 1996 (-4.4%) and 2001 to 2006 (-4.9%). Despite this trend, Albertan cities have systematically seen the ratio of male to female incomes rise (relative to Quebec and the Prairies). Ontario, except in the late 1990s, has seen it fall.

The ratio of MFS is being reduced most rapidly in localities where it is largest, but this trend seems to be slowing. The gap is closing more slowly, however, in localities where the ratio of male to female graduates is higher.

Industrial structure plays a significant, but not very strong, role in explaining differences in the rate of change of the wage gap. In the early 1990s and early 2000s, cities with a services and public administration structure (CL10 in the 1990s, CL11 and CL17 in the 2000s) experience the most rapidly closing wage gaps. In the early 2000s, it is industrial structures which rely on the primary and first transformation sectors (CL13 and CL49), as well as service centres with high levels of construction employment, where the gap is closing more slowly (CL23).

Overall, then, women's full-time salaries are slowly catching up with men's, though in almost all of the regions in our analysis they are still well behind. The convergence is faster and the differences smaller in localities with a strong public sector presence. There are ten localities where, in 2006, women's incomes for full-time work are greater than men's and a further 11 where they are within 10% of men's earnings (table 6.8). Of the 10 localities where women earn more than men, one is in Quebec⁵⁶, one in Alberta, and the eight others are in the Prairies. All are rural areas, and all but two are in the periphery. The next 11 observations with low MFS ratios are also all rural and predominantly in the Prairies (seven are) and in the periphery, with one in Ontario, one in Atlantic Canada and one in BC.

⁵⁶ Incomes are extremely high in this area, and the population, of 530, very small. It is possible that this observation is spurious or suffers from errors.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Women therefore earn less than men for full time jobs in almost all localities in Canada. There could be many overlapping reasons for this. One of the mechanisms that probably explain these differences is the different occupational choices made by women and men, with occupations traditionally chosen by women attracting lower salaries. However, there are a small number of localities, principally in Canada's rural periphery, where this is not true. In these places women in full-time jobs earn more than men. Some of these localities may provide lessons as to how wage equality can be achieved, and what its costs and benefits are to the people concerned. Others, though, may provide examples of what can happen if traditional male occupations in resources and transformation sectors disappear.

Differences in participation rates between men and women

So far we have looked at salary differences between men and women with full time jobs. We assume that people with full-time jobs are not prevented from working because of family constraints (though their career paths and hours worked may be quite different, reflecting different life choices – items that cannot be controlled for in these very general and descriptive models), that they are available for the best paying job open to them, and that they have chosen to work. Salary differences between men and women therefore either reveal inequalities in the job market, or they reveal a different set of choices and priorities.

However, even if women's salaries are lower than men's, it is possible that in some places fewer men than women are in the workforce. This would be the case if in some localities jobs traditionally occupied by men (in resource industries, manufacturing and transport, for instance) have disappeared faster than jobs that tend to be occupied by women (in retail, health and education, for instance).

Table 6.9 is the list of 36 Canadian localities in which women's participation rates (i.e the percentage of 15 to 65 year old women who have a job or are looking for a job) is within 3% of men's. The leeway of 3% is built into the analysis to account (very conservatively) for the fact that more women than men choose not to participate, often because they wish to bring up a family, a choice still uncommon for men.

Of the 36 regions thus selected, where women's participation is very close to or greater than men's, *all but one are in Canada's periphery*, and all but three are rural areas or small agglomerations. The exceptions are Sydney (NS, code 225), Corner Brook (code 15), and Rimouski (code 404). These results lend credibility to the idea that in certain resource-dependent localities, principally but not exclusively rural and almost exclusively in the periphery, women are increasingly dominating the workforce. In all but one case the observations in table 6.9 display male participation rates below the Canadian average, and only three have male participation rates above the average for peripheral rural and small town localities. Women's

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

participation rates are also low in these areas, but their role as income earners is markedly more important, relative to men's, than in other similar localities.

In other words, there are a large number of small and rural peripheral localities, clearly in economic distress given their low participation rates, in which women are playing a more important role as breadwinners than men. It is of course not possible for us to examine, in this study, the social repercussions of these changes, but evidence from elsewhere suggests that to the stresses of economic under-performance – felt by the entire population in areas of low employment - may well be added psychological and social stress specific to men due to their rapidly changing role and dissolving sense of identity⁵⁷ (Silberschmidt, 2001; Hite and Viterna, 2005; Faludi, 1998). In Australia and New Zealand, for instance, male suicide rates have been linked to the economic stress in rural areas (ABC, 16/5/2007; Pearce et al, 2007), though policy measures seem able to address this problem once it is recognised (Morrell et al, 2007). The connection between failing local economies and psychological stress is one that may merit further investigation in Canada⁵⁸.

On average, the gap between male and female participation rates is lower in peripheral areas than in central areas (Table 6.9, mean values). Whereas the participation rate for men is on average 8.5% lower in peripheral than in central localities, the rate for women is on average 5.9% lower. Thus, even though, on average, proportionally more men than women have jobs in peripheral localities (the 36 cases highlighted above notwithstanding), there is a greater penalty (in terms of participation) for men than for women associated with peripheral locations.

Table 6.10 presents some factors that are connected with the difference between male and female participation rates in 2006. The mean difference in 2006 is 10%, down from 15.2% fifteen years earlier. After controlling for synthetic regions the difference in participation rates is greatest in western Canada (where women participate less than men) and smallest in eastern Canada. It should be noted that, in 1991, Quebec had the lowest female participation rates, on average. Thus, even if in 2006 Quebec is on par with the rest of eastern Canada it is the region where female participation has been rising fastest relative to men's, particularly in the early 2000s. Without wishing to infer a direct causal link, it should be noted that, since the late 1990s,

⁵⁷ Indeed, some of the long distance commuting described in chapter 5 may be a consequence, or a way of mitigating, these circumstances. If this is the case, then these figures may be understating the problem because long-distance commuters – principally men when it comes to very long distance commutes towards resource rich areas - will still appear as 'employed' in these figures.

⁵⁸ We of course make no claim to medical expertise in this area, and there is debate about the weight to be given to psychological factors and 'proximal non-mental health variables such as employment, physical health, social factors, and personality' (Fairweather et al, 2007). However, the cited studies all emphasize the connection between employment and/or economic conditions and (particularly male) suicide rates. These, and the wider issue of the connection between health and local economic conditions, are in our opinion important but understudied areas.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

Quebec has benefitted from universal and affordable day care provision. This may have enabled more women who wanted to join the workforce to do so, thus accelerating the rise in their participation rate in Quebec (Godbout, Fortin and St.Cerny, cited in Pion, 2011). Despite Senkew's (2003) early assessment that the participation rate of women did not rise in Quebec after the 1997 implementation of \$5 a day daycare, our results clearly show that between 2001 and 2006 women's participation rates *relative to men* rose faster in Quebec than in the rest of Canada in most localities⁵⁹.

In 2006, the male to female gap tends to be larger in localities where men have higher education levels than women, tends to be higher in larger places and tends also to be higher in places which have a more specialised economy (often these are resource dependent places, Ribichesi and Shearmur, 2008). The gap tends to be lower in localities that depend on public administration and in those with an economy strongly oriented towards services. Finally, if overall participation rates are high then the gap between male and female participation tends to be higher. This confirms that it is indeed in places suffering from economic hardship (i.e. those with low participation rates) where women tend to participate in the workforce to an extent closer to men.

Differences in education levels between men and women

So far we have established that in all but very exceptional cases, women in full time jobs earn less than men in full time jobs in all localities in Canada. Furthermore, we have established that women's participation rates are almost universally lower than men's, though a small but significant number of peripheral regions belie this trend. These are significant because they may be regions in which particular problems exist for men. Whereas it is well recognised that women often earn less than men and have lower participation rates (and that, to the extent that this does not reflect personal choices, this should be corrected), this is not the case in every locality in Canada. In certain places economic restructuring has hit men particularly hard, and policies that focus on gender and economic opportunity should probably be sensitive to these different local contexts.

In this final section we look at education levels, and the indicator we use is the proportion of men and women over 15 years old with some post-secondary qualification. More specific data that we have on education levels is unfortunately not gender specific.

⁵⁹ Our analysis shows that this is true across Quebec localities. It does not show that it is the case across Quebec as a whole, since Montreal and Quebec CMAs, for instance, count as 1 observation each in our study. It would be enough for female participation to have fallen back in both these metropolitan areas for the province-wide numbers to show no progress. What we are saying here is that across Quebec's territory, female participation relative to men's has tended to rise faster than elsewhere in Canada. Pierre Fortin (cited in Lortie, 2011) suggests that Quebec's daycares have had a positive effect on Quebec's labour market because they have enabled parents' participation rates to increase.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

There are 257 localities in Canada where, in 2006, women have higher education levels than men. On the whole these localities are distributed evenly across synthetic regions, with 55 to 70% of all localities in central and peripheral areas having women more educated than men. Metropolitan areas (which represent about 14 million people, stand out since in only three (38%) are women more qualified than men. Thus, given the weight of these metropolitan areas, it is possible that in Canada as a whole, men are still more qualified than women. However, in 61% of all localities, the reverse is true. This is particularly the case in the largest peripheral cities (cities such as Halifax, Regina, Saskatoon, Sydney) for which ten out of 13 have a more educated female than male workforce.

To the extent that success in the knowledge economy is premised on human capital (sanctioned by post-secondary qualifications) then it would appear that women in a majority of localities in Canada are well positioned to take advantage of shifts away from resource and manufacturing jobs towards the tertiary and knowledge sectors. However, it must be pointed out that our results also seem to contain some contradictions, at least if a straightforward economic approach is taken. Women, who are more qualified than men in most localities, earn less than men almost everywhere for full-time jobs. Either it is the least qualified women who occupy full time jobs – which is rather far-fetched– or women do indeed obtain lower returns on their qualifications, either through choice (they give a higher priority given to non-economic activities, they work fewer hours, (see Brooks et al, 2003; Heiligers and Hingstman, 2000) or because of structural imbalances in the labour market (for example, undervalued female professions, Wright, 1997).

The proportion of localities where women have higher education levels than men is not the same across Canadian regions (table 6.12). Whereas 88% of all localities in the Prairies are in this situation, only 38% are in Quebec. Thus, Quebec stands out again: it has less overall inequality, higher female participation rates, yet lower female qualification levels across its territory than other Canadian regions.

6.4 Conclusion

The geography of inequality is not often studied by regional economists. It is usually considered to be a social rather than an economic issue. However, regional economics focuses upon the distribution of employment and income across regions, and intra-regional inequalities can be a direct outcome of factors operating at an inter-regional scale. For example regional economic factors (such as the decline in traditional manufacturing and resource jobs) can affect the occupation rates of men and women within certain regions, and certain social factors (such as the higher education levels for women or a more equal distribution of incomes in Quebec) may point to changes – or continuities - in regional economies. However, given the paucity of geographic analyses of inequality from an economic perspective, the results in this chapter are exploratory in nature.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

There are quite marked differences in local levels of income polarization across Canada. These differences are not great across synthetic regions but Quebec stands out as the region in which most localities have low levels of internal income polarisation. Given the role that this plays in terms of personal happiness, this may help to explain Quebec's relatively low out-migration rates (Delisle and Shearmur, 2010).

With regards to salary differences for full-time employment, there are very few localities in which women earn more than, or even the same as, men for full-time work. Men, when they work, tend to earn substantially more than women for full-time jobs.

However, men don't always work. There is a large – though not preponderant – number of small peripheral towns and rural areas (about 20% of them) where overall participation rates are low, but where women's rates are high compared to men's. This should not hide the fact that, in most areas (and particularly in rural and peripheral ones) women's participations rates are lower than men's. However, the social and psychological repercussions on men as they lose their economic identity have been shown, in Australia, New Zealand, and elsewhere to be potentially problematic.

Furthermore, the evolution of education levels (women are now ahead of men in most localities in Canada, and our figures do not take into account generational differences) suggests that women are poised to augment their participation rates further and, probably, the salaries that they earn for full-time work. Thus, even if the potential problems associated with the adaptation of men to changing economic circumstances are only evident – in our data – in a small number of places, the tensions that such involuntary exclusion from economic participation can cause, particularly in isolated places with few alternative opportunities, may be increasing.

Chapter 7 Canada's Northern Economy – New (and different) challenges⁶⁰

7.1 Introduction

This last chapter presents an overview of Canada's North. Using available data, we present a broad socio-economic picture of the region⁶¹. Data presented is mostly from the Census. As will be noted, this data source does not reflect all economic activity⁶². For example, the informal economy which is relatively important in the region is not included in the available data. It nevertheless allows us to highlight some interesting characteristics of Canada's northern economy. We begin by presenting some definitions of Canada's north, then describing the methodology used in the present analysis. We follow by analysing some key variables, including demographics, labour market and trade, before concluding.

7.2 Defining the North

At first glance, defining Canada's North may seem straightforward. "Most people probably consider the North to be the 'the Far North' or 'north of 60° latitude' – Yukon, the Northwest Territories and Nunavut (McNiven and Puderer. 2000). But this definition does not capture many of the essential elements that constitute the North, and it ignores those more southerly regions of the country that share similar climate, physical attributes and settlement patterns with the Far North – the northern regions of Quebec, Ontario, the Prairie provinces, British Columbia and Labrador." (McNiven. 1999).

McNiven (1999) and McNiven and Puderer (2000) argue that many variables could be used to define the North, but given the interaction and interdependence between climate, human activity and biosphere, no single variable is sufficient for such an objective. The Arctic, for example, is defined based "on natural frontiers between the arctic and sub-arctic, and draws the boundary at the southern limit of the boreal forest *while+ the 'accessibility approach'

⁶⁰ The present chapter has benefited from information received at the "Polar Statistics: Demography and Labour in a Cold Land" conference held in Whitehorse, Yukon, October 13-15, 2010, as well as from participants at a Northern Region Seminar at the 50th Annual Conference of the Western Regional Science Association, Monterey, California, March 2, 2011.

⁶¹ A more comprehensive analysis will require the integration of more qualitative information, only available through fieldwork.

⁶² The Conference Board (2011), in a recent study, produces GDP by region for the North. We have not generated such data, as from the onset a decision was made to use available data. Furthermore, the methodology used by The Conference Board, while yielding interesting information, raises some issues. For example, it assumes equal productivity within a province for a given sector. It also does not take into account the contribution of long-distance commuters from outside an economic region as the Labour Force Survey is based on the place of residence and not the place of employment.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

emphasises the economic character of the North, placing key importance on distance and population density in providing basic social and economic needs.” (McNiven 1999.) Other possible approaches presented by McNiven (1999) include the idea of the Aboriginal North, using differences in Aboriginal characteristics as principal factor, and the concept of nordicity, which focuses on cultural as well as physical factors. McNiven (1999) and McNiven and Puderer (2000) end up providing a definition based on a set of 16 variables. Using these we arrive at a definition based on a gradual transition from north to south, instead of a distinct north-south divide.

Du Plessis et al. (2002), in their review of various definitions of regions, present the “Modified Beale Codes”, which include a category which focuses on Canada’s north, the northern hinterland. It is defined (Du Plessis et al. 2002) as census divisions “that are entirely or in major part north of the following parallels by region: Newfoundland, 50th; Quebec and Ontario, 49th; Manitoba, 53rd; Saskatchewan, Alberta, and British Columbia, 54th; and all of the Yukon, Northwest Territories, and Nunavut.” (See Table 7.1 and Map 7.1) Factors which influence this definition include settlement context, population size and density. An important difference between the definition proposed by McNiven (1999) and McNiven and Puderer (2000) and the “Modified Beale Codes” is that while the first does not translate easily in regions for which Statistics Canada data is available, the second is based on Statistics Canada’s census divisions.

From a public policy perspective, the Government of Canada established in 2008 a new agency, the Canadian Northern Economic Development Agency (Canadian Northern Economic Development Agency Web Site). Its mandate is to support economic development in Yukon, the Northwest Territories and Nunavut. At the same time, other Canadian regional agencies (ACOA, FedNor, DEC, Western Diversification) are responsible for regions which fall in a broader definition of the north than only the three territories.

In the context of our analysis, we will use the “Modified Beale Codes” typology for most statistics, while having a special focus on Yukon, the Northwest Territories and Nunavut. Some statistics, such as exports, are only available at the provincial and territorial levels. For these, our analysis will only focus on the territories. When available, we present data for all census divisions in the “Modified Beale Codes” northern hinterland category. When our analysis is at the sub-division level, we will focus our analysis on Yukon, the Northwest Territories and Nunavut.

7.3 An Analysis of some Characteristics

7.3.1 Demographics

Canada’s north does not have a large population and has a very low population density (Figure 7.1). In 2006, it represented 2% of Canada’s total population. Of these, nearly a quarter is in Ontario two “northern census divisions”. The largest census division – Cochrane – has a

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

population of 82,503, and the smallest – Stikine – has a population of 1,109. Turning our attention to the population of Canada's three territories, we find very few urban centres. In Yukon (Figure 7.2), Whitehorse is the largest urban centre with a population of 20,461, in the Northwest Territories (Figure 7.3), it is Yellowknife with a population of 18,700, and in Nunavut it is Iqaluit with 6,184. The fourth largest urban center in the three territories is Hay River (NT) with a population of 3,648. Consequently, an important characteristic of Canada's north is not only the fact that it does not have a large population, but that it is very rural and has no large urban centre, very often with small, isolated, communities.

These characteristics are very important. Although remoteness and isolation varies greatly across the north, major markets are distant. While Yukon has direct access through roads and ports (only one community does not have year-round road connection to southern markets), bringing goods to market is a much greater challenge for the Northwest Territories and especially Nunavut. As local market alone are not sufficiently large to generate efficient production levels for most goods – and often services – bringing goods to market is very costly. In Nunavut there are no road connections to the southern markets, while for the Northwest Territories, there are no year-round road connections. These conditions simply make it uneconomical – in most cases – to produce goods for export markets.

Population growth in Canada's north is not homogeneous. While census divisions in the three territories all have growth rates above the Canadian average for the period 2001-2006 (Figure 7.5), only six of the 18 census divisions “south of 60°” have a positive population growth rate. Even in the territories, growth is far from generalised, especially in Yukon and the Northwest Territories (Figures 7.6 – 7.8). Growth is strongest in the Northwest Territories and in Nunavut.

An important characteristic of Canada's northern population is its relative youth (Figure 7.9, McNiven 1999). This is especially true in the northern census divisions of Manitoba, Saskatchewan, the Northwest Territories and Nunavut. It is also true for the Nord-du-Québec and Newfoundland's census division 11, which covers the northernmost part of Labrador. These all have important aboriginal communities, as we will see in section 7.3.2. Interestingly, Yukon's median age is barely below the Canadian average. To reinforce this result, we can observe that the census sub-division in Yukon with the lowest median age – at 33.2 years – not only is above the median age for the Northwest Territories and Nunavut as a whole, but also above the median age of all census sub-divisions in Nunavut (Figures 7.10-7.12). Furthermore, in northern regions “south of 60°”, as can be deduced from Figure 7.9, population ageing is generally as much an important issue as it is for Canada as a whole (Southcott. 2002). The north is indeed far from homogeneous.

7.3.2 Aboriginal Communities

Nine of Canada's 24 northern census divisions have a majority of Aboriginal population (Figure 7.13). In another 5, the Aboriginal population represents 40 to 50% of total. Eighteen of the 24 census divisions have an Aboriginal population representing more than 25% of the population. There is a strong correlation between the relative presence of Aboriginal population and median age, as we can observe comparing Figures 7.9 and 7.13. This could have important implications for public policy (Natcher. 2008). This question warrants further research.

While Nunavut's population (Figure 7.16) is overwhelmingly Aboriginal – the census division with the lowest percentage of aboriginal population is Iqaluit at 60.4% - it is less the case for the Northwest Territories (Figure 7.15) and even less so for Yukon (Figure 7.14). In Yukon, nearly half (11 of 24) of the census sub-divisions have an Aboriginal population above 50%, but the most populous sub-divisions have a relatively small Aboriginal population. The same is true, although to a lesser extent, in the Northwest Territories. We can thus conclude that Canada's north has an important Aboriginal community – especially in Nunavut and the Northwest Territories, as well as in some census divisions “south of 60°” – but this population is generally located in more rural – and smaller – communities. Focusing on trends, on the other hand, we can point out that Dybroe (2008) concludes that Inuit society is increasingly urbanising.

7.3.3 Labour Market

Economic conditions – measured through the employment rate – vary greatly in Canada's north (Figure 7.17). In a handful of census divisions, the employment rate is far above the national average. At the same time, the employment rate is generally lower than the Canadian average – and often well below this average. This is a reflection of the north's dependency on key projects which are generally linked to natural resources extraction (for example oil and gas in northern Alberta or diamonds in the Northwest Territories).

Yukon's employment rate is significantly above the national average (70.7 vs 62.4%), but several communities have a very low employment rate (Figure 7.18). The same is true for the Northwest Territories (68.6%), but in this case, more communities than in Yukon have a low employment rate, with the vast majority having an employment rate below 50% (Figure 7.19). In Nunavut's case (Figure 7.20), the employment rate is well below the national average (55.2%). Further analysis is warranted as the presence of an informal economy may – in part – explain part of the gap. This being said, these statistics do reflect the fact that the north is – again – not homogeneous and that in regions without “exportable commodities”, economic conditions are very challenging.

Canada's north is generally highly dependent on primary employment (Figure 7.21). In most northern census divisions “south of 60°” the relative weight of primary employment is with a very few exceptions two to three, or even seven, times the national average. For the six census

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

divisions “north of 60”, the “dependency” is much smaller. In the three territories, we have some census sub-divisions with a relatively higher proportion of primary employment, while other census sub-divisions have none (Figures 7.22 – 7.24).

A third (six of 18) of the northern census divisions “south of 60” have a percentage of manufacturing employment higher than the Canadian average (Figure 7.25). These are generally linked to the forestry sector, and as this sector has faced significant challenges of late, more recent data could reveal that its relative weight has decreased. Turning our attention “north of 60”, we find a relatively small presence of manufacturing employment. In this case, the forestry sector is not a player, and distance from major markets represents a major challenge for the sector.

A very interesting result is the relative importance of public administration employment (Figure 7.26). In all but a few northern census divisions, the percentage of employment in this category is significantly higher than the national average. Such results may as much be a reflection of the weakness of other sectors as a reflection of the “strength” of the public administration sector, but it is an important characteristic. One could argue that – in addition to a few resource-based projects and an informal economy which we have not been able to document due to a lack of data – the public administration sector represents the backbone of Canada's northern economy. This does have implications. First – and it may explain its relative strength – the sector does not react to market conditions as other sectors do. This has the advantage of – generally – yielding more stable employment. On the other hand, the sector may play the role of “an intrusive rentier” (see Chapter 4) and stifle small business development.

7.3.4 Education and Income

Figure 7.27 shows the percentage of adult population (15 years of age and above) without a high school degree. Only two of Canada's northern census divisions fall below the Canadian average by this measure. Most are significantly above the national average. An analysis by age category is warranted to complete this analysis as – at least in part – these results may be influenced by the relatively younger population in some of the census divisions, as a higher proportion of the population above 15 years of age may still be in high school. Nevertheless, the results do reveal a workforce that has lower educational attainment than the national average. This could be in part the result of the relative scarcity of facilities. This does translate in additional challenges in economic development efforts. Yukon's results are also noteworthy – below the national average – reinforcing the fact that the reality in Yukon is different than the situation in the two other territories, as well as different from most census divisions “south of 60”.

Given the various characteristics already presented, it should come as no surprise that average income in Canada's northern census divisions is generally lower than the Canadian average

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

(Figure 7.28). A notable exception is Alberta's census division 16 (oil and gas). With only one exception (Northern Rockies (BC)), all other census divisions "south of 60" have an average income below the Canadian average. Average income in Yukon and the Northwest Territories is above the national average, while it is also the case in one of Nunavut's three census divisions. In Yukon (Figure 7.29), we do find some disparities between communities, but these disparities are much larger in the Northwest Territories (Figure 7.30) and Nunavut (Figure 7.31).

Note that not taking into account the higher cost of living, as well as the relative importance of the informal economy makes any precise conclusions difficult without additional information. This requires further research.

7.3.5 Trade

Trade data highlights the relatively small importance of exports for Canada's north, but also the impact of a few large projects on the region's economy (Figure 7.32 – 7.34). The Northwest Territories is – by far – the most important exporter, but these results are the direct result of the diamond sector. The probable development of a few mines in Yukon should boost the value of Yukon's exports, as well as have an impact on its labour market. Plans for a "fly in – fly out" workforce – at least in part – for these new mines may end up being a very wise strategy as the infrastructure – physical and social – required if a significant amount of workers and their families settled "permanently" could be important, but with a useful lifespan only equal to the life of the mine. This impact of this phenomenon of "fly in – fly out" workers warrants further research.

For Nunavut, the steady rise of the value of exports of "original sculpture" highlights the state of the region's economy. "Unique" products can be exported, even with high transportation costs. In the absence of special competitive advantage factors, distance to markets makes the region's products uncompetitive.

7.4 Conclusion

Canada's north is far from being homogeneous. Nevertheless, all of its regions do face similar challenges, although the relative importance of these varies. As is the case for peripheral regions closer to the Canada-U.S. border, distance to markets and population density matters. A low population density means that the region's firms will not have access to an important local market and if they only rely on this local market, the production level will most likely be inefficient, not enabling firms to take advantage of potential economies of scale to reduce the average production cost. If they want to access larger markets, transportation costs will force them to be very competitive and develop comparative advantages, such as relatively lower wages. Exceptions to this are cases where firms have a "unique product" such as diamonds or original sculptures.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

In Canada's north, the challenges are amplified, compared to the "southern peripheral regions" as population density is generally much lower and transportation infrastructure less developed. This has an impact on the region's relative competitive position. Challenges are also going to be amplified with forecasted climate change. This will result in the end of the permafrost in many communities, with its impact on physical infrastructure as well as ice melting earlier in the spring and the ice freezing later in the Fall.

Under such circumstances, are we asking the wrong questions? Instead of asking how we can improve the region's competitiveness, should we rather ask whether the notion of competitiveness is a useful concept (or goal) for Canada's north? There are some exceptions where northern firms can be competitive – as we have pointed out – but in most cases, it does not seem that geography and demographics will allow the region's firms to become competitive on larger markets. Increasing energy costs will simply amplify the challenge.

Consequently, should we simply accept that, with a few exceptions, Canada's north is simply not in a position to export products at a competitive cost. On the other hand, there is a rationale for the continued financial support of Canada to the region. To defend Canada's sovereignty in the region, should Canada pursue a strategy of maintaining a strong presence in the north, with the required investments to the region's population?

8. Conclusion: Directions for Future Research

8.1 Introduction

This overview of recent trends in Canada's regional economies raises as many questions as it answers. New challenges are emerging. There is much we do not fully understand. We thus end this study with an identification of possible avenues for future research on the economy of Canada's regions and communities.

8.2 Understanding community resilience

Some communities, often similar in size and economic base, have fared better than others during the recent economic downturn. What factors explain community resilience in the face of major outside shock? ?

8.3 The new role of wages in the Canadian landscape

Wages are an important component of a business's cost structure. Economic theory tells us that these reflect the marginal productivity of labour. Regional wage levels are thus important: if "too" high compared to the marginal productivity of labour, a business will not be competitive. On the one hand, many factors influence the marginal productivity of labour, including agglomeration economies. On the other hand, workers in a rentier economy (e.g. oil and gas and mining) may have wages that reflect as much – if not more – the nature of the industry as the marginal productivity of labour. These rentier economies are very often located in more "remote" – regions. Furthermore, some manufacturing sectors under less than perfect competition conditions may generate above "average" wages (e.g. auto sector). What is the role of local wage level on regional performance? How do they affect the location of economic activity?

8.4 Southern Ontario: avoiding the rust belt syndrome

We saw that the decline in southern Ontario's economy preceded the last economic downturn, pointing to more fundamental factors. What might these be? What can be done to avoid the rust belt syndrome, affecting industrial regions in parts of Europe and the United States?

8.5 Growing "remote" regions: why some regions outperform expectations

Some "remote" regions outperform expectations, we saw, growing in the face of significant odds, growth not captured by the econometric model applied in the study. . What have we missed?

8.6 New challenges facing Canada's four major metropolitan areas

While growth has generally been better in the larger urban areas, Canada's four major metropolitan areas face new challenges. We found that Toronto shows signs of over-specialization in finance and related industries, making it vulnerable to business cycles. Montreal is still a comparatively slow growth economy. Vancouver could be considered a Teflon city, whose growth is as much founded on its "residential" as on its economic advantages. And Calgary remains highly specialized in extractive-linked industries (the oil patch) with few clear signs that its economy is diversifying. Given this, what are the particular challenges for Canada's four major metropolitan areas? Given the current poor performance of manufacturing in Southern Ontario, is Toronto's current growth rate sustainable? With the relative strength of Southern Quebec's manufacturing cities, and with a growing specialization in cultural and "creative" industries, is Montreal poised on a renaissance of sorts? Is Vancouver's growth sustainable, given the increase in housing prices? Is Calgary growth rate sustainable given the continuing low level of diversification?

8.7 "Love thy neighbour": the role of cross-border linkages

We saw that the economic performance of Canadian regions is apparently influenced by economic conditions in neighbouring regions south of the border. From a continental perspective, Winnipeg is clearly "peripheral"; but it is located at the northern tail end of an apparently dynamic growth corridor. Minneapolis – St. Paul urban region systematically comes out on top among U.S. cities on many measures of economic performance. How important are cross-border linkages? How significant are they in explaining the relative economic prosperity of Canadian regions? What factors influence these cross-border linkages?

8.8 The impact of rising energy costs: a double-edged sword

The sustained trend towards higher energy costs is having an impact on the cost of doing business in general and of transporting goods and services in particular.. For firms facing high transportations costs – very often in more "remote" regions– this can translate into a significant loss in competitive advantage. However, for firms whose competitors have higher transportation costs – for example overseas competitors – rising energy costs can lead to an improvement in their competitive position. Given these opposing forces, what is the probable impact of rising energy costs on the landscape of economic activity in Canada?

8.9 The residential economy: new opportunities for some communities

We have seen that there is a new economy base is emerging in some Canadian communities The 'residential economy' is one that grows not because it trades goods or services, but because people live and spend money there money earned elsewhere. Although we were able to identify the presence of residential economies in some regions, further evidence is needed to understand the full scope of its presence in Canada. What factors explain the rise of a residential

economy in a given region? And what are the impacts and consequences of the presence of residential economy?

8.10 Inequalities within regions and its implications

We observed that levels of inequality within regions – with respect to gender and schooling – varied significantly. What other inequalities might also vary? What are the underlying causes of these varying levels of inequality, and what are the impacts? In some regions, the latest economic downturn has had a more significant impact on men than women. What are the implications?

8.11 The north

We presented an overview of Canada's northern economy. Focusing first on Canada's three territories, we found that their economies are far from homogeneous, facing challenges (e.g. distance to market, remote communities, relatively small local markets, etc.) that are not unique to the north, but more acute than in other remote regions. The unique dynamics of Canada's northern economy call for in-depth and on-the-ground analysis. Ultimately, if distance and small market size continue to hamper export activity outside the resource sector, we may need to rethink economic development objectives.

8.12 The north, south of 60°

Most Canadian provinces (the three Maritime Provinces being the exception) have northern regions that share many characteristics, not unlike those noted above, although generally less acute. What special challenges does Canada's "provincial north face"? What are the implications for public policy?

Appendix 1 – Region Definitions using LFS (Labour Force Survey) Data

Southeastern Quebec (LFS Economic Regions)

Code - Name

2425 - Chaudière-Appalaches

2430 - Estrie

2433 - Centre-du-Québec

Southwestern Ontario (LFS Economic Regions)

Code - Name

3550 - Hamilton - Niagara Peninsula

3560 - London

3570 - Windsor - Sarnia

Maritime Corridor (LFS Economic Regions)

Code - Name

1320 - Moncton - Richibucto

1340 - Fredericton - Oromocto

1350 - Edmundston - Woodstock

Prince Edward Island

1220 - North Shore

1230 - Annapolis Valley

1250 - Halifax

Alberta Corridor (LFS Economic Regions)

Code - Name

4830 - Calgary

4810 - Lethbridge - Medicine Hat

4850 - Red Deer

4860 – Edmonton

Lower BC Mainland (LFS Economic Regions)

Code - Name

5920 - Lower Mainland - Southwest

Appendix 2 - Industry Definitions (NAICS code and description)

Wholesaling and Distribution

493 Warehousing and storage

413 Food, beverage and tobacco wholesaler-distributors

411 Farm product wholesaler-distributors

412 Petroleum product wholesaler-distributors

414 Personal and household goods wholesaler-distributors

415 Motor vehicle and parts wholesaler-distributors

4162 Metal service centres

4163 Lumber millwork hardware and other building supplies

wholesaler-distributors

417 Machinery equipment and supplies wholesaler-distributors

418 Miscellaneous wholesaler-distributors

419 Wholesale agents and brokers

High-Tech Manufacturing

3341 Computer and peripheral equipment manufacturing

3343 Audio and video equipment manufacturing

3342 Communications equipment manufacturing

3344 Semiconductor and other electronic component manufacturing

3364 Aerospace product and parts manufacturing

3254 Pharmaceutical and medicine manufacturing

3345 Navigational measuring medical and control instruments manufacturing

3346 Manufacturing and reproducing magnetic and optical media

3391 Medical equipment and supplies manufacturing

BIBLIOGRAPHY

- ABC, 2007, *Outback Depression Situation Near Crisis Point, Health Conference Told*, Australian Broadcasting Association, G.HUSSEY, <http://www.abc.net.au/7.30/content/2007/s1925070.htm> consulted on 5th November 2010
- APPARICIO, P., G.DUSSAULT, M.POLÈSE and R.SHEARMUR, 2007, Transport Infrastructure and Local Economic Development. A Study of the Relationship between Continental Accessibility and Employment Growth in Canadian Communities, Montréal: INRS-Urbanisation, Culture et Société, 94p.
- BREUER, T., 2005, Retirement Migration or rather Second-Home tourism? German Senior Citizens on the Canary Islands, *Die Erde*, 136.3, 313-333
- BROOKS, P., H.LAPSLEY and D.BUTT, 2003, Medical Workforce Issues in Australia: « Tomorrow's doctors – too few, too far », *The Medical Journal of Australia*, 179, 206-208
- BROWN, D. and N.GLASGOW, 2008, Rural Retirement Migration, New York: Springer
- BUTTON, K. and H.VEGA, 2008, The Effects of Air Transportation on the Movement of Labour, *GeoJournal*, 71, 67-81
- BYE, L., 2010, 'How to be a rural man': Young Men's Performances and Negotiations of Rural Masculinities, *Journal of Rural Studies*, 278-88
- Canadian Northern Economic Development Agency Web Site. www.north.gc.ca
- CANUDA-ROMO, V., 2008, The Modal Age at Death and the Shifting Mortality Hypothesis, *Demographic Research*, 19, 1179-1204
- CBC, 2007, Long Commute, Huge Rewards: Alberta Oilpatch Changing NL Labour Force, 29th october 2007, CBCNews, <http://www.cbc.ca/news/canada/newfoundland-labrador/story/2007/10/29/big-commute.html> , viewed on 8th March 2011
- CHOKIE, M. and M.PARTRIDGE, 2008, Low-Income Dynamics in Canadian Communities: A Place-Based Approach, *Growth and Change*, 39.2, 313-40
- COFFEY W. and POLESE M., 1988, Locational shifts in Canadian employment, 1971–1981, decentralisation versus decongestion, *Canadian Geographer* 32, 248–255
- COFFEY.W. and R.SHEARMUR, 1996, *Employment Growth and Change in the Canadian Urban System, 1971-94*, Ottawa: Canadian Policy Research Network, 195p
- CRÉPON, B., N.DENIAU and S.PÉREZ-DUARTE, 2003, *Wages, Productivity and Worker Characteristics : A French Perspective*, Centre de Recherche en Économie et Statistique, Working paper 2003-4

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

- DAVEZIES, L., 2009, L'économie locale 'résidentielle', *Géographie, économie et Société*, 11.1, 47-53
- DELISLE, F. and R.SHEARMUR, 2010, Where Does all the Talent Flow? The Migration of 20-34 year old Graduates, Canada, 1996-2001, *The Canadian Geographer*, 54.3, 305-323
- DESJARDINS, P.-M. et Y. BOURGEOIS. 2008. *SME Financing in Atlantic Canada: Assessing Gaps and New Avenues for Actions*. Moncton: Institut canadien de recherche en politiques et administrations publiques
- DICKEN, P. and P.LLOYD, 1990, *Location in Space*, New York: Harper and Row
- DUINDAM, J., 2005, Vienna and Versailles Materials For Further Comparison and Some Conclusions, *Zeitenblicke*, 4.3, <http://www.zeitenblicke.de/2005/3/Duindam> , urn:nbn:de:0009-9-2411, viewed on 8th March 2011
- Du Plessis, Valerie, Roland Beshiri, Ray D. Bollman and Heather Clemenson. 2002. "Definitions of 'Rural'". Agriculture and Rural Working Paper Series. Working Paper No. 61. Ottawa: Statistics Canada. Catalogue No. 21-601-MIE – No. 061.
- Dybbroe, Susanne. 2008. "Is the Arctic really urbanising." *Études/Inuit/Studies*. 32(1) 13-32. <http://id.erudit.org/iderudit/029817ar>.
- EASTERLIN, R., 2001, Income and Happiness: Towards a Unified Theory. *Economic Journal*, 111 : 465-484
- FALUDI, S., 1999, *Stiffed: The Betrayal of the American Man*, New York: William Morrow
- FAIRWEATHER, K., ANSTEY, K., RODGERS, B., JORM, A., CHRISTENSEN, H. 2007, Age and Gender Differences Among Australian Suicide Ideators: Prevalence and Correlates, *Journal of Nervous and Mental Disease*: 195.2, 130-136
- FLORIDA, R. 2002, *The Rise of the Creative Class*, New York: Basic Books
- FRIEDAN, B., 1963, *The Feminine Mystique*, New York: Norton
- GLAESER, E. (2005) "Reinventing Boston 1630-2003" *Journal of Economic Geography* 5: 119-153.
- HEILIGERS, P. and L.HINGSTMAN, 2000, Career Preferences and the Work-family Balance in Medicine : Gender Differences Amongst Medical Specialists, *Social Science and Medicine*, 50, 1235-46
- HITE, A. and J.VITERNA,, 2005, Gendering Class in Latin America: How Women Effect and Experience Change in the Class Structure, *Latin American Research Review*, 40. 2, 50-82
- JACOBS, J. , 1969, *The Economy of Cities*. New York: Random House
- KALDOR, N., 1970, 'The Case for Regional Policies' in *The Essential Kaldor (1989)*, eds. Targetti.F and A.Thirlwall, New York: Holmes and Meier

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

KARLSSON, C. and M.OLSSON, 2006, The Identification of Functional Regions: Theory, Methods and Applications, *Annals of Regional Science*, 40, 1-18

KRAHN, H. and G.LOWE, 1998, *Work, Industry and Canadian Society*, Scarborough (ON): Nelson

KRUGMAN, P., 1995, *Development, Geography and Economic Theory*, Cambridge: MIT Press

LALANNE, A. et R.SHEARMUR, 2010, La métropolisation à l'aune de la 'loi' taille/rang: Le cas Canadien, 1971-2001, *The Canadian Geographer*, in press, on line at <http://onlinelibrary.wiley.com/doi/10.1111/j.1541-0064.2010.00311.x/pdf>

LEMELIN, A. and P.MAINGUY, 2005, *Estimation du produit intérieur brut régional des 17 régions administratives du Québec 1997-2000*, Cahier technique et méthodologique, Institut de la statistique du Québec

LORTIE, M-C., 2011, Garderies et Liberté, *La Presse*, 8th March 2011, <http://www.cyberpresse.ca/chroniqueurs/marie-claude-lortie/201103/08/01-4377050-garderies-et-liberte.php> , viewed on 14th March 2011

LUCAS, R., 1988, On the Mechanics of Economic Development, *Journal of Monetary Economics* 22, 3-42.

McCALL, L., 2001, *Complex Inequalities: Gender, Class and Race in the New Economy*, New York : Routledge

McDonald, J.F. (2008) *Urban America: Growth, Crisis, and Rebirth*, M. E Sharpe, New York and London.

McDOWELL, L., 1997, *Capital Culture: Gender at Work in the City*, London : Wiley-Blackwell

McDOWELL, L., 2001, Men, Management and Multiple Masculinities, *Geoforum*, 32.2, 181-198

McDOWELL, L., 2003, Redundant Masculinities? Employment Change and White Working Class Youth, Malden (MA) : Blackwell

McDOWELL, L., 2010, Capital Culture Revisited : Sex, Testosterone and the City, *International Journal of Urban and Regional Research*, 34.3, 652-8

McNiven, Chuck. 1999. "North is that direction." *Canadian Social Trends*. Ottawa: Statistics Canada. Catalogue No. 11-008. 8-11.

McNiven, Chuck and Henry Puderer. 2000. *Delineation of Canada's North: An Examination of the North-South Relationship in Canada.*" Geography Working Paper No. 2000-3. Ottawa: Statistics Canada. Catalogue No. 92F0138MIE.

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

- MOKTARIAN, P., G.COLLANTES and C.GERTZ, 2004, Telecommuting, Residential Location and Commute-distance Traveled: Evidence from State of California Employees, *Environment and Planning A*, 36, 1877-97
- MORREL, S., A.PAGE and R.TAYLOR, 2007, The decline in Australian young male suicide, *Social Science and Medicine*, 64.3, 747-754
- MYLOTT, E., 2009, *Urban-Rural Connections: A Review of the Literature*, Scholar's Archive Working Paper, Oregon State University, <http://hdl.handle.net/1957/10574>, viewed on 8th March 2011
- MYRDAL, G, 1959, *Théorie Economique et Pays Sous-Développés*, Paris: Présence Africaine
- Natcher, David C. 2008. *The Social Economy of Canada's Aboriginal North*. Paper submitted to: Northern Research Forum "Seeking Balance in a Changing North", 24-27 September 2008, Anchorage, Alaska.
- NUSSBAUM, M., 2000, *Women and Human Development*, Cambridge: Cambridge University Press
- PEARCE, J., R.BARNETT, S.COLLINGS and I.JONES, 2007, Did geographical inequalities in suicide among men aged 15–44 in New Zealand increase during the period 1980–2001? *Australian and New Zealand Journal of Psychiatry*, 41. 4 , 359-365
- PION, I., 2011, Les CPE: un outil de prospérité économique, *Cyberpresse*, 9/05/2011, accessed on 17th May 2011, <http://www.cyberpresse.ca/la-tribune/sherbrooke/201105/09/01-4397499-les-cpe-un-outil-de-prosperite-economique.php>
- POLÈSE.M. and R.SHEARMUR, with the collaboration of P_M.DESJARDINS and M.JOHNSON, 2002, *The Periphery in the Knowledge Economy*, Montréal: INRS-Urbanisation Culture et Société, and Moncton: ICRDR (237 pages)
- POLÈSE.M. and R.SHEARMUR (2004) Is Distance Really Dead? Comparing Industrial Location Patterns over Time in Canada. *International Regional Science Review*, 27, 4: 1-27.
- POLÈSE.M. and R.SHEARMUR (2006) Growth and Location of Economic Activity: The Spatial Dynamics of Industries in Canada 1971-2001. *Growth and Change*, 37 (3): 362-395.
- PORTER. M., 2003, The Economic Performance of Regions, *Regional Studies*, 37.6-7, pp549-578
- RAWLS, J., 1971, *A Theory of Justice*, Cambridge: Harvard University Press
- RIBICHESI, C. et R.SHEARMUR, 2008, *Les communautés mono industrielles au Québec: Portrait et analyse de la vulnérabilité économique des communautés au Québec*, rapport préliminaire remis à Développement économique Canada le 31 Mars 2008, 200p (incluant annexes)
- ROBINSON, S., 2000, *Marked Men: White Masculinity in Crisis*, New York: Columbia University Press .

The Evolution of Canada's Regional Economies: Structural Patterns, Emerging Trends and Future Challenges

- ROMER, P., 1989, *Human Capital and Growth: Theory and Evidence*, NBER working paper no.W3173
- ROSIN, H., 2010, The End of Men, *The Atlantic*, July/August 2010, <http://www.theatlantic.com/magazine/archive/2010/07/the-end-of-men/8135/>, viewed on 8th March 2011
- SEN, A., 1992, *Inequality Re-examined*, Cambridge: Harvard University Press
- SENKEW, A., 2003, Quebec's Childcare Policy, *Saskatchewan Journal of Economics*, 2003.5, 15-24
- SHEARMUR, R., 2006, Géographie de la population âgée au Québec, 6 juin 2006, présentation à *Développement économique Canada*, DEC Montréal
- SHEARMUR, R. and N.BONNET, 2010, *Like Oil and Water? Regional Innovation Policy and Regional Development Policy*, INRS working paper, 2010-02, Montréal: INRS UCS, http://www.inrs-ucs.quebec.ca/pdf/inedit2010_02.pdf
- SHEARMUR, R. and M.POLÈSE, 2005, *La géographie du niveau de vie au Canada, 1971 à 2001*, Montréal: INRS-UCS, soumis au Ministère de l'Industrie, 139p (plus résumé de 15p).
- SHEARMUR, R. and M.POLÈSE, 2005b, Diversification and Employment Growth in Canada, 1971-2001: Can Diversification Policies Succeed? *Le Géographe Canadien/ Canadian Geographer*, 49.3, 272-290
- SHEARMUR, R., and M.POLÈSE, 2007, Do Local Factors Explain Local Employment Growth? : Evidence from Canada, 1971-2001, *Regional Studies*, 45.4, 453-471
- SILBERSCHMIDT, M., 2001, Disempowerment of men in Rural and Urban East Africa : Implications for male Identity and Sexual Behavior, *World Development*, 29.4 : 657-71
- SMITH, M. and J.PARKINS, 2011, *Community Response to Forestry Transition in Rural Canada. Rural economy Project Report*, University of Alberta: Department of Rural Economy
- Southcott, Chris. 2002. *An Aging Population in Northern Ontario*. 2001 Census Research Paper Series: Report #3. A report prepared for the Training Boards of Northern Ontario.
- STATISTICS CANADA, 2010, University Enrolment 2008/2009, *The Daily*, Wednesday 14th July 2010
- STATISTICS CANADA, 2010, *2006 Census Dictionary*, Ottawa: Ministry of Industry
- URBAIN, J-D, 2002, *Paradis verts : désirs de campagne et passions résidentielles*, Paris : Payot
- WRIGHT, E., 1997, *Class Counts*, Cambridge: Cambridge University Press